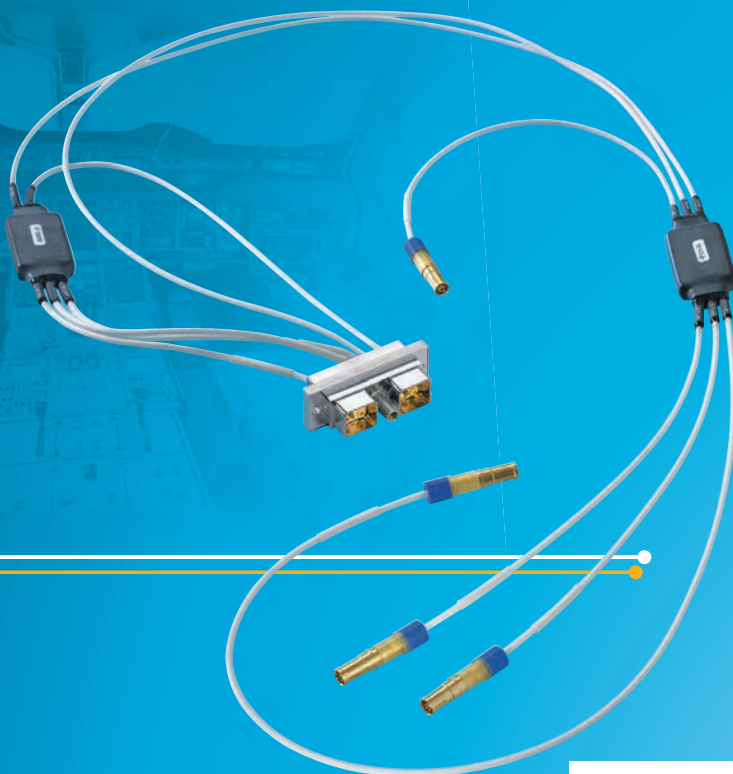


MIL-STD-1553 Databus products for aeronautics applications



MIL-STD-1553 databus products for aeronautics applications

April, 2016

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Databus products

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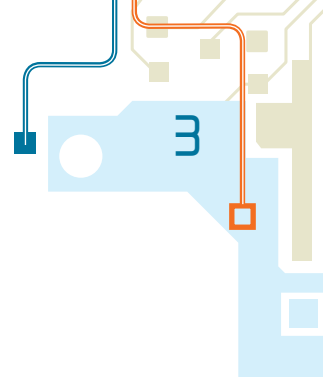
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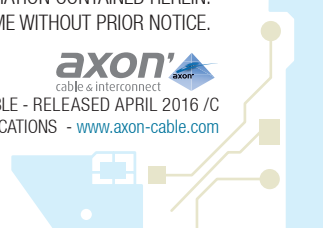
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THIS CATALOGUE IS INTENDED AS A GUIDE TO AID SELECTION OF AXON' PRODUCTS.
THE INFORMATION IN THIS CATALOGUE IS ACCURATE TO THE BEST OF OUR KNOWLEDGE AT TIME OF GOING TO PRINT,
HOWEVER, AXON' CANNOT BE HELD LIABLE FOR ANY ERRORS MADE AS A RESULT OF INFORMATION CONTAINED HEREIN.
CHANGES AND MODIFICATIONS CAN BE MADE TO THIS BROCHURE AT ANY TIME WITHOUT PRIOR NOTICE.



Expert in Databus Products

AXON' CABLE designs and manufactures custom designed interconnect solutions including electrical wires, round or flat cables, flat flexible cables, composite cables, coaxial cables, cable assemblies, high data rate links, connectors and mini systems for any application including aeronautics, military, space, automotive, consumer electronics, industry, medical and research centres.

MIL-STD-1553 databus products

AXON' CABLE specialises in the design and manufacture of all components used in data transmission systems in compliance with the **MIL-STD-1553 standard**. This is the protocol of dialogue for strategic on-board systems for aeronautics, space and military applications. These reliable transmission networks offer high security of data, signal integrity, weight and space saving, as well as a fast diagnostic of all equipment connected to the bus. AXON's databus products include databus cables, in-line couplers, in-line couplers to be cabled (ACC), rack couplers, relay couplers, box couplers, databus connectors, triaxial contacts and accessories (databus terminators, stub loads, braids, connector backshells, splices, etc).

Databus cables

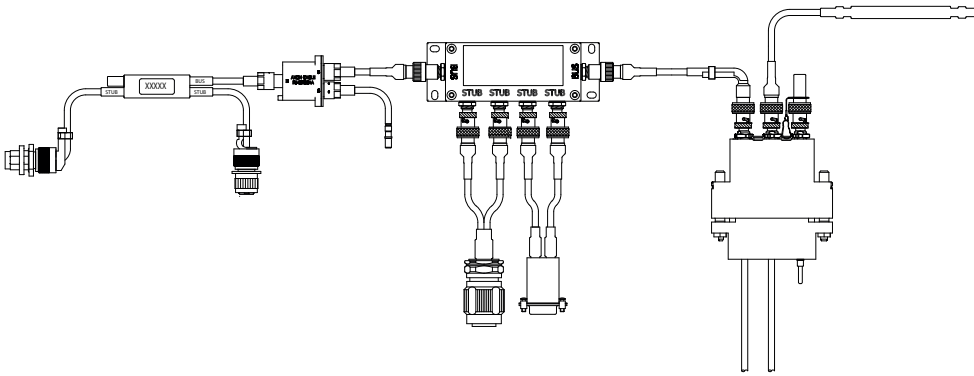
Databus cables are 22, 24 and 26 AWG screened twisted-pair cables. All of them are designed to meet 77 Ω nominal impedance. AWG 24 cables are a good compromise between the electrical, space and weight characteristics, whilst AWG 26 cables provide a reduction in weight.

In-line couplers

In-line AMB couplers for 1 to 8 stubs are an excellent weight-saving and cost-effective solution. Generally speaking, in-line couplers are dedicated to networks with a fixed design. These couplers are available in aeronautics and space versions. For the space version, please ask for our catalogue "cables and harnesses for space applications".



IN-LINE COUPLERS



BOX COUPLER

Box couplers

Box couplers ADB for 1 to 6 stubs are removable couplers. Easy to use, they are an ideal solution for prototype manufacture or as a means of reducing maintenance cost. Removable databus box couplers allow the user to build its databus network for itself, branches can be easily changed.

ACC couplers

AXON' has developed a new concept of coupler which enables customers to build their Bus network for on-board equipment for themselves. Dismountable and lightweight: the **Cabling Coupler** has all the advantages of both in-line couplers (see page 12) and box couplers (see page 42) but with none of the drawbacks.

This is an ideal solution covering the various options of space modelling, maintenance and service equipment. This coupler provides flexibility to the databus designer. It meets the MIL-STD-1553 standard.



ACC COUPLER

Rack couplers

AXON' also offers rack couplers which fit to the existing fixation system in **electrical racks**. All couplers are concentrated into a rack and the stubs are routed from the rack to the equipment. They are particularly well adapted to meet the requirements of aeronautics standard racks in civil and military aircrafts.



RACK COUPLER

Relay couplers

They have been developed for applications which require to allow for an **automatic disconnection** of a number of equipment from the network without affecting the other remote terminals already connected. For example, this is the case when a ground test bench is connected to an aircraft or in the case of applications which need to simultaneously disconnect a group of devices (a satellite or a rocket).

AXON's relay couplers transmit the signal without distortion and they can switch the signal to another line or to a particular component.



RELAY COUPLER

Databus connectors

AXON' has developed several types of connectors and contacts dedicated to MIL-STD-1553 Bus assemblies. **ACB1 triaxial connectors** are suitable for any type of 24 AWG shielded twisted pair cables. They are easy to assemble as central and intermediate contacts are crimped in the same step. A single crimping tool M22520/5.01 with an AXON' die is required. Moreover, the mounting of the ACB1 connector does not require potting. ACB1 connectors and mating halves can integrate either pin or socket contacts. They are available in both threaded and bayonet versions with 3 and 4 lugs (locking system).

They are suitable for on-board material as well as for land-based equipment.

A space-saving elbow version is also available.

In addition to triaxial connectors, Axon' Cable offers size 8 and size 10 triaxial contacts.



ACB1 DATABUS CONNECTOR

Dissimilarity: high security redundancy

A typical MIL-STD-1553B system consists of a number of stubs, bus lines and remote terminals, some of which may be duplicated for redundancy purposes.

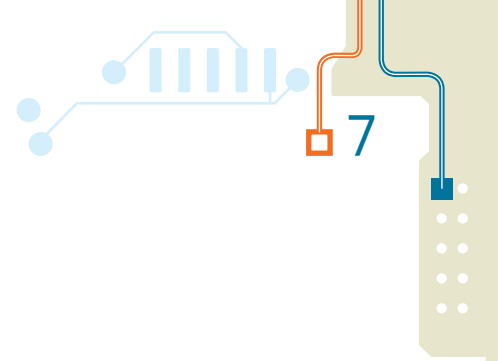
A dual redundant MIL-STD-1553B bus is composed of two systems, line A and line B, in order to secure the data transfer. If line A does not work for any reason, line B takes over. Line A and line B are produced with separate components which are routed in different ways.

Axon' is able to offer dual redundant lines which use components from different technologies and manufacturing lines. Axon' has the advantage of manufacturing its own transformer – the heart of the databus coupler. Two different transformer types can therefore be used. If there is a problem on any component of the first line, the second line with different technology components takes over.

The system can work perfectly on either line, but should a failure occur, the likelihood of the same failure occurring on the alternative line is almost non-existent, given that the manufacturing lines and components are all different.



MANUFACTURE IN CLEAN ROOM



Programmes

MIL-STD-1553 transmission networks offer high security of data and signal integrity. They are used for strategic **on-board systems** for aeronautics, space and military applications.

The use of MIL-STD-1553 databus system allows for weight and space saving, better reliability and simplified diagnostics of avionics.

AXON's databus products are used for applications including tanks and weapons systems, aircrafts, helicopters, missiles, rocket launchers, manned flights, Leo and Geo satellites, space probes, civil airplanes for Flight Control System (FCS). AXON's databus products have been approved for programmes including aircrafts such as A350, ATR, A400M, C27J, Eurofighter, Gripen, MB339, Mirage, MIG21, NIMROD, EF18, MELTEM, A350, helicopters such as Tiger, NH90, EH101, Lynx, A129, A109, Rooivalk, OH1, weapon systems such as Leclerc tank, Crotale and missiles such as Apache, Aspic, Crotale, MICA, Stormshadow.

They also have been approved for space programmes including Alphabus, Alos, Ariane 5, ATV, Biolab, Columbus, ISS, Cryosat, Eurostar3000, Mangalayaan, Sentinel, Shenzhou and VEGA.



ARIANE 5

Databus qualifications

- European standards

According to EN 3375, aeronautic qualification for cable.
According to EN 3567, aeronautic qualification for couplers.
According to EN 3716, aeronautic qualification for connectors.

- PANAIA-EFA standards

PAN 6421 : qualification of the cable
JN1042-JN1052-JN1176 : qualification of Eurofighter couplers.

- International Space Station

SSQ21655 qualification by NASA/BOEING for 4 Bus cables.
SSQ 21676 qualification by NASA/BOEING for couplers.
Couplers and cables listed in NASA's MAPTIS database.

- ARIANE V qualifications.

- PID&French Space Agency CNES approvals.

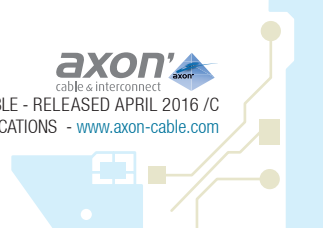
- ESCC qualification (ESCC3401/079) for ACB1 connectors.

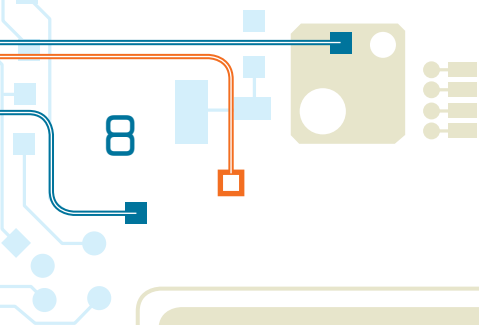
- Airbus specifications

ABS1592 : ACB1 connector.
ABS1593 : databus terminator.
ABS1595 : rack coupler.

- Customers' qualifications .

FOR THE SPACE VERSION, PLEASE ASK FOR OUR CATALOGUE "CABLES AND HARNESSES FOR SPACE APPLICATIONS".





Databus cable

SPECIFICATIONS

MIL-STD-1553B
MIL-C-17/176-00002
pr EN 3375
PANAVIA 6421
ECS 0700
SSQ 21655

OPERATING TEMPERATURE

-55°C to +200°C, -65°C to +200°C, -65°C à +150°C, +200°C or -200°C to +180°C depending on applicable standards.

CHARACTERISTIC IMPEDANCE

$77 \pm 7 \Omega$ at 1 MHz

LINEAR CAPACITANCE BETWEEN WIRES

See table on next page.

TYPE A (*)



TYPE B (*)



TYPE C (*)



TYPE D (*)



(*) see cable construction in the chart on the next page.

Special cable versions

- Supplementary jacket or protection on the jacket.
- Insertion of the Bus cables inside a complex round construction.
- In some cases possibility to differentiate Bus and Stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket.

Transfer impedance standard value

mΩ/m max

TYPE OF CABLE	CONSTRUCTION	FREQUENCY			
		0 Hz	1 MHz	10 MHz	30 MHz
TWINAX BUS 10	A	30	40	100	200
TWINAX BUS 20	A	45	45	45	100
TWINAX BUS 21	B	15	5	5	10
TWINAX BUS 22	C	15	2.5	2.5	0.1
TWINAX BUS 31 or 61	B	20	10	10	10
TWINAX BUS 40	A	30	40	100	200
TWINAX BUS 41	B	15	5	5	10
TWINAX BUS 43 or 70	A	70	75	90	140
TWINAX BUS 44 or 71	B	30	30	15	15
TWINAX BUS 80	D	30	40	100	200

NOTE : The transfer impedance values of the TWINAX BUS 20, 21, 22 and 31 cables are specified in the corresponding standards. The values of the other cable types are guaranteed by AXON'.

Cable construction

PRODUCT	VERSIONS	SPECIFICATION	CABLE TYPE	AWG	PRIMARY WIRE		SHIELD NOM. Ø (mm)	BRAID & TAPE MATERIAL	OUTER JACKET	INSULATED CABLE		CAPACITY pF/m
					CONDUCTOR MATERIALS AND CONSTRUCTION	DIELECTRIC AND FILLER MATERIALS				OUTER Ø (mm)	WEIGHT (g/m)	
TWINAX BUS 10 P502810	A	MIL-STD-1553B MIL-C-17/176-00002	A	24	SPC alloy 19 x 0.127 mm	Extruded PTFE	2.60	Single braid: SPC alloy	PFA	3.15 to 3.40	26.80 max.	< 78.75
TWINAX BUS 20 P502805	A	MIL-STD-1553B NF-L-52161-1 pr EN 3375-003	A	24	SPC alloy 19 x 0.120 mm	Extruded PTFE	2.58	Single braid: SPC	FEP	3.10 to 3.30	24.00 max.	< 78.75
TWINAX BUS 21 P512806	A	MIL-STD-1553B NF-L-52161-2 pr EN 3375-004	B	24	SPC alloy 19 x 0.120 mm	Extruded PTFE	3.00	Double braid: SPC	FEP	3.60 to 3.80	37.00 max.	< 78.75
TWINAX BUS 22 P512807	A	MIL-STD-1553B NF-L-52161-3 pr EN 3375-005	C	24	SPC alloy 19 x 0.120 mm	Extruded PTFE	3.10	Double braid: SPC - High magnetic permeability tape	FEP	3.70 to 3.90	43.30 max.	< 78.75
TWINAX BUS 31 PANAVIA BUS P507991	E	MIL-STD-1553B PAN 6421	B	24	SPC alloy 19 x 0.118 mm	Polyimide tape and PTFE filler	3.24	Double braid: SPC	FEP	3.50 to 3.80	29.00 max.	< 98.40
TWINAX BUS 40 BUS BOEING/NASA NDBC-TFE-24S2SJ-75 P512296	S	MIL-STD-1553B SSQ 21655 Rev. E	A	24	SPC alloy 19 x 0.127 mm Silver plating 2µm	Extruded PTFE	2.58	Single braid: SPC alloy Silver plating 2µm	FEP	3.175 to 3.37	22.00 nom.	< 80.00
TWINAX BUS 41 P546162	S	MIL-STD-1553B	B	24	SPC alloy 19 x 0.120 mm Silver plating 2µm	Extruded PTFE	3.00	Double braid: SPC Silver plating 2µm	FEP	3.60 to 3.80	37.00 max.	< 78.75
TWINAX BUS 43 P541610	S	MIL-STD-1553B	A	26*	SPC alloy 19 x 0.102 mm Silver plating 2µm	Extruded PTFE	2.05	Single braid: SPC Silver plating 2µm	FEP	2.40 to 2.60	14.60 nom.	< 78.75
TWINAX BUS 44 P530781	S	MIL-STD-1553B	B	26*	SPC alloy 19 x 0.102 mm Silver plating 2µm	Extruded PTFE	2.40	Double braid: SPC Silver plating 2µm	FEP	2.80 to 3.00	20.00 nom.	< 80.00
TWINAX BUS 45 BUS BOEING/NASA NDBC-TFE-22S2SJ-75 P812302	S	MIL-STD-1553B SSQ 21655 Rev. E	A	22*	SPC alloy 19 x 0.16 mm Silver plating 2µm	CELLOFLON® expanded PTFE	3.09	Single braid: SPC alloy Silver plating 2µm	FEP	3.76 to 4.06	27.70 nom.	< 80.00
TWINAX BUS 60 P819845	A	MIL-STD-1553B	A	24	SPC alloy 19 x 0.127 mm	CELLOFLON® expanded PTFE	2.41	Single braid: SPC alloy	FEP	2.90 to 3.10	18.00 nom.	< 70.00
TWINAX BUS 61 P815721	A	MIL-STD-1553B	B	24	SPC alloy 19 x 0.127 mm	CELLOFLON® expanded PTFE	2.76	Double braid: SPC alloy	FEP	3.10 to 3.30	24.00 nom.	< 70.00
TWINAX BUS 70 P504621	A	MIL-STD-1553B	A	26*	SPC 19 x 0.102 mm	Extruded PTFE	2.05	Single braid: SPC	FEP	2.40 to 2.60	14.60 nom.	< 78.75
TWINAX BUS 71 P517417	A	MIL-STD-1553B ECS 0700	B	26*	SPC alloy 19 x 0.102 mm	Extruded PTFE	2.40	Double braid: SPC	FEP	2.80 to 3.00	21.00 max.	< 80.00
TWINAX BUS 72 P511981	A	MIL-STD-1553B	C	26	SPC 19 x 0.102 mm	Extruded PTFE	2.45	Double braid: SPC-High magnetic permeability tape	FEP	2.90 to 3.10	25.00 nom.	< 80.00
TWINAX BUS 80 ESCC 3902.002.20 P538524	S	ESCC 3902.002.20	D	24	SPC alloy 19 x 0.126 mm Silver plating 2µm	Dielectric: Wrapped PTFE Filler: Extruded PTFE	2.75	Single braid: SPC alloy Silver plating 2,5µm	PFA	3.90 max.	24.00 max.	< 68.00

OTHER CABLES ON REQUEST.

SPC: Silver Plated Copper - * In case of AWG 26 or AWG 22 cable, please ask AXON' for compatibility with crimp connectors.

A = AERONAUTICS - E = EUROFIGHTER - S = SPACE

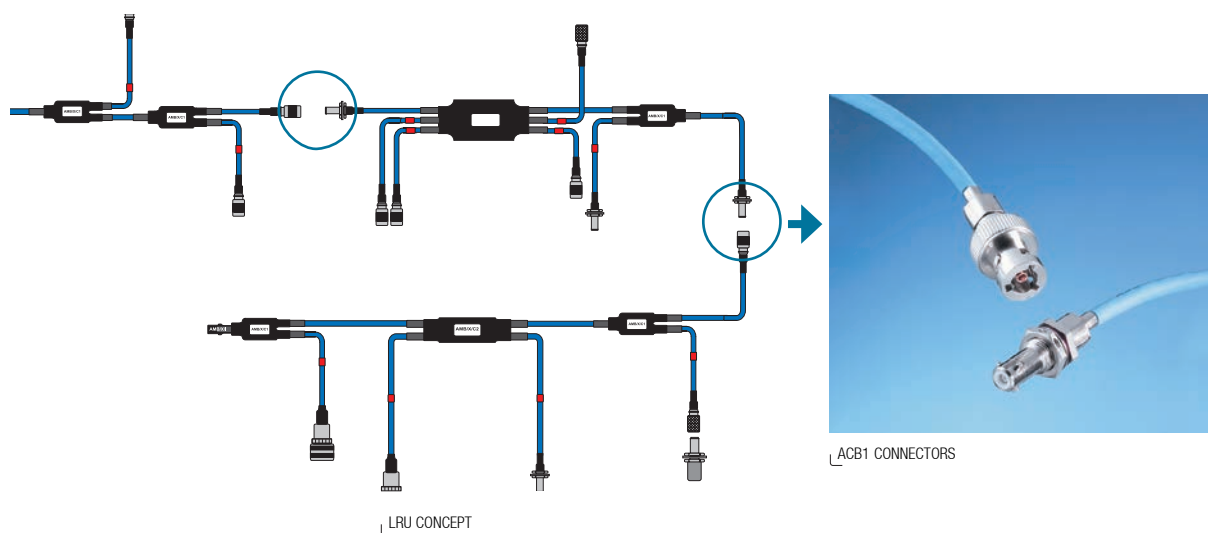
To see how are constructed each cable type, please see page 8.

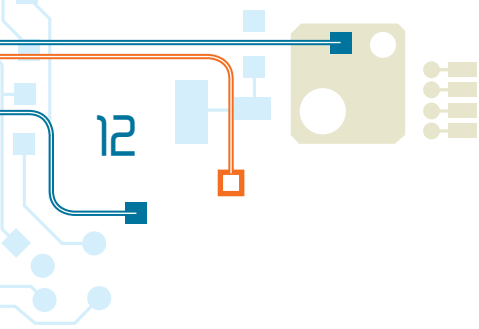
IN-LINE couplers

AXON' in-line couplers for MIL-STD-1553 databus networks are the best solution for weight saving.

Advantages

- › Excellent weight /dimensions and price compromise.
 - › Weight saving solution.
 - › In-line couplers are a well known and reliable technology.
 - › Harnesses made with inline couplers can be installed with other electrical harnesses.
 - › In-line couplers are dedicated to networks with a frozen design.
 - › Supplied MIL-STD-1553B & SAE AS 4115 fully tested and guaranteed.
- However the LRU concept (Line Replaceable Unit) gives more flexibility to in-line couplers.
- In order to make the routing easier, the network can be cut in databus sub-assemblies called Line Replaceable Units by couples of triaxial databus connectors (ACB1 connectors or others).
- This makes the maintenance and handling easier.





Different versions

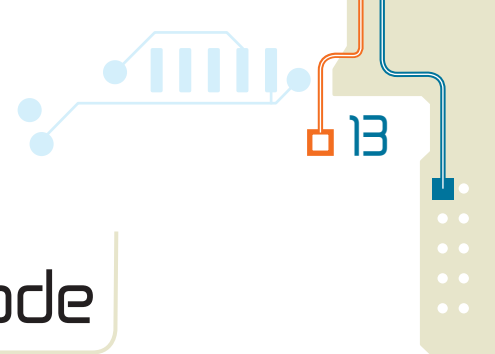
- › Aeronautic couplers designed according to EN3567 (from 1 to 8 stubs).
- › EFA couplers qualified according to SPE-J-403-A-0070 (from 1 to 4 stubs).
- › Space couplers (from 1 to 4 stubs) – please refer to our space brochure.
- › In-line couplers with terminators (TR and TL, see page 17) are available from 1 to 8 stubs.



IN-LINE COUPLERS



HIGH PERFORMANCE AND SMALL SIZED TRANSFORMERS



In-line coupler identification code

example **AMB/ A - C2 - 20 - 03 ^ HL - TL**

AXON' MICROBUS

AERONAUTICS VERSION **A**
EUROFIGHTER VERSION **E**
SPACE VERSION **S**

C1 : 1 WAY IN-LINE COUPLER with bus lines on opposite sides of the coupler
C11 : 1 WAY IN-LINE COUPLER with bus lines on same side of the coupler
C2 : 2 WAY IN-LINE COUPLER with bus lines on opposite sides of the coupler
C21 : 2 WAY IN-LINE COUPLER with bus lines on same side of the coupler
C3 : 3 WAY IN-LINE COUPLER with bus lines on opposite sides of the coupler
C31 : 3 WAY IN-LINE COUPLER with bus lines on same side of the coupler
C4 : 4 WAY IN-LINE COUPLER with bus lines on opposite sides of the coupler
C41 : 4 WAY IN-LINE COUPLER with bus lines on same side of the coupler
C5 : 5 WAY IN-LINE COUPLER with bus lines on opposite sides of the coupler
C6 : 6 WAY IN-LINE COUPLER with bus lines on opposite sides of the coupler
C7 : 7 WAY IN-LINE COUPLER with bus lines on opposite sides of the coupler
C8 : 8 WAY IN-LINE COUPLER with bus lines on opposite sides of the coupler

CABLE REFERENCES (See cable construction page 7)

10 : TWINAX BUS 10 AWG 24 SB [single braid] according to MIL-C17/176-00002 **A**
20 = TWINAX BUS 20 AWG 24 SB [single braid] accord. to pr EN 3375-003 **A**
21 = TWINAX BUS 21 AWG 24 DB [double braid] accord. to pr EN 3375-004 **A**
22 = TWINAX BUS 22 AWG 24 HI [high immunity] accord. to pr EN 3375-005 **A**
31 = TWINAX BUS 31 AWG 24 DB [double braid] according to PAN6421 **E**
40 = TWINAX BUS 40 AWG 24 SB [single braid] according to SSQ 21655 **S**
41 = TWINAX BUS 41 AWG 24 DB [double braid] **S**
43 = TWINAX BUS 43 AWG 26 SB [single braid] **S**
44 = TWINAX BUS 44 AWG 26 DB [double braid] **S**
45 = TWINAX BUS 45 AWG 22 SB [single braid] according to SSQ 21655 **S**
60 = TWINAX BUS 60 AWG 24 SB [single braid] **E A**
61 = TWINAX BUS 61 AWG 24 DB [double braid] **E A**
70 = TWINAX BUS 70 AWG 26 SB [single braid] **A**
71 = TWINAX BUS 71 AWG 26 DB [double braid] according to ECS 0700 **A**
72 = TWINAX BUS 72 AWG 26 HI [high immunity] **A**
80 = TWINAX BUS 80 AWG 24 SB [single braid] acc. to ESCC 3902 002 20 [black] **S**

CABLE LENGTH (in meters)

COLOUR OF THE BUS LINE

H = blue - **L** = white

COLOUR OF THE STUB LINE

H = blue - **L** = white - **S** = blue with black stripes if the bus is blue
or white with blue stripes if the bus is white
B = only for & mandatory for TWINAX BUS 80 AWG 24 SB

INTEGRATED TERMINATOR

TL = Terminator on left side of coupler **TT** = Terminator on both sides
TR = Terminator on right side of coupler = No terminator

ATTENTION : please see the technical data sheets to check the compatibility between the coupler version, cable type and cable colour. Check also the existence of the coupler and the colour of the cable.

axon'
cable & interconnect

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MIL-STD-1553B-DATABUS PRODUCTS FOR AERONAUTICS APPLICATIONS - www.axon-cable.com

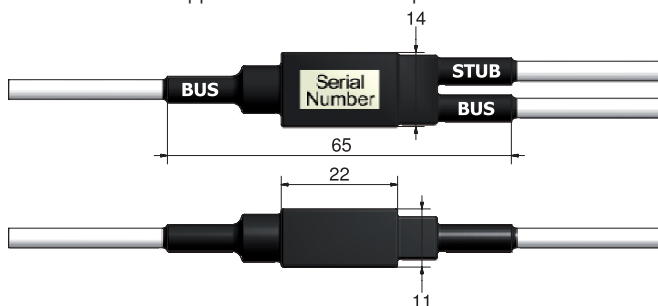
1 way in-line coupler

SPECIFICATIONS

EN 3567-003
MIL-STD-1553B
STANAG 3838
SAE AS 4115

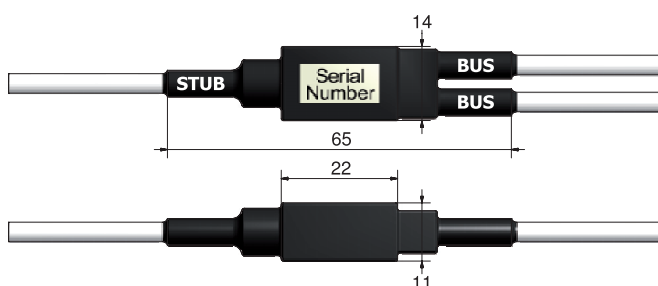
AMB / A - C1 - XX

Version with bus lines on opposite sides of the coupler.



AMB / A - C11 - XX

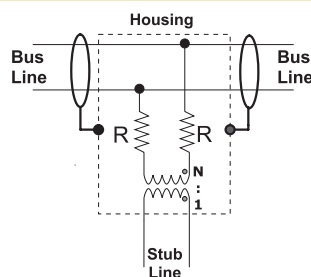
Version with bus lines on same side of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

A

CX

XX

AXON' MICROBUS

(see complete reference of the coupler on Bus Standard sheet, page 14).

A : AERONAUTICS VERSION

(for space applications, please contact us)

1 : 1 WAY IN-LINE COUPLER

Version with bus lines on opposite sides of the coupler.

11 : 1 WAY IN-LINE COUPLER

Version with bus lines on same side of the coupler.

CABLE REFERENCES (see cable specifications)

10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)

according to MIL-C-17 /176-00002

20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)

according to PR EN 3375-003

21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)

according to PR EN 3375-004

22 : TWINAX BUS AWG 24 DOUBLE BRAID with

high immunity tape (DB/HI) according to PR EN 3375-005

70 : TWINAX BUS AWG 26 SINGLE BRAID (SB)

71 : TWINAX BUS AWG 26 DOUBLE BRAID (DB)

according to ECS 0700

72 : TWINAX BUS AWG 26 DOUBLE BRAID

with high immunity tape (DB/HI)

Other cables on request.

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	1.41 \pm 3 %	1.41 \pm 3 %
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 3000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 3000 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_0 \pm 2$ %	57.6 $\Omega \pm 1$ %
Insulation resistance between : - bus / stub - inner wires / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Transfer impedance	-	plot available
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	500 V rms 500 V rms	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Weight	< 10 g	< 9 g
Axial extraction force	>100 N	>100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Crush resistance	500 N	500 N
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles

Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3$ %	$\sqrt{2} \pm 3$ %	$\sqrt{2} \pm 3$ %
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (**)
Primary parallel inductance	-	$L_p = 22$ mH	$L_p \geq 20$ mH
Primary parallel capacitance	-	$C_p = 10$ pF	$C_p \leq 11.4$ pF
Inter-winding capacitance	-	$C_i = 45$ pF	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20$ %	$D = 4.5$ % (**)	$D < 20$ %
Overshoot and ringing (*)	$O < \pm 1$ V	$O = 0.3$ V (**)	$O < \pm 1$ V

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

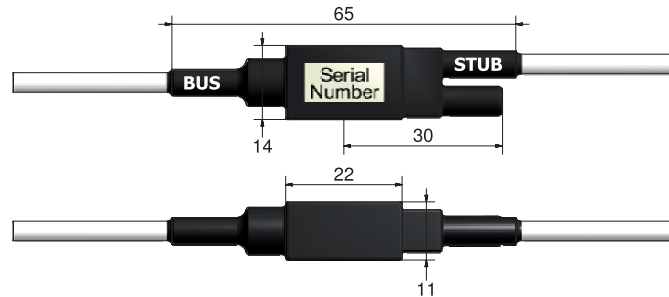
1 way in-line coupler with terminator

SPECIFICATIONS

According to EN 3567
MIL-STD-1553B
STANAG 3838
SAE AS 4115

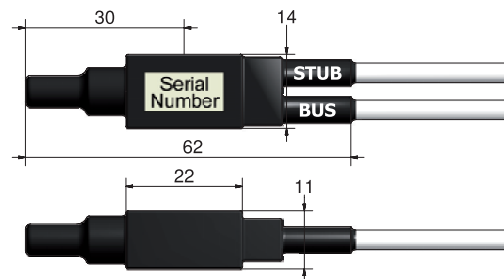
AMB / A - C1 - XX - T RIGHT 'TR'

Version with bus and stub lines on opposite sides of the coupler.



AMB / A - C1 - XX - T LEFT 'TL'

Version with bus and stub lines on same side of the coupler.

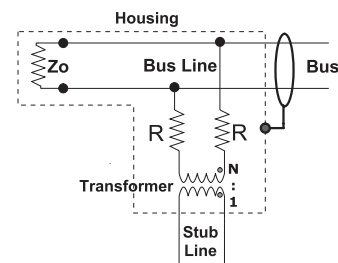


DIMENSIONS in mm

IN-LINE COUPLERS WITH TERMINATORS ARE AVAILABLE FROM 1 TO 8 STUBS.

Electrical scheme

$N = 1.41 \pm 3\%$
 R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$
 Z_0 : bus terminator
 $Z_0 : 77 \Omega \pm 1\%$



Identification code

AMB /

**AXON'
MICROBUS**
(see complete
reference of the
coupler on Bus
Standard sheet,
page 14).

A

**A : AERONAUTICS
VERSION**
(for space
applications,
please contact us)

C1

**1 : 1 WAY IN-LINE
COUPLER**

XX

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID with
high immunity tape (DB/HI) according to PR EN 3375-005
70 : TWINAX BUS AWG 26 SINGLE BRAID (SB)
71 : TWINAX BUS AWG 26 DOUBLE BRAID (DB)
according to ECS 0700
72 : TWINAX BUS AWG 26 DOUBLE BRAID
with high immunity tape (DB/HI)
Other cables on request.

TX

TR : T RIGHT
Bus and stub on
opposite sides.
TL : T LEFT
Bus and stub on
same side of the
coupler

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	$1.41 \pm 3 \%$	$1.41 \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Terminator impedance	$77 \pm 2 \%$	$77 \pm 1 \%$
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner wires / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 V _{DC} > 1 000 M Ω at 500 V _{DC}
Transfer impedance	-	plot available
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	500 V rms 500 V rms	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Weight	-	< 11 g
Axial extraction force	>100 N	>100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine, 3 ns	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Crush resistance	500 N	500 N
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles

Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (**)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$0 < \pm 1 V$	$0 = 0.3 V$ (**)	$0 < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

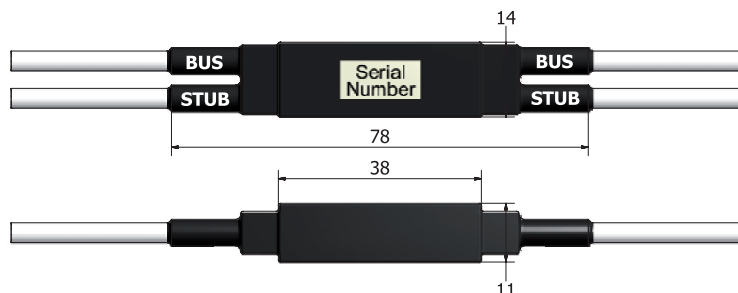
2 way in-line coupler

SPECIFICATIONS

EN 3567-004
MIL-STD-1553B
STANAG 3838
SAE AS 4115

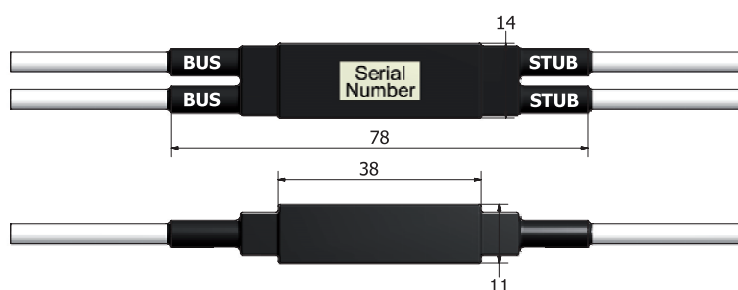
AMB / A - C2 - XX

Version with bus lines on opposite sides of the coupler.



AMB / A - C21 - XX

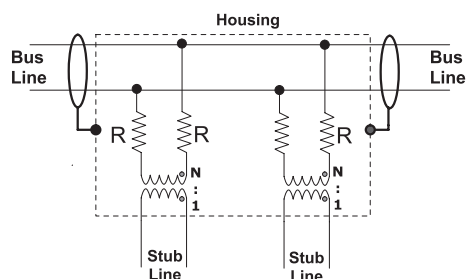
Version with bus lines on same side of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

A

CX

XX

AXON' MICROBUS
(see complete reference of the coupler on Bus Standard sheet, page 14).

A : AERONAUTICS VERSION
(for space applications, please contact us)

2 : 2 WAY IN-LINE COUPLER
Version with bus lines on opposite sides of the coupler.
21 : 2 WAY IN-LINE COUPLER
Version with bus lines on same side of the coupler.

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID with high immunity tape (DB/HI) according to PR EN 3375-005
70 : TWINAX BUS AWG 26 SINGLE BRAID (SB)
71 : TWINAX BUS AWG 26 DOUBLE BRAID (DB)
according to ECS 0700
72 : TWINAX BUS AWG 26 DOUBLE BRAID with high immunity tape (DB/HI)
Other cables on request.

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	$1.41 \pm 3 \%$	$1.41 \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 1500 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 1500 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner wires / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 V _{dc} > 1 000 M Ω at 500 V _{dc}
Transfer impedance	-	plot available
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	500 V rms 500 V rms	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Weight	< 15 g	< 12 g
Axial extraction force	>100 N	>100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Crush resistance	-	500 N
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles

Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{dc} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$0 < \pm 1 V$	$0 = 0.3 V$ (**)	$0 < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

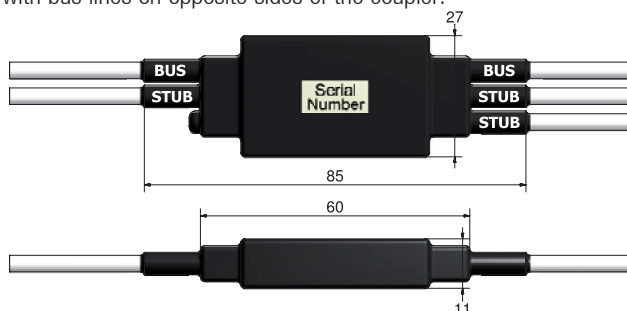
3 way in-line coupler

SPECIFICATIONS

According to EN 3567
MIL-STD-1553B
STANAG 3838
SAE AS 4115

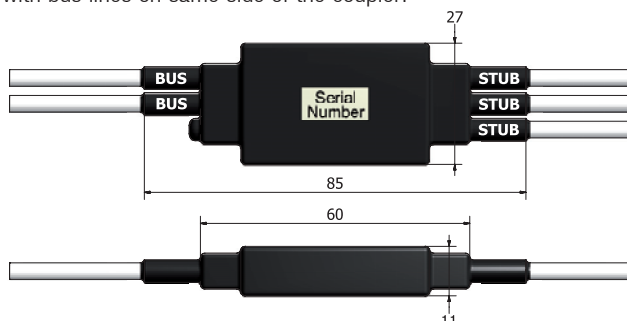
AMB / A - C3 - XX

Version with bus lines on opposite sides of the coupler.



AMB / A - C31 - XX

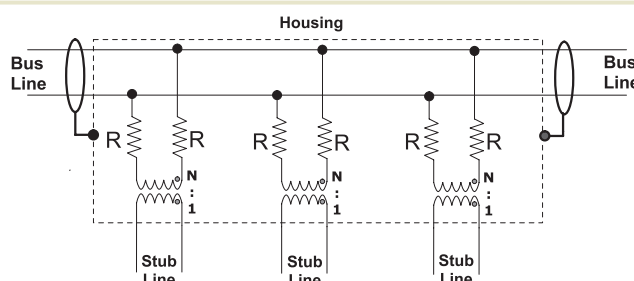
Version with bus lines on same side of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

A

CX

XX

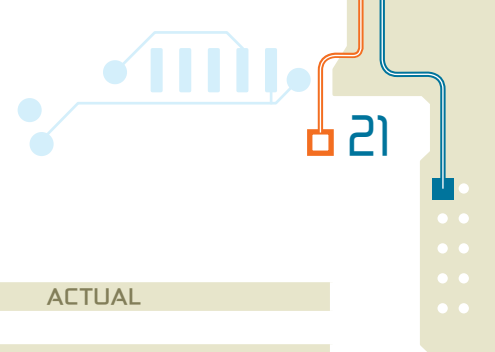
AXON' MICROBUS
(see complete reference of the coupler on Bus Standard sheet, page 14).

A : AERONAUTICS VERSION
(for space applications, please contact us)

3 : 3 WAY IN-LINE COUPLER
Version with bus lines on opposite sides of the coupler.
31 : 3 WAY IN-LINE COUPLER
Version with bus lines on same side of the coupler.

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB) according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB) according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID with high immunity tape (DB/HI) according to PR EN 3375-005
31 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) according to PAN 6421
60 : TWINAX BUS AWG 24 EXPANDED PTFE SINGLE BRAID (SB)
61 : TWINAX BUS AWG 24 EXPANDED PTFE DOUBLE BRAID (DB)
70 : TWINAX BUS AWG 26 SINGLE BRAID (SB)
71 : TWINAX BUS AWG 26 DOUBLE BRAID (DB) according to ECS 0700
72 : TWINAX BUS AWG 26 DOUBLE BRAID with high immunity tape (DB/HI)
Other cables on request.

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	$1.41 \pm 3 \%$	$1.41 \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 1000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 1000 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner wires / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 V _{dc} > 1 000 M Ω at 500 V _{dc}
Transfer impedance	-	plot available
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	500 V rms 500 V rms	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Weight	-	< 25 g
Axial extraction force	>100 N	>100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Crush resistance	-	500 N
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles

Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{dc} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

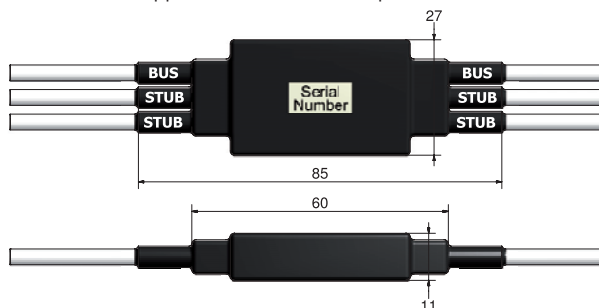
4 way in-line coupler

SPECIFICATIONS

According to EN 3567
MIL-STD-1553B
STANAG 3838
SAE AS 4115

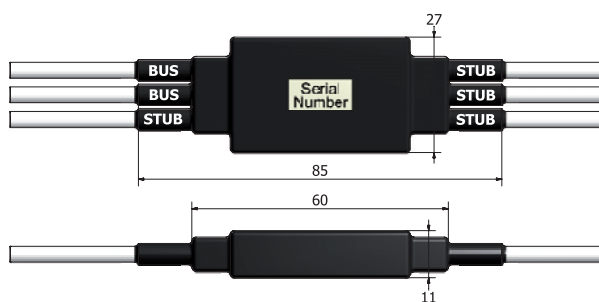
AMB / A - C4 - XX

Version with bus lines on opposite sides of the coupler.



AMB / A - C41 - XX

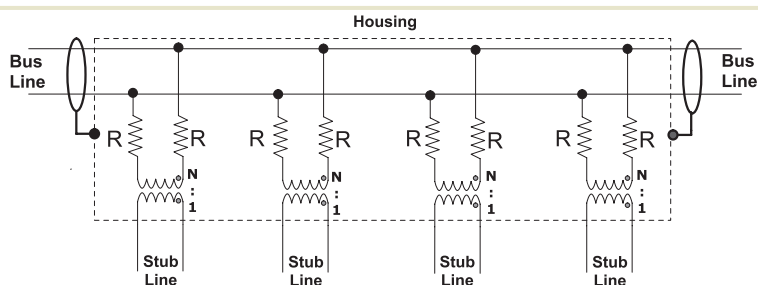
Version with bus lines on same side of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

A

CX

XX

AXON' MICROBUS

(see complete
reference of the
coupler on Bus
Standard sheet,
page 14).

A : AERONAUTICS VERSION

(for space
applications,
please contact us)

4 : 4 WAY IN-LINE COUPLER

Version with bus lines on
opposite sides of the coupler.

41 : 4 WAY IN-LINE COUPLER

Version with bus lines on
same side of the coupler.

CABLE REFERENCES (see cable specifications)

10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)

according to MIL-C-17 /176-00002

20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)

according to PR EN 3375-003

21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)

according to PR EN 3375-004

22 : TWINAX BUS AWG 24 DOUBLE BRAID with
high immunity tape (DB/HI) according to PR EN 3375-005

31 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)

according to PAN 6421 - JN 1176 (see page 37)

60 : TWINAX BUS AWG 24 EXPANDED PTFE SINGLE BRAID (SB)

61 : TWINAX BUS AWG 24 EXPANDED PTFE DOUBLE BRAID (DB)

70 : TWINAX BUS AWG 26 SINGLE BRAID (SB)

71 : TWINAX BUS AWG 26 DOUBLE BRAID (DB) according to ECS 0700

72 : TWINAX BUS AWG 26 DOUBLE BRAID

with high immunity tape (DB/HI)

Other cables on request.

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING

(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	$1.41 \pm 3 \%$	$1.41 \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 750 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 750 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner wires / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 V _{DC} > 1 000 M Ω at 500 V _{DC}
Transfer impedance	-	plot available
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	500 V rms 500 V rms	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Weight	-	< 25 g
Axial extraction force	>100 N	>100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Crush resistance	-	500 N
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles

Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$0 < \pm 1 V$	$0 = 0.3 V$ (**)	$0 < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

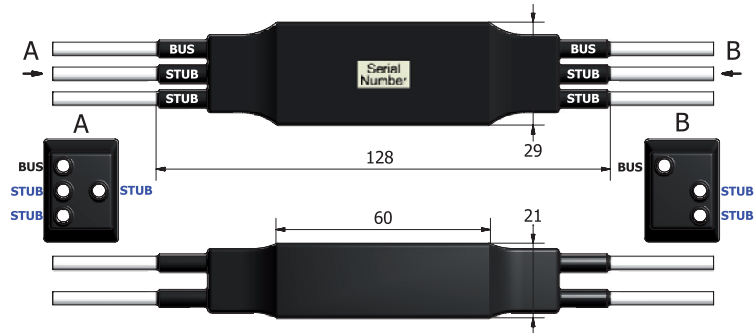
5 way in-line coupler

SPECIFICATIONS

MIL-STD-1553B
STANAG 3838
SAE AS 4115

AMB / A - C5 - XX

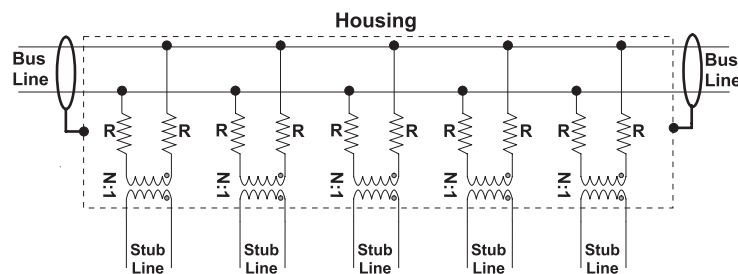
Version with bus lines on opposite sides of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

AXON' MICROBUS
(see complete reference of the coupler on Bus Standard sheet, page 14).

A

A : AERONAUTICS VERSION
(for space applications, please contact us)

C5

5 : 5 WAY IN-LINE COUPLER
Version with bus lines on opposite sides of the coupler.

XX

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) with high immunity tape (DB/II) according to PR EN 3375-005

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 600 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 600 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_0 \pm 2 \%$	57.6 $\Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner wires / shield	- -	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	- -	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	High resistance to board fluids (sealed case)
Weight : < 100 g	High resistance to salt spray (sealed case)
Axial extraction force : 100 N	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	Fully waterproof
Excellent resistance to thermal stress	
Low pressure resistance : 11 mbar	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 \text{ M}\Omega$	-	$R_i > 1 000 \text{ M}\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 \text{ k}\Omega$ on full temperature operating range	$ Z > 10 \text{ k}\Omega$ at 25°C $ Z > 4.8 \text{ k}\Omega$ at -65°C $ Z > 4 \text{ k}\Omega$ at -85°C	$ Z \geq 9.4 \text{ k}\Omega$ at 25°C (**)
Primary parallel inductance	-	$L_p = 22 \text{ mH}$	$L_p \geq 20 \text{ mH}$
Primary parallel capacitance	-	$C_p = 10 \text{ pF}$	$C_p \leq 11.4 \text{ pF}$
Inter-winding capacitance	-	$C_i = 45 \text{ pF}$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu\text{H}$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 \text{ V}$	$O = 0.3 \text{ V}$ (**)	$O < \pm 1 \text{ V}$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

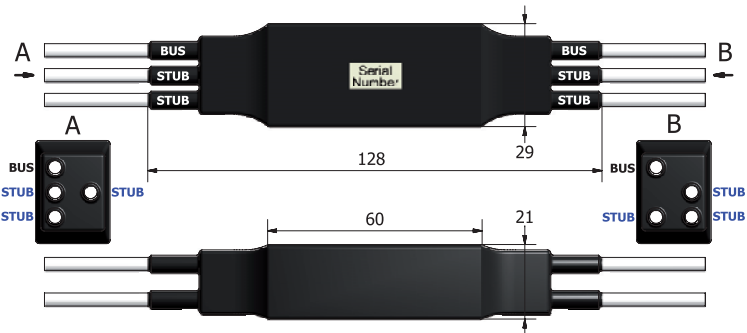
6 way in-line coupler

SPECIFICATIONS

MIL-STD-1553B
STANAG 3838
SAE AS 4115

AMB / A - C6 - XX

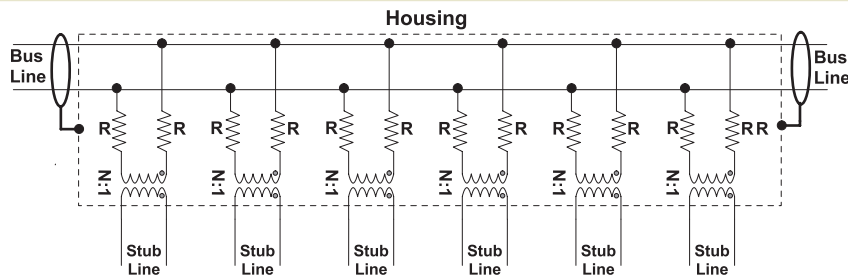
Version with bus lines on opposite sides of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

AXON' MICROBUS
(see complete reference of the coupler on Bus Standard sheet, page 14).

A

A : AERONAUTICS VERSION
(for space applications, please contact us)

C6

6 : 6 WAY IN-LINE COUPLER
Version with bus lines on opposite sides of the coupler.

XX

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) with high immunity tape (DB/HI) according to PR EN 3375-005

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 500 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 500 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_0 \pm 2 \%$	57.6 $\Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	-	> 1 000 M Ω at 250 Vdc
- inner wires / shield	-	> 1 000 M Ω at 500 Vdc
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	-	500 V rms
- between outer insulation and shield	-	500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	High resistance to board fluids (sealed case)
Weight : < 100 g	High resistance to salt spray (sealed case)
Axial extraction force : 100 N	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	Fully waterproof
Excellent resistance to thermal stress	
Low pressure resistance : 11 mbar	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (**)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

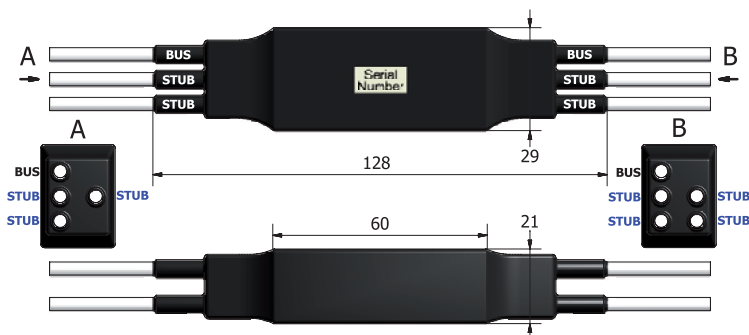
7 way in-line coupler

SPECIFICATIONS

MIL-STD-1553B
STANAG 3838
SAE AS 4115

AMB / A - C7 - XX

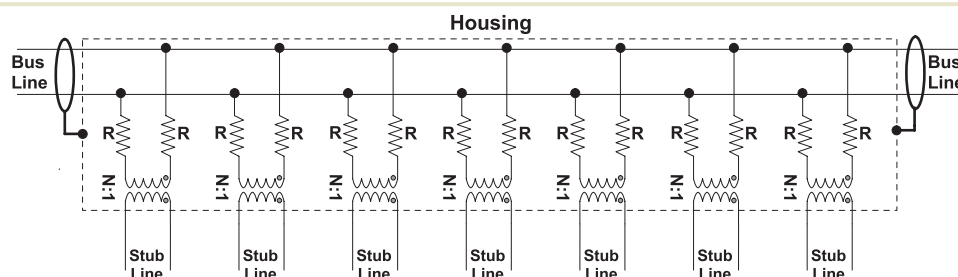
Version with bus lines on opposite sides of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

AXON' MICROBUS
(see complete reference of the coupler on Bus Standard sheet, page 14).

A

A : AERONAUTICS VERSION
(for space applications, please contact us)

C7

7 : 7 WAY IN-LINE COUPLER
Version with bus lines on opposite sides of the coupler.

XX

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) with
high immunity tape (DB/Hi) according to PR EN 3375-005

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 429 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 429 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_0 \pm 2 \%$	57.6 $\Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	-	> 1 000 M Ω at 250 Vdc
- inner wires / shield	-	> 1 000 M Ω at 500 Vdc
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	-	500 V rms
- between outer insulation and shield	-	500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	High resistance to board fluids (sealed case)
Weight : < 100 g	High resistance to salt spray (sealed case)
Axial extraction force : 100 N	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	Fully waterproof
Excellent resistance to thermal stress	
Low pressure resistance : 11 mbar	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (**)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

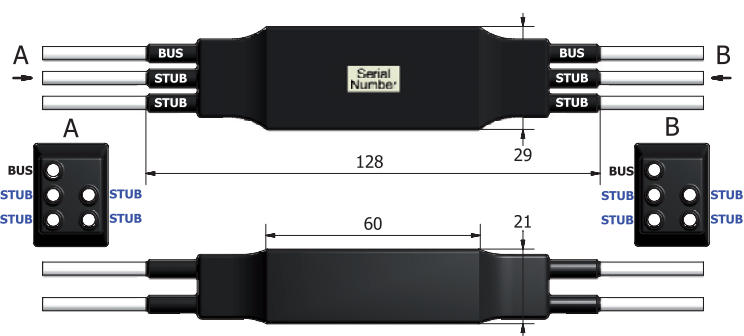
8 way in-line coupler

SPECIFICATIONS

MIL-STD-1553B
STANAG 3838
SAE AS 4115

AMB / A - C8 - XX

Version with bus lines on opposite sides of the coupler.



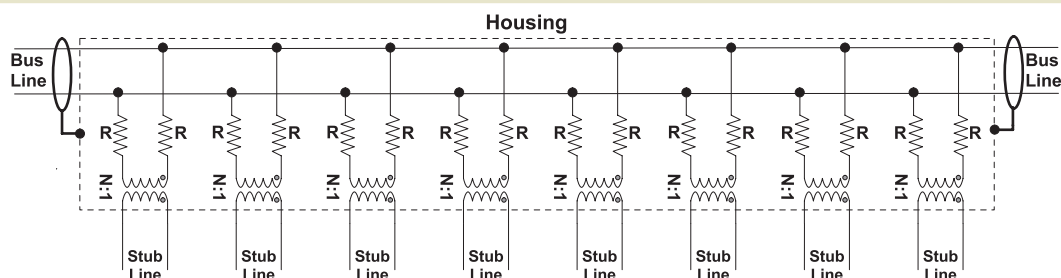
DIMENSIONS in mm

Electrical scheme

$$N = 1.41 \pm 3\%$$

R = fault protection resistor

$$R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$$



Identification code

AMB /

AXON' MICROBUS
(see complete reference of the coupler on Bus Standard sheet, page 14).

A

A : AERONAUTICS VERSION
(for space applications, please contact us)

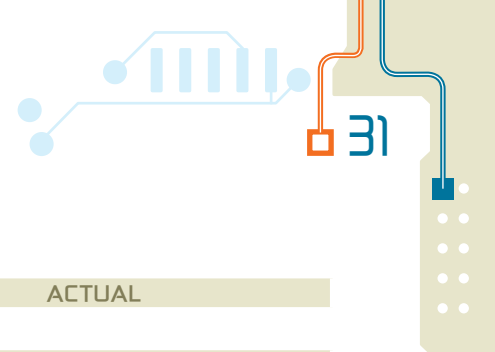
C8

8 : 8 WAY IN-LINE COUPLER
Version with bus lines on opposite sides of the coupler.

XX

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) with high immunity tape (DB/II) according to PR EN 3375-005

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 375 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 375 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_0 \pm 2 \%$	57.6 $\Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner wires / shield	- -	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	- -	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	High resistance to board fluids (sealed case)
Weight : < 100 g	High resistance to salt spray (sealed case)
Axial extraction force : 100 N	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	Fully waterproof
Excellent resistance to thermal stress	
Low pressure resistance : 11 mbar	

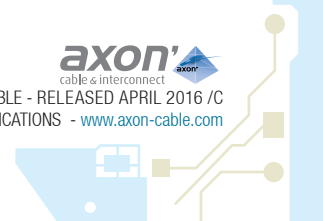
Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (**)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C



1 way in-line coupler

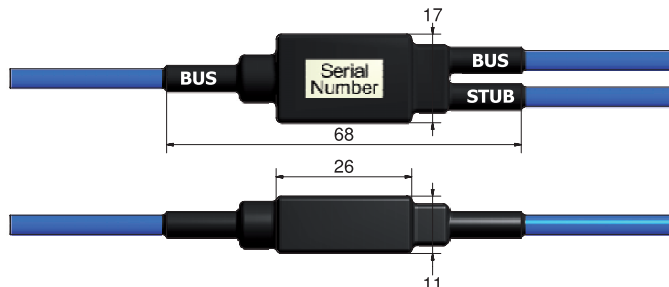
SPECIFICATIONS

MIL-STD-1553B
SPE-J-403-A-0070
PAN 6421
JN 1042*
SAE AS 4115

* JN 1042
approval only concerns
AMB/E - C1 with cable 31.
DDP reference :
DDP-J-403-0219.

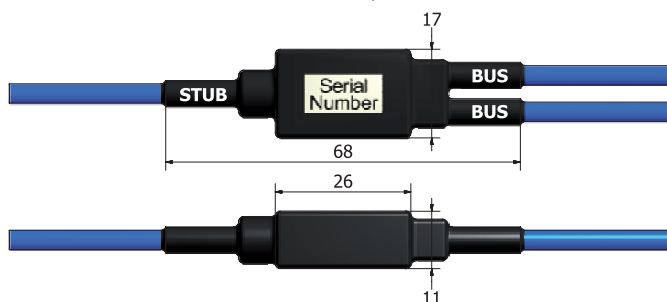
AMB / E - C1 - XX

Version with bus lines on opposite sides of the coupler.



AMB / E - C11 - XX

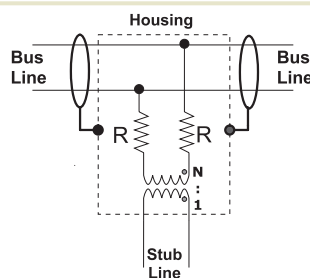
Version with bus lines on same side of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

E

CX

XX

**AXON'
MICROBUS**

(see complete
reference of the
coupler on Bus
Standard sheet,
page 14).

**E : EUROFIGHTER
VERSION**

1 : 1 WAY IN-LINE COUPLER

Version with bus lines on
opposite sides of the coupler.

11 : 1 WAY IN-LINE COUPLER

Version with bus lines on
same side of the coupler.
(not a JN 1042 ITEM)

CABLE REFERENCES (see cable specifications)

31 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PAN 6421

60 : TWINAX BUS AWG 24 EXPANDED PTFE SINGLE BRAID (SB)
(not a JN 1042 ITEM)

61 : TWINAX BUS AWG 24 EXPANDED PTFE DOUBLE BRAID (DB)
(not a JN 1042 ITEM)

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	1.41 \pm 3 %	1.41 \pm 3 %
CMR	< -45 dB at 1 MHz	< -45 dB at 1 MHz
Input impedance	> 3000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-55°C to 150°C)	> 3000 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_o \pm 2$ %	57.6 $\Omega \pm 1$ %
Insulation resistance between : - bus / stub - inner wires / shield	100 M Ω at 250 Vdc 100 M Ω at 250 Vdc	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Transfer impedance	plot available	plot available
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	100 V rms 100 V rms	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-55°C to +150°C	-55°C to +150°C
Weight	< 10 g	< 10 g
Axial extraction force	\geq 100 N	\geq 100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	32 g rms, 1 hour in all directions 16 g rms, 120°C, 30 min. in all directions 49 g rms in all directions 15 g in all directions	32 g rms, 1 hour in all directions 16 g rms, 120°C, 30 min. in all directions 49 g rms in all directions 15 G's, half sine, 11 ms in all directions
Acceleration	20 g in all directions	20 G's in all directions
Low pressure resistance	9.1 mbars	9.1 mbars
Life test	1000 hours at +120°C	1000 hours at +120°C Bus operating with MIL-STD-1553B signal
Thermal test	-55°C to +150°C, 10 cycles	-55°C to +150°C, 10 cycles
MTBF calculated according to MIL-HDBK-217F	-	2.40 x 10 ⁶ hours at 25°C and A_{UF} environment
Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).		

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3$ %	$\sqrt{2} \pm 3$ %	$\sqrt{2} \pm 3$ %
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22$ mH	$L_p \geq 20$ mH
Primary parallel capacitance	-	$C_p = 10$ pF	$C_p \leq 11.4$ pF
Inter-winding capacitance	-	$C_i = 45$ pF	-
Primary leakage inductance	-	-	$L_f \leq 6$ μ H
Droop (*)	$D < 20$ %	$D = 4.5$ % (**)	$D < 20$ %
Overshoot and ringing (*)	$0 < \pm 1$ V	$0 = 0.3$ V (**)	$0 < \pm 1$ V

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

2 way in-line coupler

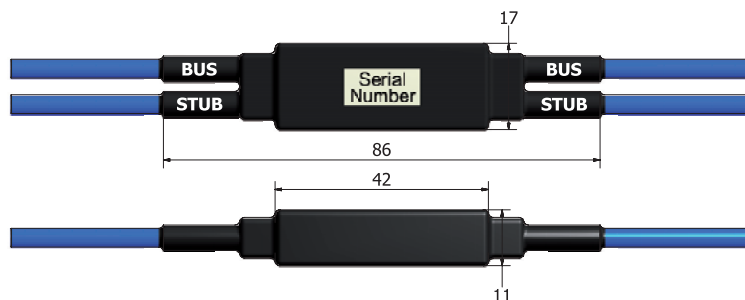
SPECIFICATIONS

MIL-STD-1553B
SPE-J-403-A-0070
PAN 6421
JN 1052*
SAE AS 4115

* JN 1052
approval only concerns
AMB/E - C2 with cable 31.
DDP reference :
DDP-J-403-0220.

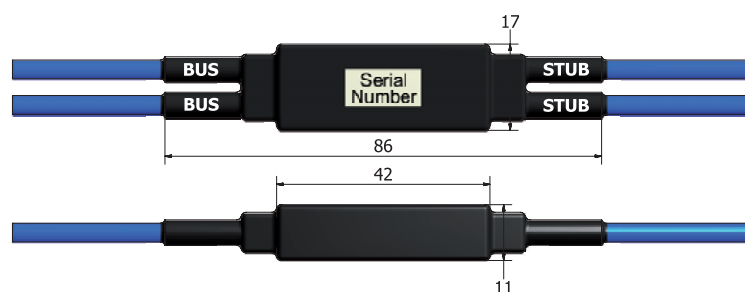
AMB / E - C2 - XX

Version with bus lines on opposite sides of the coupler.



AMB / E - C21 - XX

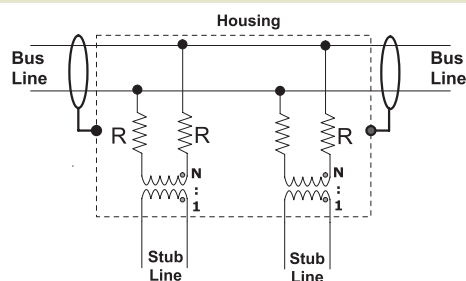
Version with bus lines on same side of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

**AXON'
MICROBUS**
(see complete
reference of the
coupler on Bus
Standard sheet,
page 14).

E

**E : EUROFIGHTER
VERSION**

CX

2 : 2 WAY IN-LINE COUPLER

Version with bus lines on
opposite sides of the coupler.

21 : 2 WAY IN-LINE

Version with bus lines on
same side of the coupler.
(not a JN 1052 ITEM)

XX

CABLE REFERENCES (see cable specifications)

31 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PAN 6421

60 : TWINAX BUS AWG 24 EXPANDED PTFE SINGLE BRAID (SB)
(not a JN 1052 ITEM)

61 : TWINAX BUS AWG 24 EXPANDED PTFE DOUBLE BRAID (DB)
(not a JN 1052 ITEM)

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	1.41 \pm 3 %	1.41 \pm 3 %
CMR	< -45 dB at 1 MHz	< -45 dB at 1 MHz
Input impedance	> 1500 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-55°C to 150°C)	> 1500 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 Z _o \pm 2 %	57.6 Ω \pm 1 %
Insulation resistance between : - bus / stub - inner wires / shield	100 M Ω at 250 V _{dc} 100 M Ω at 250 V _{dc}	> 1 000 M Ω at 250 V _{dc} > 1 000 M Ω at 500 V _{dc}
Transfer impedance	plot available	plot available
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	100 V rms 100 V rms	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-55°C to +150°C	-55°C to +150°C
Weight	< 17 g	< 17 g
Axial extraction force	>100 N	>100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	32 g rms, 1 hour in all directions 16 g rms, 120°C, 30 min. in all directions 49 g rms in all directions 15 g in all directions	32 g rms, 1 hour in all directions 16 g rms, 120°C, 30 min. in all directions 49 g rms in all directions 15 G's, half sine, 11 ms in all directions
Acceleration	20 g in all directions	20 G's in all directions
Low pressure resistance	9.1 mbars	9.1 mbars
Life test	1000 hours at +120°C	1000 hours at +120°C Bus operating with MIL-STD-1553B signal
Thermal test	-55°C to +150°C, 10 cycles	-55°C to +150°C, 10 cycles
MTBF calculated according to MIL-HDBK-217F	-	1.28 x 10 ⁶ hours at 25°C and A _{UF} environment
Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).		

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3$ %	$\sqrt{2} \pm 3$ %	$\sqrt{2} \pm 3$ %
Secondary DC resistance	R _s < 5 Ω	R _s = 2 Ω	R _s < 2.5 Ω
Insulation resistance (winding to winding)	R _i > 100 M Ω	-	R _i > 1 000 M Ω with a 250 V _{dc} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	Z > 3 k Ω on full temperature operating range	Z > 10 k Ω at 25°C Z > 4.8 k Ω at -65°C Z > 4 k Ω at -85°C	Z \geq 9.4 k Ω at 25°C (**)
Primary parallel inductance	-	L _p = 22 mH	L _p \geq 20 mH
Primary parallel capacitance	-	C _p = 10 pF	C _p \leq 11.4 pF
Inter-winding capacitance	-	C _i = 45 pF	-
Primary leakage inductance	-	-	L _f \leq 6 μ H
Droop (*)	D < 20 %	D = 4.5 % (**)	D < 20 %
Overshoot and ringing (*)	O < \pm 1 V	O = 0.3 V (**)	O < \pm 1 V

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a 360 \pm 5 % Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

4 way in-line coupler

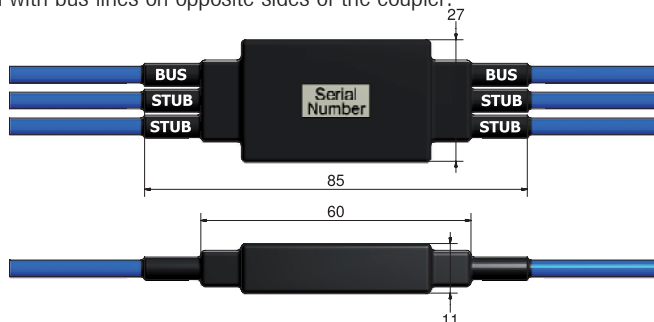
SPECIFICATIONS

MIL-STD-1553B
STANAG 3838
SAE AS 4115
JN 1176*

* JN 1176
approval only concerns
AMB/E - C4 with cable 31.
DDP reference :
DDP-J-920-A-823.

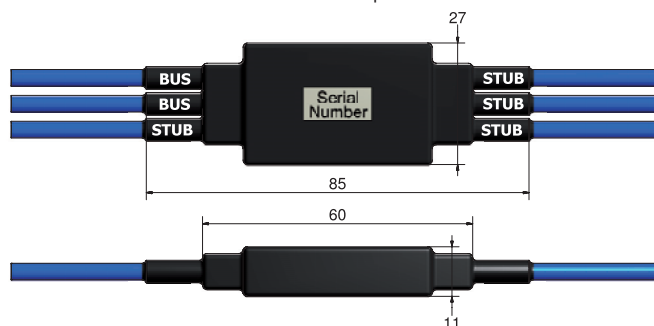
AMB / E - C4 - XX

Version with bus lines on opposite sides of the coupler.



AMB / E - C41 - XX

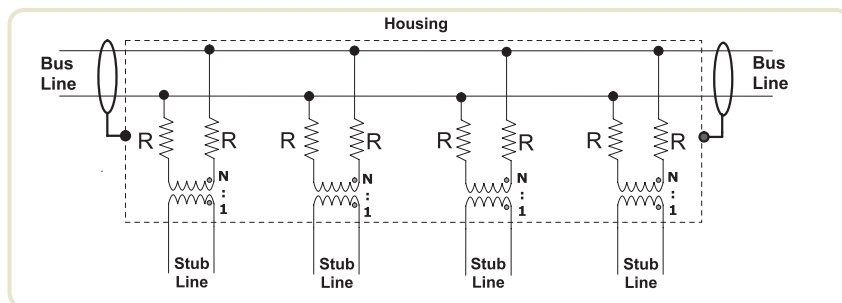
Version with bus lines on same side of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMB /

**AXON'
MICROBUS**
(see complete
reference of the
coupler on Bus
Standard sheet,
page 14).

E

**E : EUROFIGHTER
VERSION**

CX

4 : 4 WAY IN-LINE COUPLER

Version with bus lines on
opposite sides of the coupler.
41 : 4 WAY IN-LINE COUPLER
Version with bus lines on
same side of the coupler.
(not a JN 1176 ITEM)

XX

CABLE REFERENCES (see cable specifications)

31 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PAN 6421- JN1176
60 : TWINAX BUS AWG 24 EXPANDED PTFE SINGLE BRAID (SB)
(not a JN 1176 ITEM)
61 : TWINAX BUS AWG 24 EXPANDED PTFE DOUBLE BRAID (DB)
(not a JN 1176 ITEM)

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance *	70 to 84 Ω	70 to 84 Ω
Turn ratio	1.41 \pm 3 %	1.41 \pm 3 %
CMR	< -45 dB at 1 MHz	< -50 dB at 1 MHz
Input impedance	> 750 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-55°C to 150°C)	> 750 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_o \pm 2$ %	57.6 $\Omega \pm 1$ %
Insulation resistance between : - bus / stub - inner wires / shield	100 M Ω at 250 V _{dc} 100 M Ω at 250 V _{dc}	> 1 000 M Ω at 250 V _{dc} > 1 000 M Ω at 500 V _{dc}
Transfer impedance	-	plot available
Shield continuity	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner wires - between outer insulation and shield	100 V rms 100 V rms	500 V rms 500 V rms

* Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-55°C to +150°C	-55°C to +150°C
Weight	-	< 25 g
Axial extraction force	>100 N	>100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	32 g rms, 1 hour in all directions 16 g rms, 120°C, 30 min. in all directions 49 g rms 15 g in all directions	32 g rms, 1 hour in all directions 16 g rms, 120°C, 30 min. in all directions 49 g rms 15 G's, half sine, 11 ms in all directions
Acceleration	20 g in all directions	20 G's in all directions
Low pressure resistance	9.1 mbars	9.1 mbars
Life test	1000 hours at +120°C	1000 hours at +120°C Bus operating with MIL-STD-1553B signal
Thermal test	-55°C to +150°C, 10 cycles	-55°C to +150°C, 10 cycles
MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)		
Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).		

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3$ %	$\sqrt{2} \pm 3$ %	$\sqrt{2} \pm 3$ %
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{dc} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (**)
Primary parallel inductance	-	$L_p = 22$ mH	$L_p \geq 20$ mH
Primary parallel capacitance	-	$C_p = 10$ pF	$C_p \leq 11.4$ pF
Inter-winding capacitance	-	$C_i = 45$ pF	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20$ %	$D = 4.5$ % (**)	$D < 20$ %
Overshoot and ringing (*)	$O < \pm 1$ V	$O = 0.3$ V (**)	$O < \pm 1$ V

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

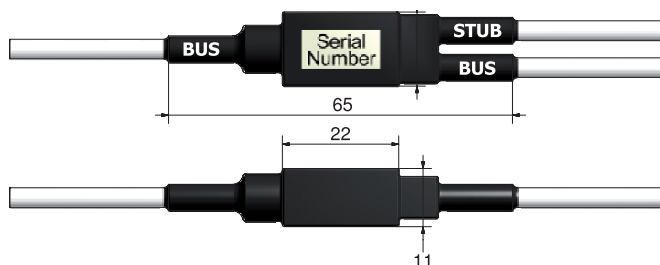
1 way in-line direct coupler

SPECIFICATIONS

MIL-STD-1553B
STANAG 3838
SAE AS4115

AMBD / A - C1 - XX

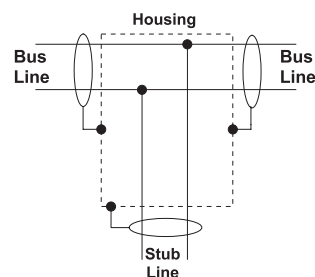
Version with bus lines on opposite sides of the coupler.



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

AMBD /

A

C1

XX

AXON'
MICROBUS
DIRECT
COUPLER

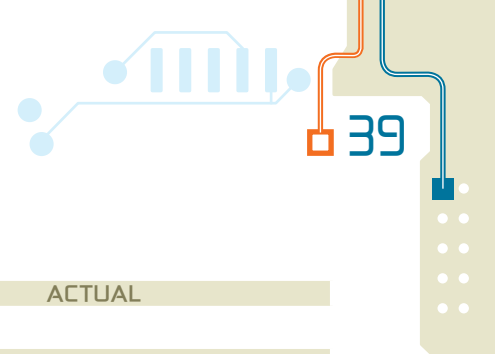
A : AERONAUTICS
VERSION

1 : 1 WAY IN-LINE DIRECT
COUPLER

Version with bus lines on
opposite sides of the coupler.

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID with
high immunity tape (DB/HI) according to PR EN 3375-005
70 : TWINAX BUS AWG 26 SINGLE BRAID (SB)
71 : TWINAX BUS AWG 26 DOUBLE BRAID (DB)
according to ECS 0700
72 : TWINAX BUS AWG 26 DOUBLE BRAID
with high immunity tape (DB/HI)
Other cables on request.

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).

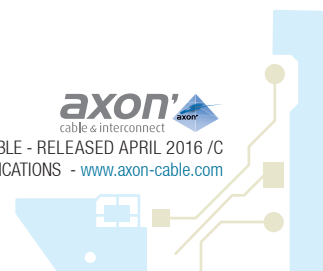


Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance	70 to 84 Ω	70 to 84 Ω
Insulation resistance between : - Outer jacket / shield - inner wires / shield	- -	1000 M Ω under V = 500 V _{DC} 1000 M Ω under V = 500 V _{DC}
Shield connection resistance	-	10 m Ω maximum
Shield coverage	Cable 90 % Connection 75 %	Cable 90 % minimum Connection 100 %
Dielectric withstanding strength : - between shield and inner conductors - between outer insulation and shield	- -	V = 500 V rms V = 500 V rms

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	High resistance to board fluids (sealed case)
Weight : < 9 g	High resistance to salt spray (sealed case)
Axial extraction force : 100 N	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	Fully waterproof
Excellent resistance to thermal stress	Crush resistance : 500 N
Low pressure resistance : 11 mbar	



BOX couplers

Removable
databus box
couplers allow
the user
to build
its databus
network
as a lego®.

Advantages of removable box couplers

- › The box coupler can be offered as a standard component.
- › The user can build its databus network for itself : branches can be easily changed
- › Box couplers are easy to use for prototypes
- › Box couplers are easy to use for lab testing or for land applications
- › They allow for easy maintenance and handling

The major drawbacks of box couplers (also called dismountable couplers) are the weight and the fixation mode.

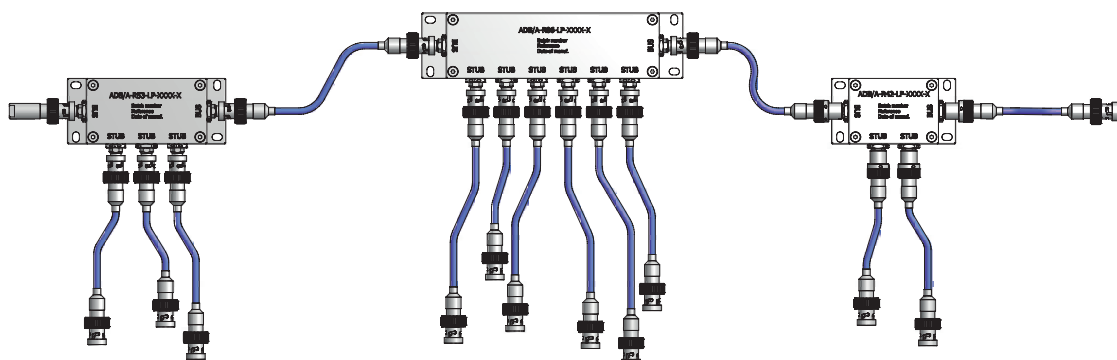
Box couplers are heavier than inline couplers (see page 12).

As far as the fixation mode is concerned, the network designer has to plan them quite early in the design phase.

Different versions

- › Low profile removable box couplers.
They are made with AXON' ACB1 connectors.
They are smaller and lighter than the standard box couplers.
- › Standard removable box couplers.
They mate with contacts made by Trompeter or other manufacturers.
- › Customised shapes to customer requests.

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TRADEMARK



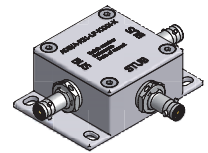
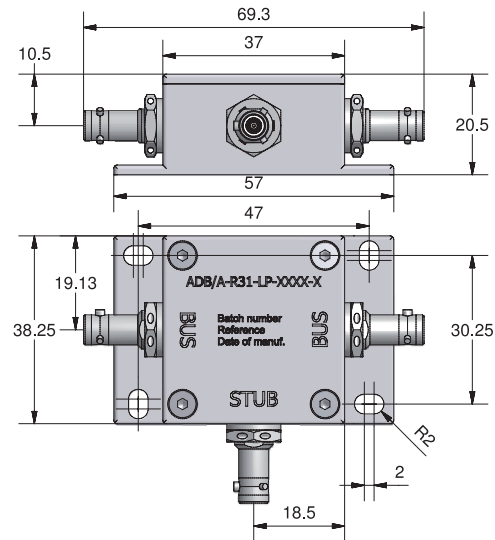
BOX COUPLERS

1 way box coupler

LOW
PROFILE
VERSION

ADB / A - R31 - LP - XXXX - X

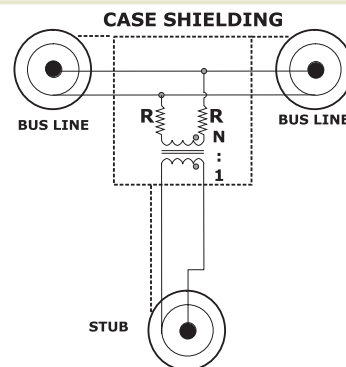
SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ADB /	A	R	3	1	LP	XXXX	X
AXON' DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	REMOVABLE VERSION	NUMBER OF OUTLETS	NUMBER OF STUBS	LOW PROFILE VERSION	TYPE OF CONNECTORS See next page "available connector types"	INTERMEDIATE CONTACT TYPE See next page connector types

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
 For instance, ADB/A-R21-LP-XX is a coupler with one bus connector, one stub connector and one terminator inside the housing.

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 3000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 3000 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	100 M Ω	> 1 000 M Ω at 250 V _{DC}
- inner contacts / shield	100 M Ω	> 1 000 M Ω at 500 V _{DC}
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 85 g	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

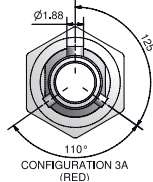
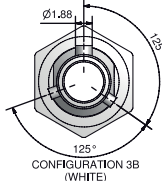
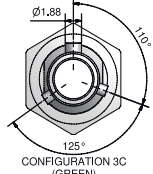
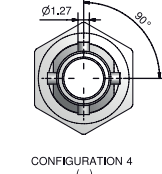
Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Connector types : AXON' ACB1 series

COUPLER REFERENCE	CONNECTOR TYPE (*)	CORRESPONDING KEYING	
ADB/A - R31 - LP - BK3A-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	 CONFIGURATION 3A (RED)	 CONFIGURATION 3B (WHITE)
ADB/A - R31 - LP - BK3B-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact		
ADB/A - R31 - LP - BK3C-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	 CONFIGURATION 3C (GREEN)	 CONFIGURATION 4 (-)
ADB/A - R31 - LP - BK4-X with X = S or P (**)	Bayonet 4 lug connector with pin or socket intermediate contact		
ADB/A - R31 - LP - BK1-X with X = S or P (**)	Threaded connector with pin or socket intermediate contact		

(*) : Refers to the ACB1 specification to have detailed technical information and half mating connectors.

(**) : The sex of the connector (pin or socket) is given by the intermediate contact.

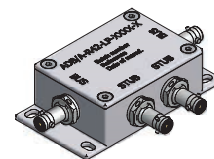
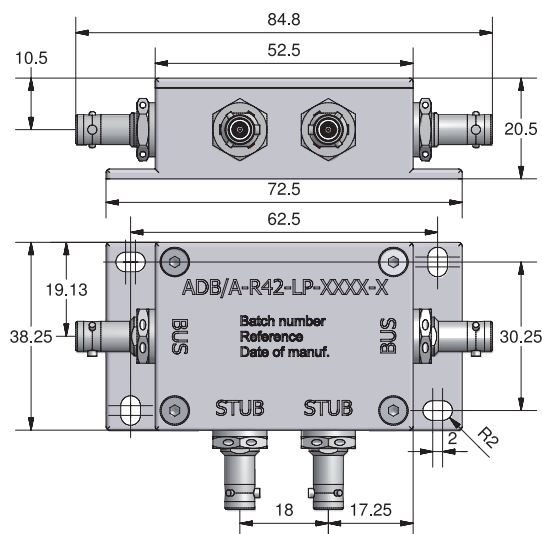
2 way box coupler

**LOW
PROFILE
VERSION**

ADB / A - R42 - LP - XXXX - X

SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115

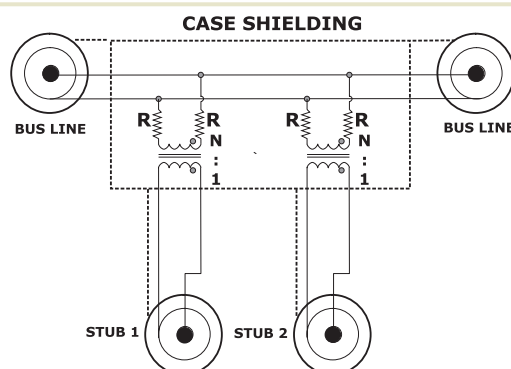


NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ADB /	A	R	4	2	LP	XXXX	X
AXON' DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	REMOVABLE VERSION	NUMBER OF OUTLETS	NUMBER OF STUBS	LOW PROFILE VERSION	TYPE OF CONNECTORS See next page "available connector types"	INTERMEDIATE CONTACT TYPE See next page connector types

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB/A-R32-LP-XX is a coupler with one bus connector, two stub connectors and one terminator inside the housing.

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 1500 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 1500 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	100 M Ω	> 1 000 M Ω at 250 V _{DC}
- inner contacts / shield	100 M Ω	> 1 000 M Ω at 500 V _{DC}
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 116 g	MTBF available following MIL-HDBK 217
Excellent vibration and shock resistance	(environment and operating temperature to be specified)
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

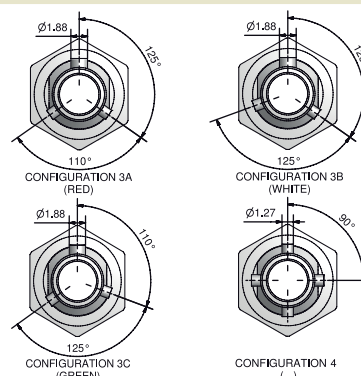
Connector types : AXON' ACB1 series

COUPLER REFERENCE	CONNECTOR TYPE (*)
ADB/A - R42 - LP - BK3A-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R42 - LP - BK3B-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R42 - LP - BK3C-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R42 - LP - BK4-X with X = S or P (**)	Bayonet 4 lug connector with pin or socket intermediate contact
ADB/A - R42 - LP - BK1-X with X = S or P (**)	Threaded connector with pin or socket intermediate contact

(*) : Refers to the ACB1 specification to have detailed technical information and half mating connectors.

(**) : The sex of the connector (pin or socket) is given by the intermediate contact.

CORRESPONDING KEYING



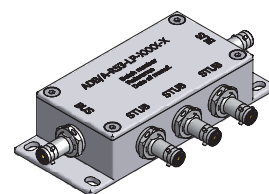
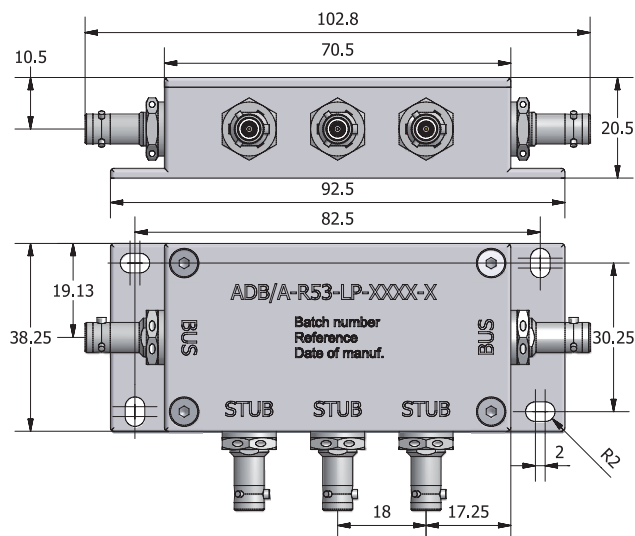
3 way box coupler

LOW
PROFILE
VERSION

ADB / A - R53 - LP - XXXX - X

SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115

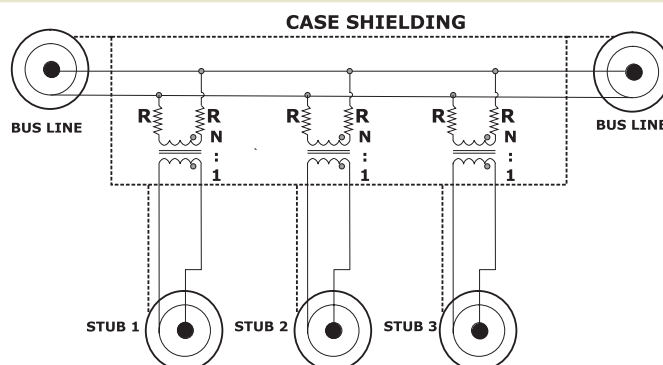


NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ADB /

A

R

5

3

LP

XXXX

X

AXON'
DATABUS
COUPLER

A : AERONAUTICS
VERSION
(for space
applications,
please contact us)

REMOVABLE
VERSION

NUMBER
OF OUTLETS

NUMBER
OF STUBS

LOW
PROFILE
VERSION

TYPE OF
CONNECTORS
See next page
"available
connector
types"

INTERMEDIATE
CONTACT TYPE
See next page
connector types

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB/A-R43-LP-XX is a coupler with one bus connector, three stub connectors and one terminator inside the housing.

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 1000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 1000 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	100 M Ω	> 1 000 M Ω at 250 V _{DC}
- inner contacts / shield	100 M Ω	> 1 000 M Ω at 500 V _{DC}
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 148 g	MTBF available following MIL-HDBK 217
Excellent vibration and shock resistance	(environment and operating temperature to be specified)
Excellent resistance to thermal stress	

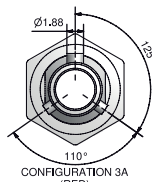
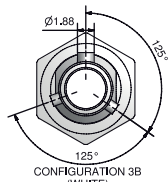
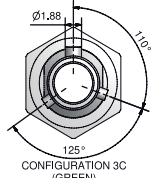
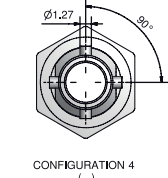
Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Connector types : AXON' ACB1 series

COUPLER REFERENCE	CONNECTOR TYPE (*)	CORRESPONDING KEYING	
ADB/A - R53 - LP - BK3A-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	 CONFIGURATION 3A (RED)	 CONFIGURATION 3B (WHITE)
ADB/A - R53 - LP - BK3B-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact		
ADB/A - R53 - LP - BK3C-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	 CONFIGURATION 3C (GREEN)	 CONFIGURATION 4 (-)
ADB/A - R53 - LP - BK4-X with X = S or P (**)	Bayonet 4 lug connector with pin or socket intermediate contact		
ADB/A - R53- LP - BK1-X with X = S or P (**)	Threaded connector with pin or socket intermediate contact		

(*) : Refers to the ACB1 specification to have detailed technical information and half mating connectors.

(**) : The sex of the connector (pin or socket) is given by the intermediate contact.

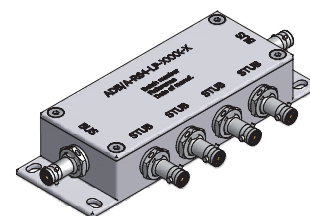
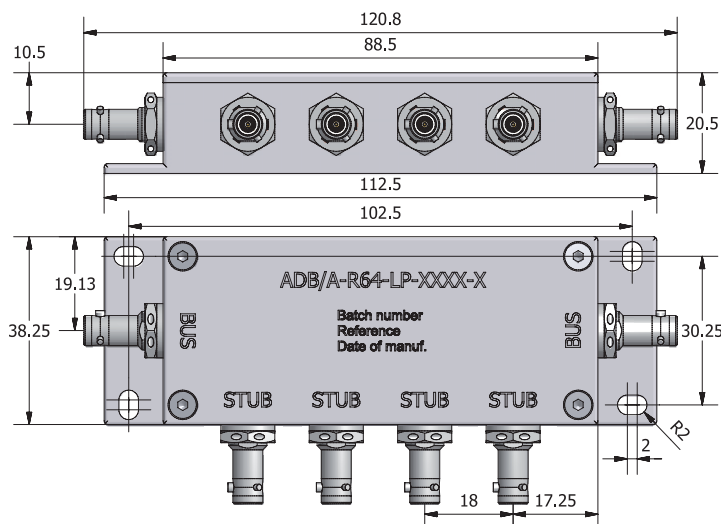
4 way box coupler

**LOW
PROFILE
VERSION**

ADB / A - R64 - LP - XXXX - X

SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115

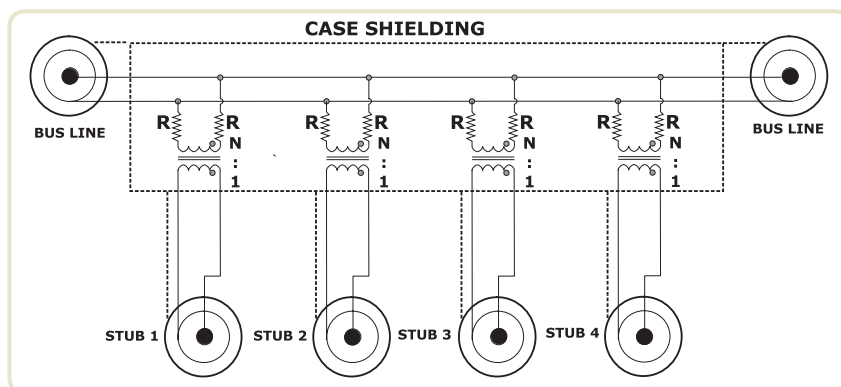


NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ADB /	A	R	6	4	LP	XXXX	X
AXON' DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	REMOVABLE VERSION	NUMBER OF OUTLETS	NUMBER OF STUBS	LOW PROFILE VERSION	TYPE OF CONNECTORS See next page "available connector types"	INTERMEDIATE CONTACT TYPE See next page connector types

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB/A-R54-LP-XX is a coupler with one bus connector, four stub connectors and one terminator inside the housing.

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 750 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 750 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	100 M Ω	> 1 000 M Ω at 250 V _{DC}
- inner contacts / shield	100 M Ω	> 1 000 M Ω at 500 V _{DC}
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 183 g	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Connector types : AXON' ACB1 series

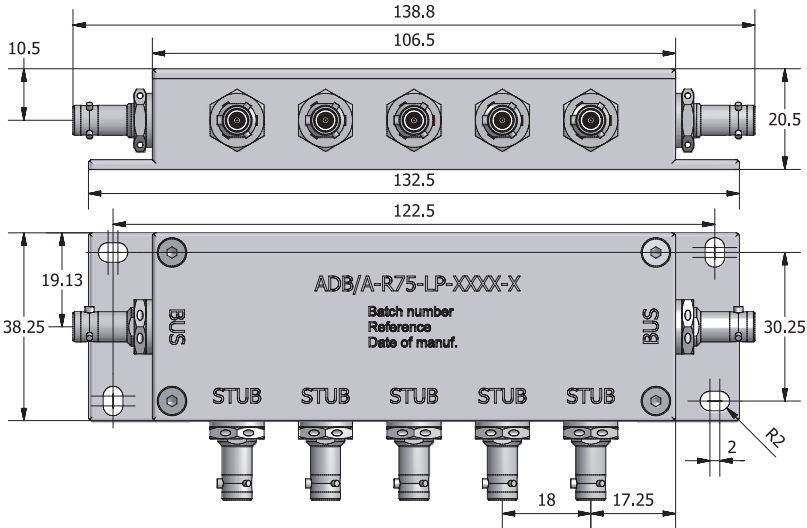
COUPLER REFERENCE	CONNECTOR TYPE (*)	CORRESPONDING KEYING	
ADB/A - R64 - LP - BK3A-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	<p>CONFIGURATION 3A (RED)</p>	<p>CONFIGURATION 3B (WHITE)</p>
ADB/A - R64 - LP - BK3B-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact		
ADB/A - R64 - LP - BK3C-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	<p>CONFIGURATION 3C (GREEN)</p>	<p>CONFIGURATION 4 (-)</p>
ADB/A - R64 - LP - BK4-X with X = S or P (**)	Bayonet 4 lug connector with pin or socket intermediate contact		
ADB/A - R64 LP - BK1-X with X = S or P (**)	Threaded connector with pin or socket intermediate contact		

(*) : Refers to the ACB1 specification to have detailed technical information and half mating connectors.

(**) : The sex of the connector (pin or socket) is given by the intermediate contact.

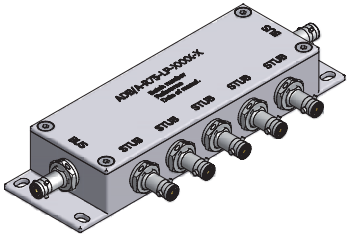
SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115



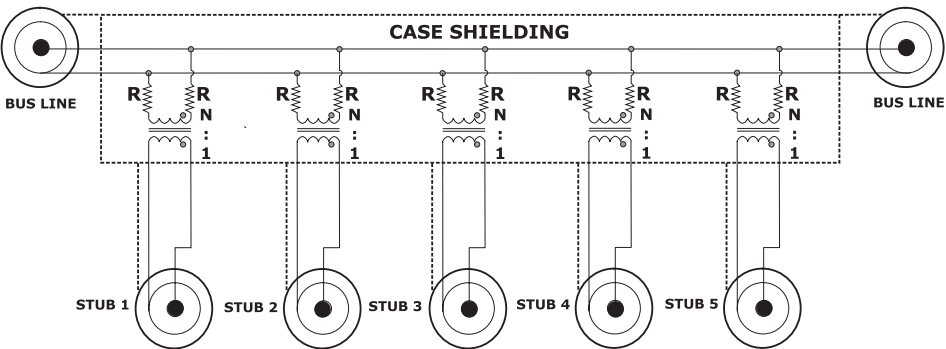
Electrical scheme

N = 1.41 ± 3%
R = fault protection resistor
R = 0.75 Zo = 57.6 Ω ± 1%



NOTE : customised databus couplers
are available upon request.

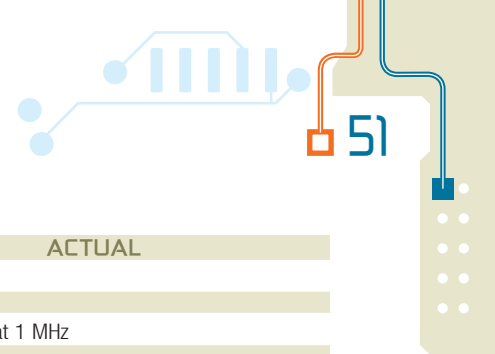
DIMENSIONS in mm



Identification code

ADB /	A	R	7	5	LP	XXXX	X
AXON' DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	REMOVABLE VERSION	NUMBER OF OUTLETS	NUMBER OF STUBS	LOW PROFILE VERSION	TYPE OF CONNECTORS See next page "available connector types"	INTERMEDIATE CONTACT TYPE See next page connector types

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77 Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB/A-R65-LP-XX is a coupler with one bus connector, five stub connectors and one terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 600 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 600 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	100 M Ω	> 1 000 M Ω at 250 V _{DC}
- inner contacts / shield	100 M Ω	> 1 000 M Ω at 500 V _{DC}
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 214 g	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

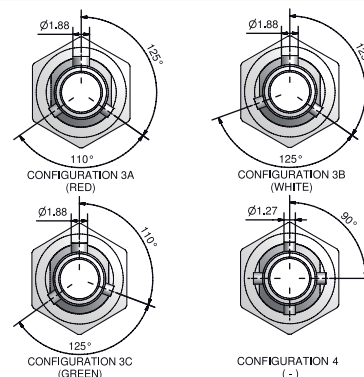
Connector types : AXON' ACB1 series

COUPLER REFERENCE	CONNECTOR TYPE (*)
ADB/A - R75 - LP - BK3A-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R75 - LP - BK3B-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R75 - LP - BK3C-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R75 - LP - BK4-X with X = S or P (**)	Bayonet 4 lug connector with pin or socket intermediate contact
ADB/A - R75 LP - BK1-X with X = S or P (**)	Threaded connector with pin or socket intermediate contact

(*) : Refers to the ACB1 specification to have detailed technical information and half mating connectors.

(**) : The sex of the connector (pin or socket) is given by the intermediate contact.

CORRESPONDING KEYING



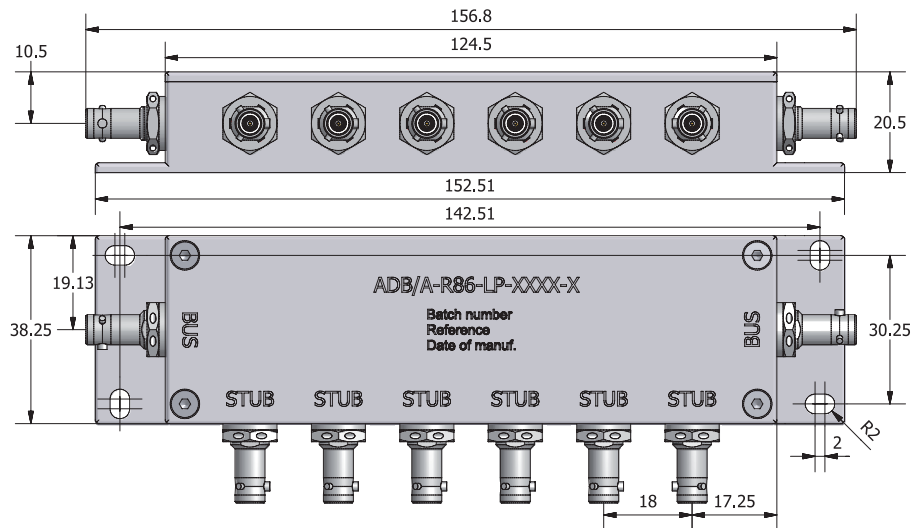
6 way box coupler

**LOW
PROFILE
VERSION**

SPECIFICATIONS

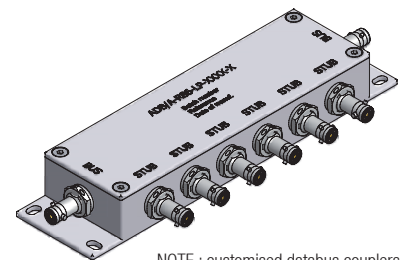
MIL-STD-1553B
SAE AS 4115

ADB / A - R86 - LP - XXXX - X



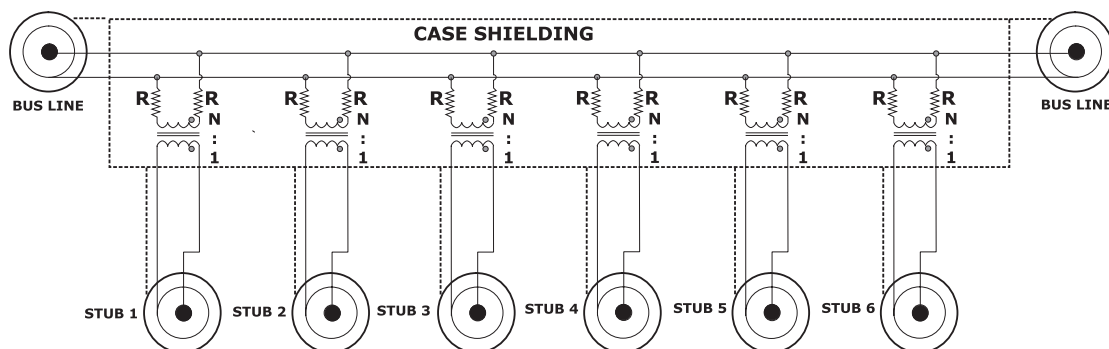
Electrical scheme

$N = 1.41 \pm 3\%$
R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm



Identification code

ADB /	A	R	8	6	LP	XXXX	X
AXON' DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	REMOVABLE VERSION	NUMBER OF OUTLETS	NUMBER OF STUBS	LOW PROFILE VERSION	TYPE OF CONNECTORS See next page "available connector types"	INTERMEDIATE CONTACT TYPE See next page connector types

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77 Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB/A-R76-LP-XX is a coupler with one bus connector, six stub connectors and one terminator inside the housing.

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 500 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 500 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	100 M Ω	> 1 000 M Ω at 250 V _{DC}
- inner contacts / shield	100 M Ω	> 1 000 M Ω at 500 V _{DC}
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 248 g	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

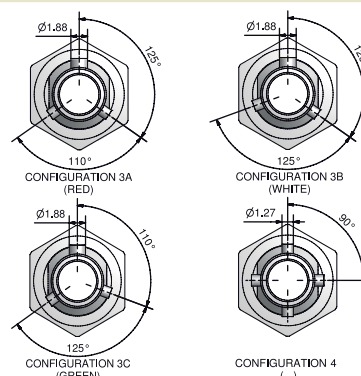
Connector types : AXON' ACB1 series

COUPLER REFERENCE	CONNECTOR TYPE (*)
ADB/A - R86 - LP - BK3A-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R86 - LP - BK3B-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R86 - LP - BK3C-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact
ADB/A - R86 - LP - BK4-X with X = S or P (**)	Bayonet 4 lug connector with pin or socket intermediate contact
ADB/A - R86 LP - BK1-X with X = S or P (**)	Threaded connector with pin or socket intermediate contact

(*) : Refers to the ACB1 specification to have detailed technical information and half mating connectors.

(**) : The sex of the connector (pin or socket) is given by the intermediate contact.

CORRESPONDING KEYING



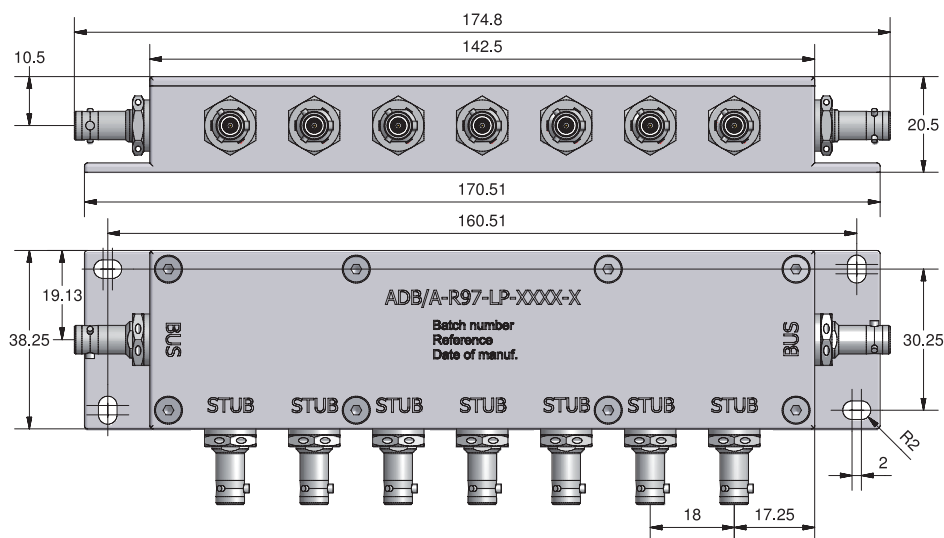
7 way box coupler

LOW
PROFILE
VERSION

ADB / A - R97 - LP - XXXX - X

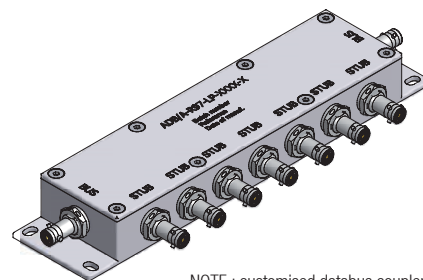
SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115



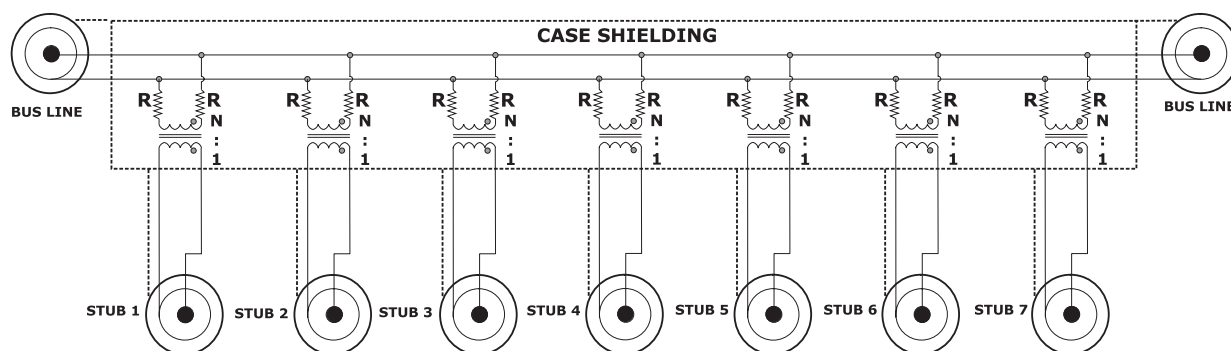
Electrical scheme

$N = 1.41 \pm 3\%$
R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm



Identification code

ADB /	A	R	9	7	LP	XXXX	X
AXON' DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	REMOVABLE VERSION	NUMBER OF OUTLETS	NUMBER OF STUBS	LOW PROFILE VERSION	TYPE OF CONNECTORS See next page "available connector types"	INTERMEDIATE CONTACT TYPE See next page connector types

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77 Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB/A-R87-LP-XX is a coupler with one bus connector, seven stub connectors and one terminator inside the housing.

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 428 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 428 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between :		
- bus / stub	100 M Ω	> 1 000 M Ω at 250 V _{DC}
- inner contacts / shield	100 M Ω	> 1 000 M Ω at 500 V _{DC}
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength :		
- between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 283 g	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Connector types : AXON' ACB1 series

COUPLER REFERENCE	CONNECTOR TYPE (*)	CORRESPONDING KEYING
ADB/A - R97 - LP - BK3A-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	
ADB/A - R97 - LP - BK3B-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	
ADB/A - R97 - LP - BK3C-X with X = S or P (**)	Bayonet 3 lug connector with pin or socket intermediate contact	
ADB/A - R97 - LP - BK4-X with X = S or P (**)	Bayonet 4 lug connector with pin or socket intermediate contact	
ADB/A - R97 LP - BK1-X with X = S or P (**)	Threaded connector with pin or socket intermediate contact	CONFIGURATION 4 (-)

(*) : Refers to the ACB1 specification to have detailed technical information and half mating connectors.

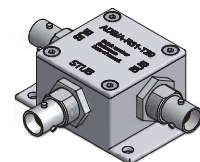
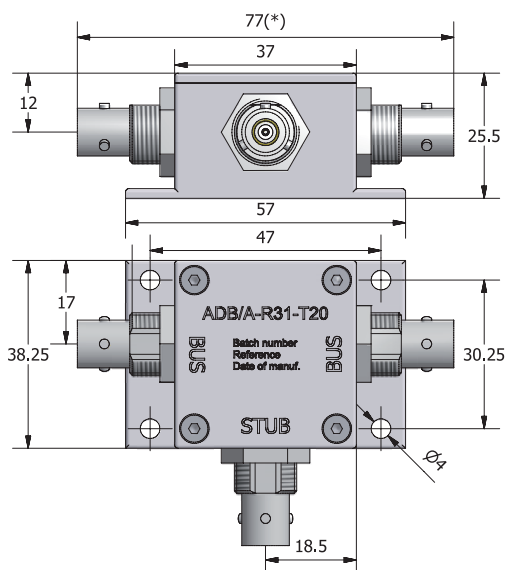
(**) : The sex of the connector (pin or socket) is given by the intermediate contact.

1 way box coupler

ADB / A - R31 - XX

SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115

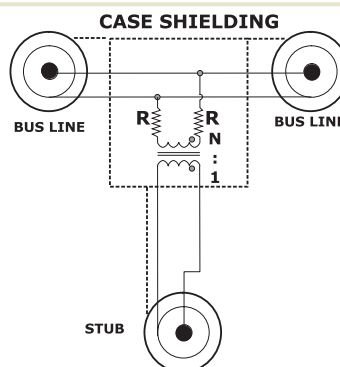


NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ADB /

A

R

3

1

XX

AXON'
DATABUS
COUPLER

A : AERONAUTICS
VERSION
(for space
applications,
please contact us)

REMOVABLE
VERSION

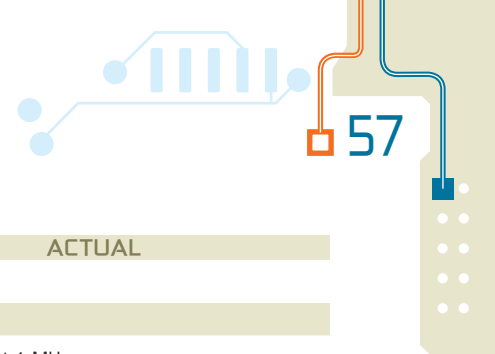
NUMBER
OF OUTLETS

NUMBER
OF STUBS

TYPE OF
CONNECTORS

See next page "available connector types"

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77 Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB-R21-XX is a coupler with one bus connector, one stub connector and one terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 3000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 3000 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner contacts / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 120 g -T20 version	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.
(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Available connector types

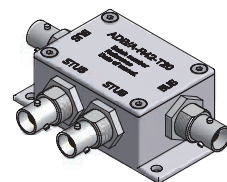
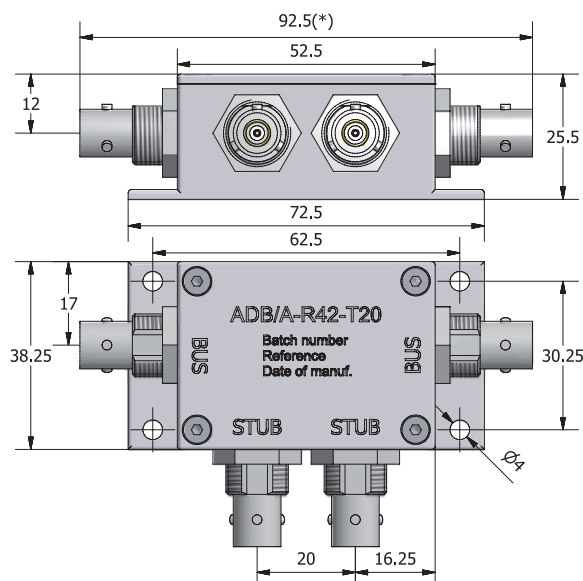
ADB/A-RXX-T10 - Sub-miniature Trompeter BJ-150 (bayonet 3 lugs)
ADB/A-RXX-T11 - Sub-miniature Trompeter BJ-3150 (threaded)
ADB/A-RXX-T20 - Miniature Trompeter BJ-76 (bayonet 3 lugs)
ADB/A-RXX-T21 - Miniature Trompeter BJ-376 (threaded)
 Other connectors can be adapted on request.

2 way box coupler

ADB / A - R42 - XX

SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115

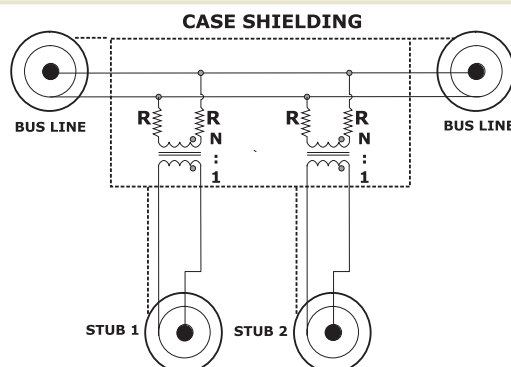


NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ADB /

A

R

4

2

XX

AXON'
DATABUS
COUPLER

A : AERONAUTICS
VERSION
(for space
applications,
please contact us)

REMOVABLE
VERSION

NUMBER
OF OUTLETS

NUMBER
OF STUBS

TYPE OF
CONNECTORS

See next page "available connector types"

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB-R32-XX is a coupler with one bus connector, two stub connector and one terminator inside the housing.

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 1500 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 1500 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner contacts / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 163 g -T20 version	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Available connector types

ADB/A-RXX-T10 - Sub-miniature Trompeter BJ-150 (bayonet 3 lugs)

ADB/A-RXX-T11 - Sub-miniature Trompeter BJ-3150 (threaded)

ADB/A-RXX-T20 - Miniature Trompeter BJ-76 (bayonet 3 lugs)

ADB/A-RXX-T21 - Miniature Trompeter BJ-376 (threaded)

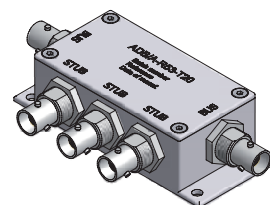
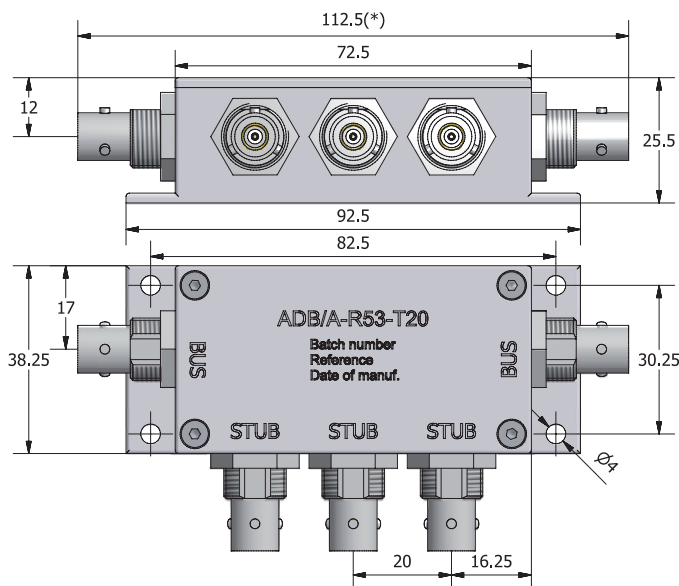
Other connectors can be adapted on request.

3 way box coupler

ADB / A - R53 - XX

SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115

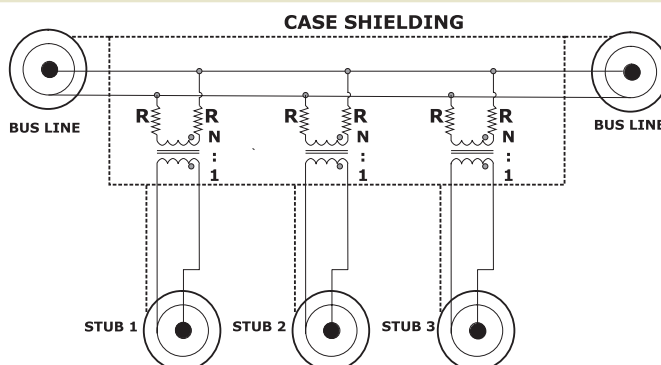


NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm

Electrical scheme

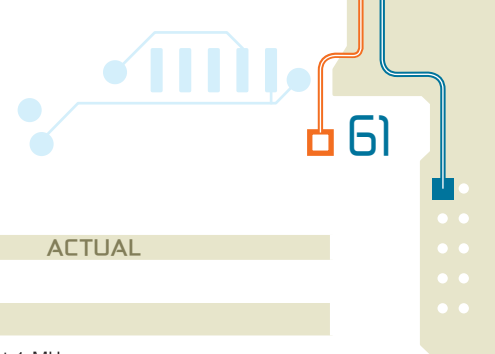
$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ADB /	A	R	5	3	XX
AXON' DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	REMOVABLE VERSION	NUMBER OF OUTLETS	NUMBER OF STUBS	TYPE OF CONNECTORS See next page "available connector types"

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB-R43-XX is a coupler with one bus connector, three stub connectors and one terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 1000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 1000 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner contacts / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 207 g -T20 version	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

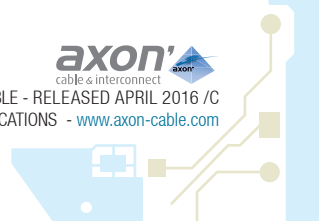
Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.
(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Available connector types

ADB/A-RXX-T10 - Sub-miniature Trompeter BJ-150 (bayonet 3 lugs)
ADB/A-RXX-T11 - Sub-miniature Trompeter BJ-3150 (threaded)
ADB/A-RXX-T20 - Miniature Trompeter BJ-76 (bayonet 3 lugs)
ADB/A-RXX-T21 - Miniature Trompeter BJ-376 (threaded)
 Other connectors can be adapted on request.

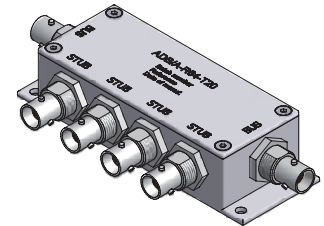
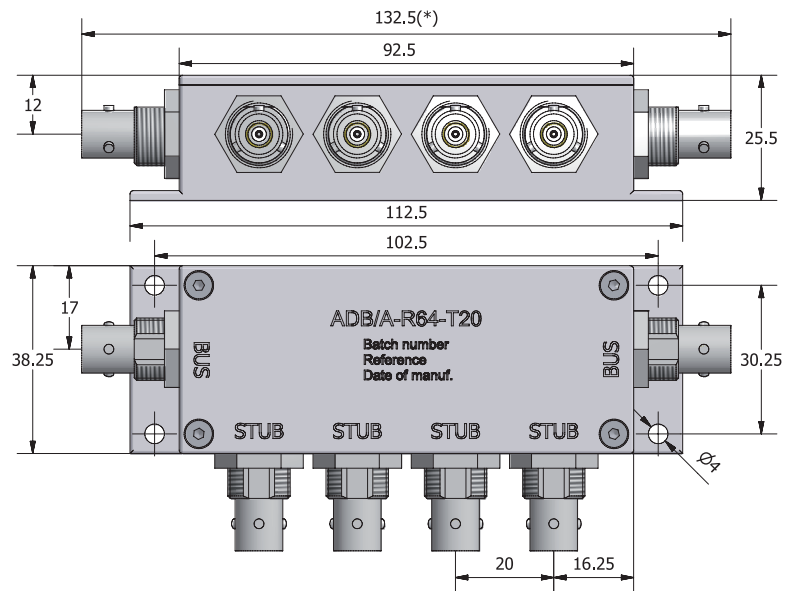


4 way box coupler

ADB / A - R64 - XX

SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115

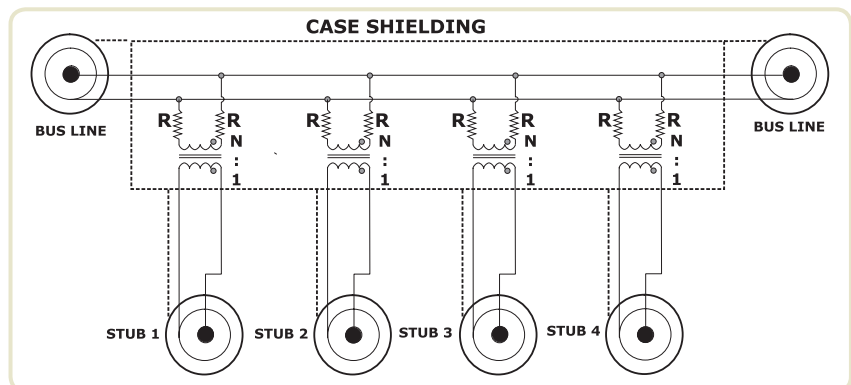


NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ADB /

A

R

6

4

XX

AXON'
DATABUS
COUPLER

A : AERONAUTICS
VERSION
(for space
applications,
please contact us)

REMOVABLE
VERSION

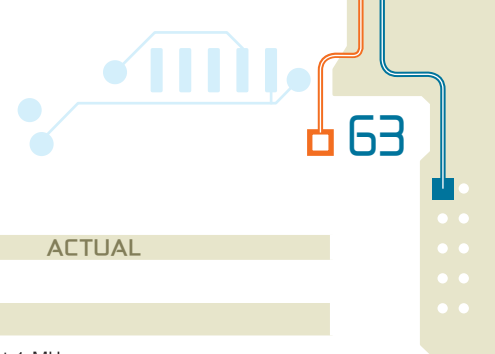
NUMBER
OF OUTLETS

NUMBER
OF STUBS

TYPE OF
CONNECTORS

See next page "available connector types"

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB-R54-XX is a coupler with one bus connector, four stub connectors and one terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 750Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 750Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner contacts / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 256g -T20 version	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1\,000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.
(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Available connector types

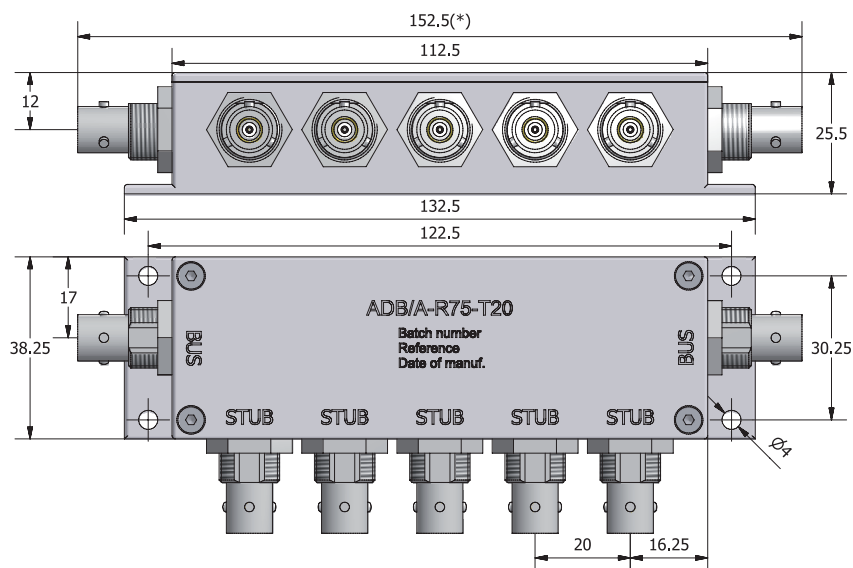
ADB/A-RXX-T10 - Sub-miniature Trompeter BJ-150 (bayonet 3 lugs)
ADB/A-RXX-T11 - Sub-miniature Trompeter BJ-3150 (threaded)
ADB/A-RXX-T20 - Miniature Trompeter BJ-76 (bayonet 3 lugs)
ADB/A-RXX-T21 - Miniature Trompeter BJ-376 (threaded)
 Other connectors can be adapted on request.

5 way box coupler

ADB / A - R75 - XX

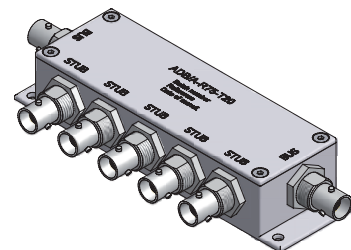
SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115



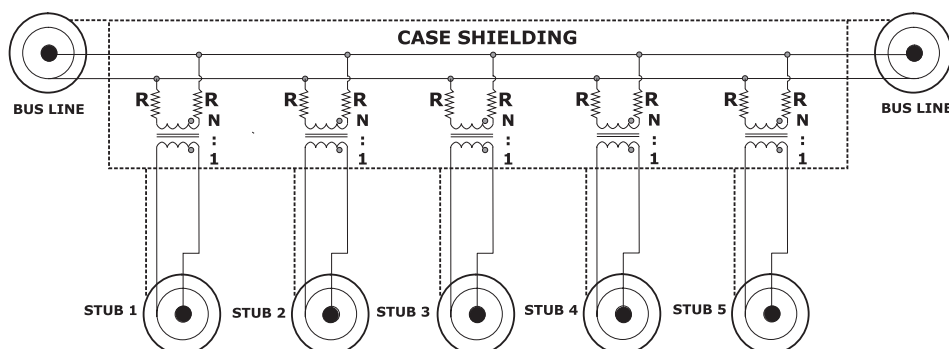
Electrical scheme

$N = 1.41 \pm 3\%$
R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm



Identification code

ADB /

A

R

7

5

XX

AXON'
DATABUS
COUPLER

A : AERONAUTICS
VERSION
(for space
applications,
please contact us)

REMOVABLE
VERSION

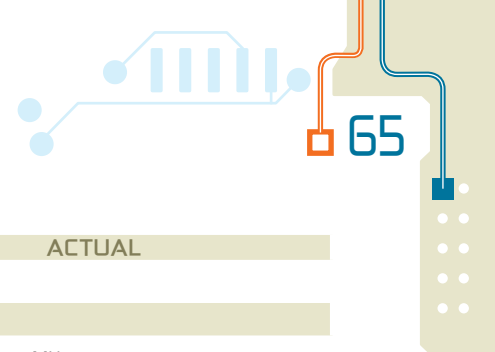
NUMBER
OF OUTLETS

NUMBER
OF STUBS

TYPE OF
CONNECTORS

See next page "available connector types"

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB-R65-XX is a coupler with one bus connector, five stub connectors and one terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 600Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 600Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner contacts / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 298g -T20 version	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.
(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Available connector types

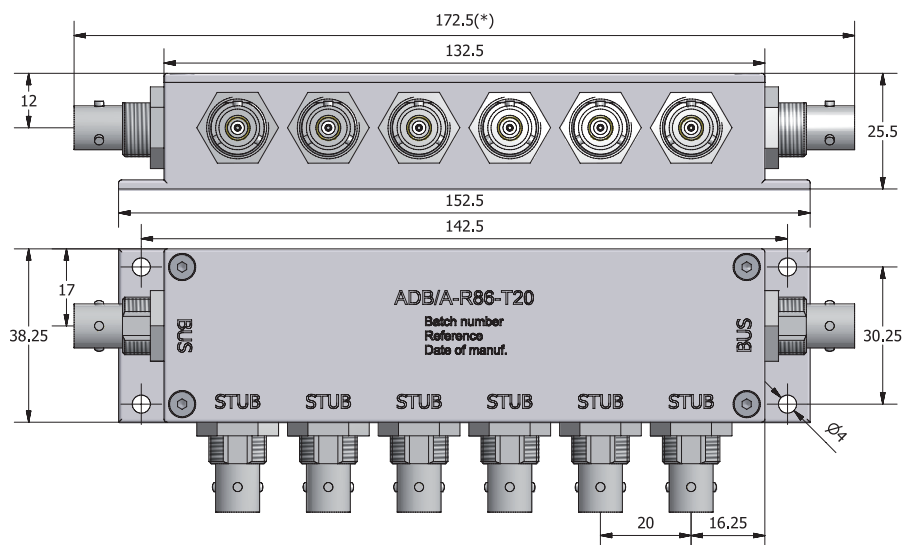
ADB/A-RXX-T10 - Sub-miniature Trompeter BJ-150 (bayonet 3 lugs)
ADB/A-RXX-T11 - Sub-miniature Trompeter BJ-3150 (threaded)
ADB/A-RXX-T20 - Miniature Trompeter BJ-76 (bayonet 3 lugs)
ADB/A-RXX-T21 - Miniature Trompeter BJ-376 (threaded)
 Other connectors can be adapted on request.

6 way box coupler

ADB / A - R86 - XX

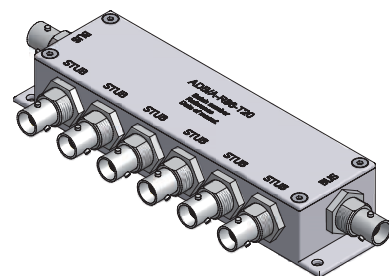
SPECIFICATIONS

MIL-STD-1553B
SAE AS 4115



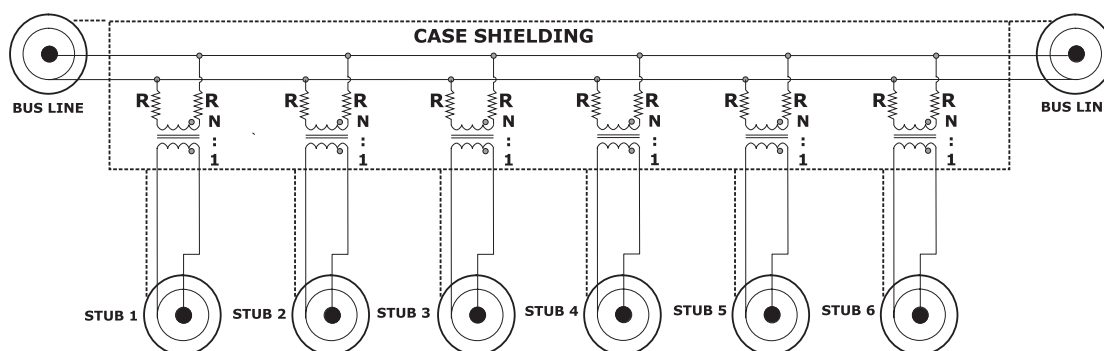
Electrical scheme

$N = 1.41 \pm 3\%$
R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



NOTE : customised databus couplers
are available upon request.

DIMENSIONS in mm



Identification code

ADB /

A

R

8

6

XX

AXON'
DATABUS
COUPLER

A : AERONAUTICS
VERSION
(for space
applications,
please contact us)

REMOVABLE
VERSION

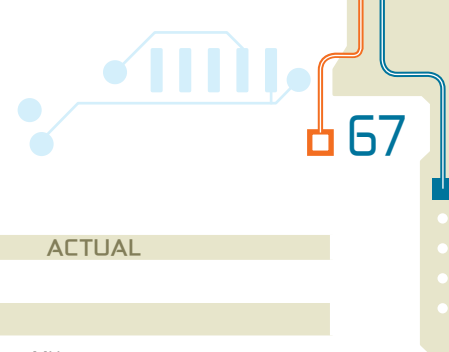
NUMBER
OF OUTLETS

NUMBER
OF STUBS

TYPE OF
CONNECTORS

See next page "available connector types"

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB-R76-XX is a coupler with one bus connector, six stub connectors and one terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 500 Ω in the frequency range (75 kHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 500 Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_0 \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus / stub - inner contacts / shield	100 M Ω 100 M Ω	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	-	50 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner wires	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +150°C	Resistance to salt spray (48 hours) according to EN 2591-307
Weight : < 344g -T20 version	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent vibration and shock resistance	
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 - (*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Available connector types

ADB/A-RXX-T10 - Sub-miniature Trompeter BJ-150 (bayonet 3 lugs)

ADB/A-RXX-T11 - Sub-miniature Trompeter BJ-3150 (threaded)

ADB/A-RXX-T20 - Miniature Trompeter BJ-76 (bayonet 3 lugs)

ADB/A-RXX-T21 - Miniature Trompeter BJ-376 (threaded)

Other connectors can be adapted on request.

ACC couplers

More flexibility for the databus designer
AXON' has developed a new concept of coupler which enables customers to build their Bus network for on-board equipment for themselves.
This is an ideal solution covering the various options of space modelling, maintenance and service equipment.
This coupler provides flexibility to the databus designer.
It meets the MIL-STD-1553B standard.

Advantages of AXON' crimp Couplers (ACC)

- › Standard components : the coupler (1 to 4 stubs), the connector, the terminator, the cable and accessories are offered as standard off the shelf components that the customer can order in kit form (even before the definition of the network).
- › Easy assembling : the cable is first crimped to the connectors, which are in turn mated to the coupler. The whole harness is then integrated into the on-board equipment : the coupler can be either laced directly into the wire bundles or else fixed to the structure with adhesive tape or cable ties.
- › Easy to change damaged harness branches.
- › Flexible solution for the data bus designer: it is very easy to modify the network topology.
- › The Cabling Coupler can replace a damaged inline coupler as both are designed to meet the same environmental requirements (according to EN3567).
- › Dismountable and lightweight : the Cabling Coupler has all the advantages of both in-line couplers (see page 12) and dismountable couplers (see page 42) but with none of the drawbacks.
- › AXON' is able to do a network simulation from the design.
- › AXON' offers a portable test bench to test the network in site (see page 140).



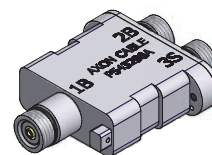
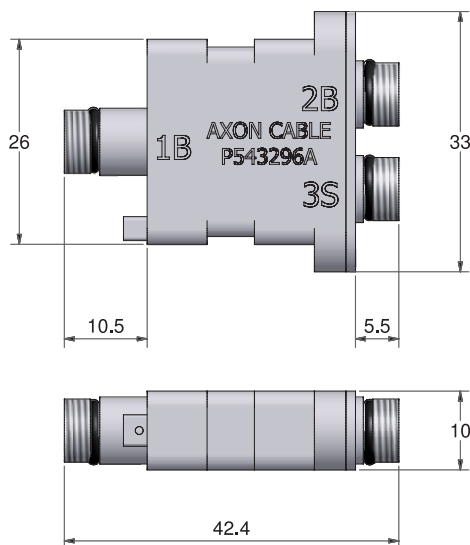
ACC COUPLER

1 way ACC coupler

ACC / A - C1

SPECIFICATIONS

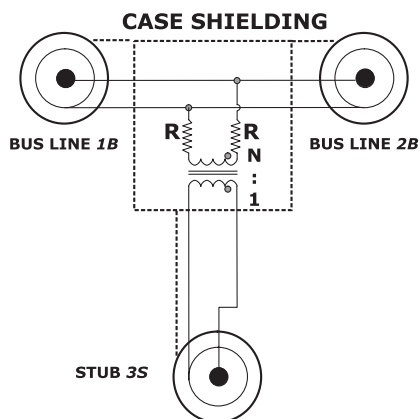
MIL-STD-1553B
[STANAG 3838]
EN-3567-001
SAE AS 4115



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ACC

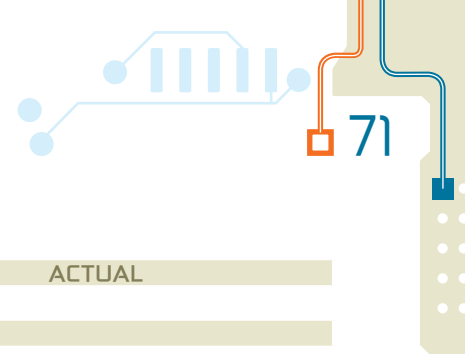
AXON'
CRIMPABLE
COUPLER

A

A : AERONAUTICS VERSION
(for space applications, please contact us)

C1

ONE WAY COUPLER



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	70 to 84 Ω	70 to 84 Ω
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -45 dB at 1 MHz
Input impedance	> 3000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 3000 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_o \pm 2 \%$	57.6 $\Omega \pm 1 \%$
Insulation resistance between : - bus line / stub line - inner conductors / shield	> 1000 M Ω at 250 V _{DC} > 1000 M Ω at 500 V _{DC}	> 1 000 M Ω at 250 V _{DC} > 1 000 M Ω at 500 V _{DC}
Shield continuity	< 20 m Ω	< 20 m Ω
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner conductors	500 V rms	500 V rms
(*) Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.		

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Mass of the coupler without connector	20.5 g maximum	20.5 g maximum
Mass of the connector	5 g maximum	5 g maximum
Vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine, 3 ms	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Tensile strength of a mated branch	70 N (*) with twinax bus 71 databus cable	70 N (*) with twinax bus 71 databus cable
Sealing	-	IP55
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles of 1 hour
Good resistance to onboard fluids and to salt spray (up to 500 hours)		
MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)		
(*) the value of tensile strength depends on the cable construction (please consult us).		

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$0 < \pm 1 V$	$0 = 0.3 V$ (**)	$0 < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

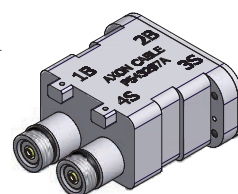
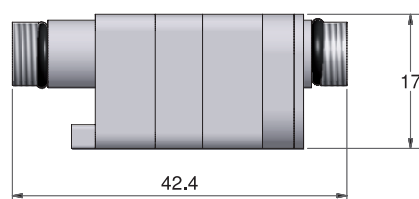
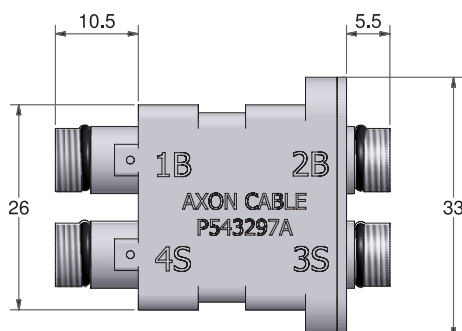
(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

2 way ACC coupler

ACC / A - C2

SPECIFICATIONS

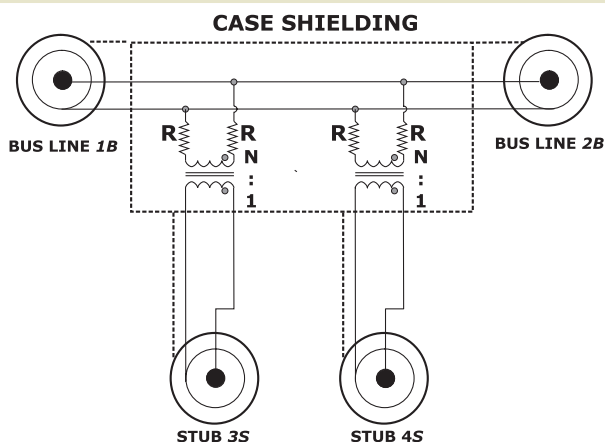
MIL-STD-1553B
[STANAG 3838]
EN-3567-001
SAE AS 4115



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ACC

AXON'
CRIMPABLE
COUPLER

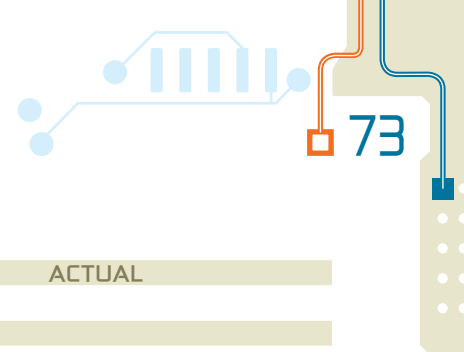
A

A : AERONAUTICS
VERSION
(for space applications, please contact us)

C2

TWO WAY COUPLER

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB-R21-XX is a coupler with a bus connector, three stub connectors and a terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	70 to 84 Ω	70 to 84 Ω
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -45 dB at 1 MHz
Input impedance	> 1500 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 1500 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_o \pm 2 \%$	57.6 $\Omega \pm 1 \%$
Insulation resistance between : - bus line / stub line - inner conductors / shield	> 1000 M Ω at 250 V _{DC} > 1000 M Ω at 500 V _{DC}	> 1 000 M Ω at 250 V _{DC} > 1 000 M Ω at 500 V _{DC}
Shield continuity	< 20 m Ω	< 20 m Ω
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner conductors	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Mass of the coupler without connector	32.5 g maximum	32.5 g maximum
Mass of the connector	5 g maximum	5 g maximum
Vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine, 3 ms	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Tensile strength of a mated branch	70 N (*) with twinax bus 71 databus cable	70 N (*) with twinax bus 71 databus cable
Sealing	-	IP55
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles of 1 hour
Good resistance to onboard fluids and to salt spray (up to 500 hours)		
MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)		

(*) the value of tensile strength depends on the cable construction (please consult us).

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 -

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

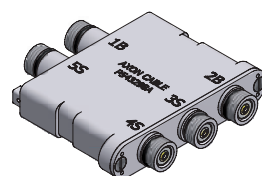
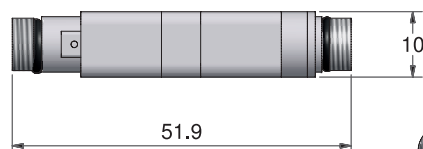
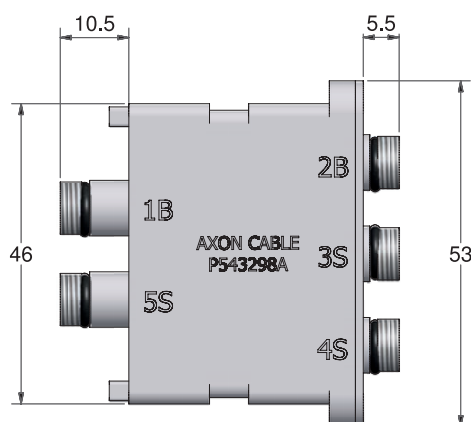
(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

3 way ACC coupler

ACC / A - C3

SPECIFICATIONS

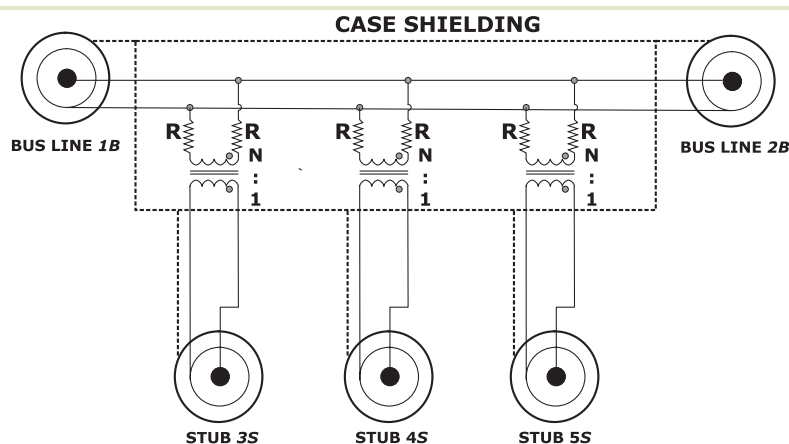
MIL-STD-1553B
[STANAG 3838]
EN-3567-001
SAE AS 4115



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ACC

AXON'
CRIMPABLE
COUPLER

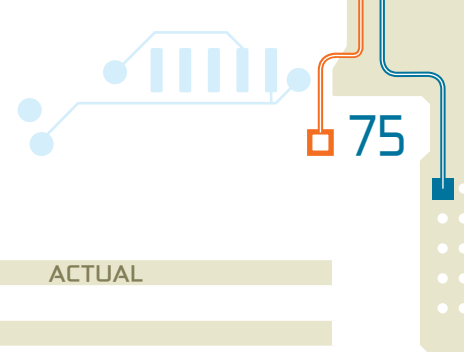
A

A : AERONAUTICS
VERSION
(for space applications, please contact us)

C3

THREE WAY COUPLER

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line.
For instance, ADB-R21-XX is a coupler with a bus connector, three stub connectors and a terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	70 to 84 Ω	70 to 84 Ω
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -45 dB at 1 MHz
Input impedance	> 1000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 1000 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_0 \pm 2 \%$	57.6 $\Omega \pm 1 \%$
Insulation resistance between : - bus line / stub line - inner conductors / shield	> 1000 M Ω at 250 V _{DC} > 1000 M Ω at 500 V _{DC}	> 1 000 M Ω at 250 V _{DC} > 1 000 M Ω at 500 V _{DC}
Shield continuity	< 20 m Ω	< 20 m Ω
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner conductors	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Mass of the coupler without connector	42.5 g maximum	42.5 g maximum
Mass of the connector	5 g maximum	5 g maximum
Vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine, 3 ms	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Tensile strength of a mated branch	70 N (*) with twinax bus 71 databus cable	70 N (*) with twinax bus 71 databus cable
Sealing	-	IP55
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles of 1 hour
Good resistance to onboard fluids and to salt spray (up to 500 hours)		
MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)		

(*) the value of tensile strength depends on the cable construction (please consult us).

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 -

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

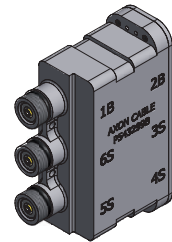
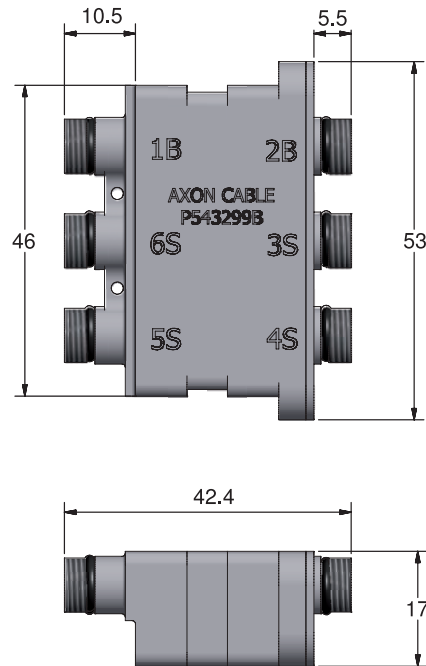
(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

4 way ACC coupler

SPECIFICATIONS

MIL-STD-1553B
[STANAG 3838]
EN-3567-001
SAE AS 4115

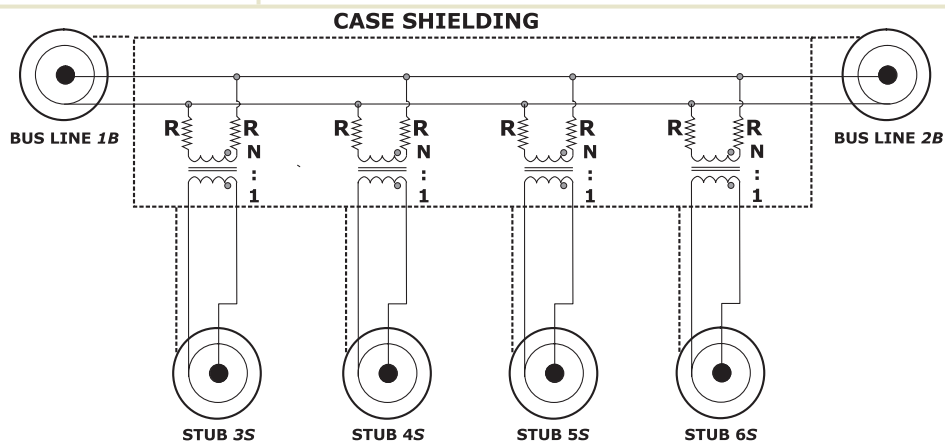
ACC / A - C4



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
 $R = \text{fault protection resistor}$
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Identification code

ACC

A

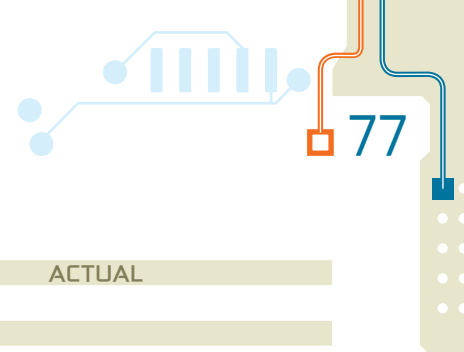
C4

AXON'
CRIMPABLE
COUPLER

A : AERONAUTICS
VERSION
(for space applications, please contact us)

FOUR WAY COUPLER

NOTE : POSSIBILITY TO INTEGRATE A BUS TERMINATOR (77Ω) INSIDE THE COUPLER. In this case, there is only one connector on the bus line. For instance, ADB-R21-XX is a coupler with a bus connector, three stub connectors and a terminator inside the housing.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	70 to 84 Ω	70 to 84 Ω
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB at 1 MHz	< -45 dB at 1 MHz
Input impedance	> 750 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 750 Ω
Fault protection insulation resistors in series on each bus winding connection	0.75 $Z_0 \pm 2 \%$	57.6 $\Omega \pm 1 \%$
Insulation resistance between : - bus line / stub line - inner conductors / shield	> 1000 M Ω at 250 V _{DC} > 1000 M Ω at 500 V _{DC}	> 1 000 M Ω at 250 V _{DC} > 1 000 M Ω at 500 V _{DC}
Shield continuity	< 20 m Ω	< 20 m Ω
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner connectors	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_0 at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Mass of the coupler without connector	52.5 g maximum	52.5 g maximum
Mass of the connector	5 g maximum	5 g maximum
Vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine, 3 ms	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Tensile strength of a mated branch	70 N (*) with twinax bus 71 databus cable	70 N (*) with twinax bus 71 databus cable
Sealing	-	IP55
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles of 1 hour
Good resistance to onboard fluids and to salt spray (up to 500 hours)		
MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)		
(*) the value of tensile strength depends on the cable construction (please consult us).		

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 V _{DC} test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$0 < \pm 1 V$	$0 = 0.3 V$ (**)	$0 < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 -

(*) Tested with a 250 kHz square wave of 27 V_{pp} with 100ns rise and fall times through a $360 \pm 5 \Omega$ resistor.

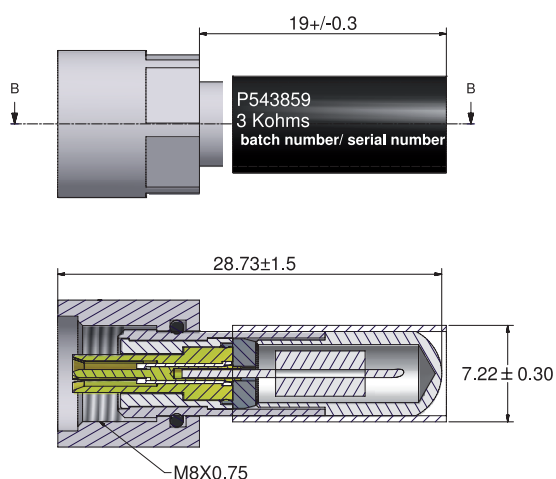
(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

ACC 3K Ω stub load

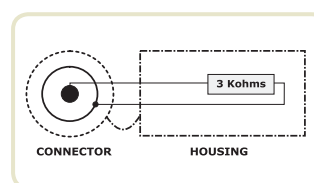
SPECIFICATIONS

MIL-STD-1553B
[STANAG 3838]
SAE AS 4115

ACC / A - D



DIMENSIONS in mm



**Electrical
scheme**

Rt = 3 k ohms \pm 1%

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Load resistance	3 K Ω \pm 1%	3 K Ω \pm 1%
Insulation resistance between : - inner conductors / shield	> 1 000 M Ω at 500 Vdc	> 1 000 M Ω at 500 Vdc
Shield continuity	-	< 20 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : between shield and inner conductors	500 Vrms	500 Vrms

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Mass of the terminator	7g maximum	7 g maximum
Vibration and shock resistance :		
- random vibrations	44 g rms, 8 hours in all directions	44 g rms, 8 hours in all directions
- gunfire vibrations	49 g rms	49 g rms
- mechanical shocks	30 g half sine, 3 ms	30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Sealing	-	IP55
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles of 1 hour
Good resistance to onboard fluids and to salt spray (up to 500 hours)		

MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)

Identification code

ACC

A

D

**AXON' CRIMPABLE
COUPLER**

A : AERONAUTICS VERSION
(for space applications, please contact us)

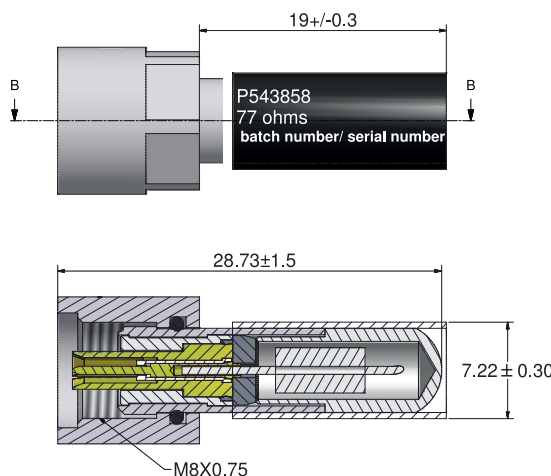
3K Ω STUB LOAD

ACC 77Ω terminator

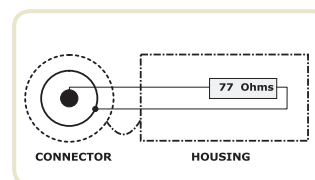
ACC / A - I

SPECIFICATIONS

MIL-STD-1553B
[STANAG 3838]
SAE AS 4115



DIMENSIONS in mm



Electrical
scheme

$R_t = 76.8 \text{ ohms} \pm 1\%$

Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Terminator resistance	$76.8 \Omega \pm 1\%$	$76.8 \Omega \pm 1\%$
Insulation resistance between : - inner conductors / shield	$> 1\,000 \text{ M}\Omega$ under 500 V _{DC}	$> 1\,000 \text{ M}\Omega$ under 500 V _{DC}
Shield continuity	-	$< 20 \text{ m}\Omega$ maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : between shield and inner conductors	500 V _{rms}	500 V _{rms}

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Mass of the terminator	7g maximum	7 g maximum
Vibration and shock resistance :		
- random vibrations	44 g rms, 8 hours in all directions	44 g rms, 8 hours in all directions
- gunfire vibrations	49 g rms	49 g rms
- mechanical shocks	30 g half sine, 3 ms	30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Sealing	-	IP55
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles of 1 hour
Good resistance to onboard fluids and to salt spray (up to 500 hours)		

MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)

Identification code

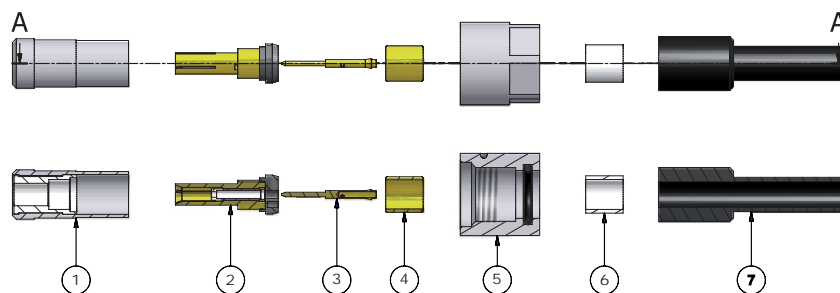
ACC	A	I
AXON' CRIMPABLE COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	77 Ω TERMINATOR

ACC plug connector

SPECIFICATIONS

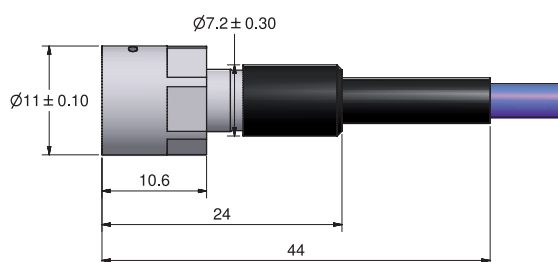
MIL-STD-1553B
[STANAG 3838]
SAE AS 4115

ACC / A - PG



- 1 - Connector body
- 2 - Intermediate contact
- 3 - Inner contact
- 4 - Ferrule for braid crimping
- 5 - Locking ring
- 6 - Spacer : insulation sleeve
- 7 - Strain relief

Connector sold in kit composed by 5 metallic pieces and 2 sleeves



Dimensions of the connector once wired

DIMENSIONS in mm

Identification code

ACC

AXON'
CRIMPABLE
COUPLER

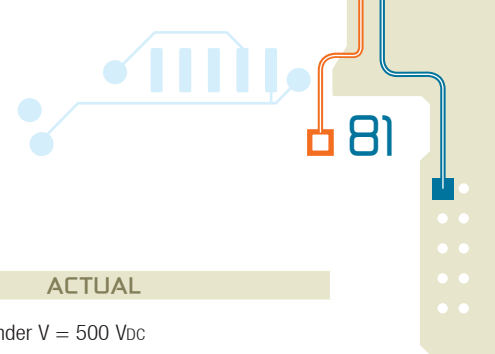
A

A : AERONAUTICS
VERSION
(for space applications, please contact us)

PG

PLUG CONNECTOR

ACC PLUG CONNECTOR WAS INITIALLY DESIGNED FOR TWINAX BUS 71 DATABUS CABLE BUT IS ALSO COMPATIBLE WITH OTHER REFERENCES. PLEASE CONSULT US FOR FURTHER INFORMATION



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Insulation resistance between : - inner conductors / shield	> 1 000 M Ω under V = 500 Vdc	> 1 000 M Ω under V = 500 Vdc
Shield continuity	-	< 20 m Ω maximum.
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : between shield and inner conductors	500 V rms	500 V rms

Mechanical and environmental characteristics

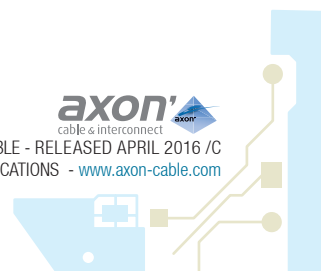
PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Mass of the connector	5 g maximum	5 g maximum
Vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g half sine, 3 ms	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars	11 mbars
Tensile strength of a mated branch	70 N (*) with twinax bus 71 databus cable	70 N (*) with twinax bus 71 databus cable
Sealing	-	IP55
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles of 1 hour
Good resistance to onboard fluids and to salt spray (up to 500 hours)		
MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)		
(*) the value of tensile strength depends on the cable construction (please consult us).		

Tooling used for crimping the connector on the cable

TYPE OF CRIMPING	CRIMPING TOOL	DIE
Central pin	M22520/2-01	(*)
Intermediate contact	M22520/5-01	(*)
Body	M22520/5-01	(*)

(*) Refers to the assembly instruction "CON-1553-GF-61-01"

ACC PLUG CONNECTOR WAS INITIALLY DESIGNED FOR TWINAX BUS 71 DATABUS CABLE.
PLEASE CONSULT US FOR COMPATIBILITY WITH OTHER CABLES

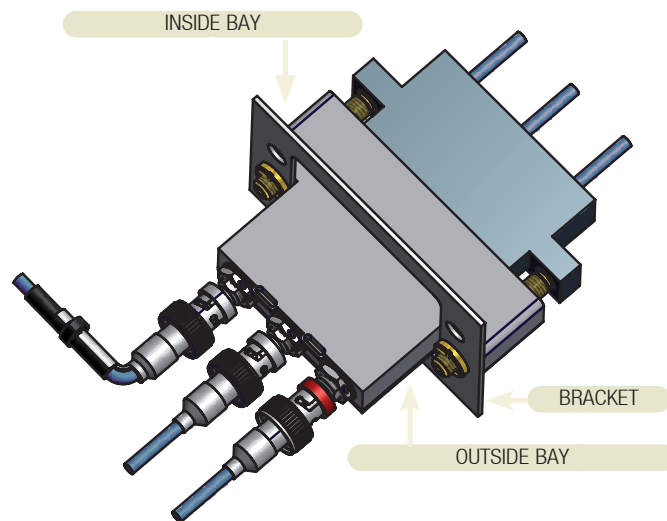


RACK couplers

AXON' also offers rack couplers which fit to the existing fixation system in electrical racks. All couplers are concentrated into a rack and the stubs are routed from the rack to the equipment. They are particularly well adapted to meet the requirements of aeronautics standard racks in civil and military aircrafts.

Advantages

- › Having all couplers in a same bay makes the maintenance and the repair of bus network easier.
- › The rack couplers are matable with EN 3545 connectors.
- › Couplers, connectors, cables and terminators are offered as standard off the shelf components that the customer can order in kit form.
- › AXON' has the expertise and the software to validate the network topology.



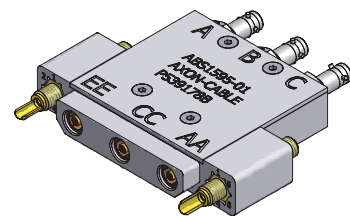
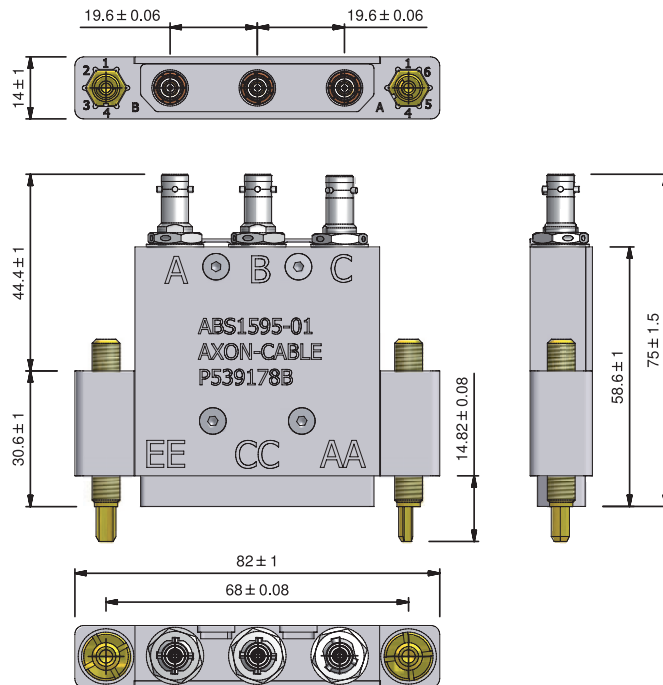
RACK COUPLER

4 way rack coupler

P 539178 B

SPECIFICATIONS

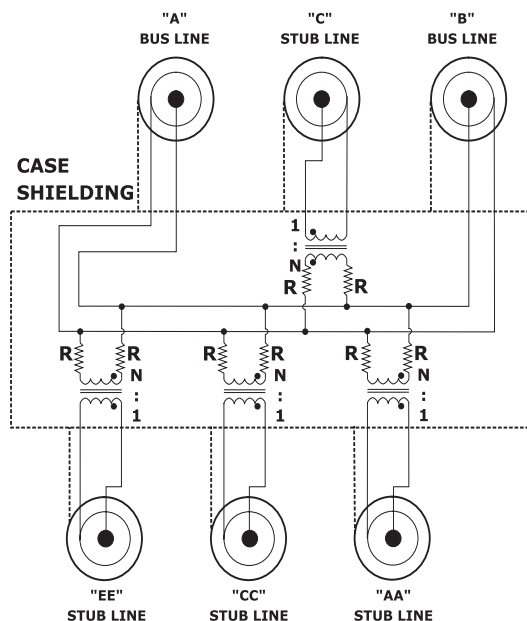
MIL-STD-1553B
SAE AS 4115



DIMENSIONS in mm

Electrical scheme

$N = 1.41 \pm 3\%$
R = fault protection resistor
 $R = 0.75 Z_0 = 57.6 \Omega \pm 1\%$



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	$77 \pm 7 \Omega$	$77 \pm 7 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance	> 750Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 150°C)	> 750Ω
Fault protection insulation resistors in series on each bus winding connection	$0.75 Z_o \pm 2 \%$	$57.6 \Omega \pm 1 \%$
Insulation resistance between : - bus line / stub line - inner conductors / shield	> 1000 M Ω > 1000 M Ω	> 1 000 M Ω at 250 Vdc > 1 000 M Ω at 500 Vdc
Shield continuity	< 50 m Ω	< 50 m Ω
Shield coverage	Connection 75 %	Connection 100 %
Dielectric withstanding strength : - between shield and inner conductors	500 V rms	500 V rms

(*) Impedance : seen from the stub when the bus line is loaded with Z_o at both sides of the coupler.

Mechanical and environmental characteristics

PARAMETERS	REQUIRED	ACTUAL
Operating temperature	-65°C to +150°C	-65°C to +150°C
Weight	< 140 g (without attachment system)	< 140 g
Axial extraction force	> 100 N	> 100 N
Excellent vibration and shock resistance : - random vibrations - mechanical shocks	10 g rms, 3 hours in all directions 50 g half sine, 11ms	10 g rms, 3 hours in all directions 50 g half sine, 11ms
Low pressure resistance	11 mbars	11 mbars
Life test	1000 hours at +127°C	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles	-65°C to +150°C, 10 cycles

IP54 sealing level allowing good resistance to onboard fluids and excellent resistance to salt spray.

Transformer characteristics

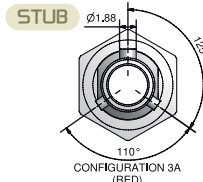
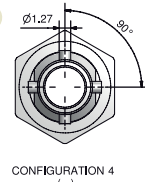
PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$0 < \pm 1 V$	$0 = 0.3 V$ (**)	$0 < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 -

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Connector types : AXON' ACB1 series

MATING INTERFACE	CONNECTOR TYPE (*)	CORRESPONDING KEYING
OUTSIDE BAY Bus line connector (output A and B)	Bayonet 3 lugs connector with socket intermediate contact - Mate with ACB1-PG-4-P-S or AMB/A-D-ACB1-PG-4-P / SEE PAGE 126	 
OUTSIDE BAY Stub line connector (output C)	Bayonet 4 lugs connector with socket intermediate contact - Mate with ACB1-PG-3A-P-S or AMB/A-R-ACB1-PG-3A-P / SEE PAGE 126	
INSIDE BAY Three stubs (output EE, CC and AA)	Mate with EN 3545-x-07-MX - cavities AA, CC, EE equipped with #8 triaxial contact	

(*) : Refers to the ACB1 specification to have detailed technical information and half mating connectors.

RELAY couplers

AXON' offers two kinds
of relay couplers :

- Inline relay switch coupler
(AMB/A-RE-A) :

its role is to commute
simultaneously one or two
bus lines to one or two
different bus lines with a
single command signal

- In-line relay couplers
(AMB/A-RE-C, AMB/A-RE-D) :

these have been developed
for applications which need
to allow for an automatic
disconnection of a number
of devices from the network
without affecting the other
remote terminals already

connected. This is the
case when a ground test
bench is connected to an
aircraft or in the case of

applications which need to
simultaneously disconnect
a group of devices

(a satellite or a rocket).

Advantages

- › Commuting to avoid mismatching :
the bus line terminators are maintained a 77 ohms while the network is intentionally cut at a predefined point of the system (AMB/A-RE-C)
- › Improved EMI performance :
high impedance resistive loads (3 Kohms) are connected to open stubs (AMB/A-RE-D).
- › Transmission of the signal without distortion.
- › Relay couplers are able to switch the signal to another line or to a particular device (AMB/A-RE-A).
- › Relay couplers can be connected to classic couplers with the help of splices or ACB1 connectors.



RELAY COUPLER

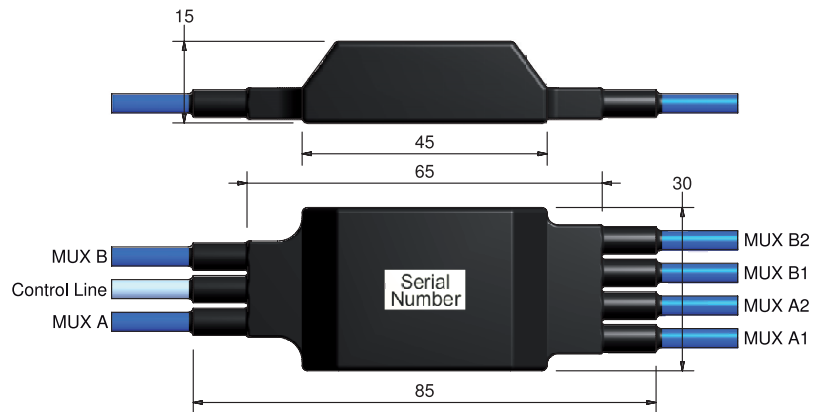
In-line switch relay coupler

SPECIFICATIONS

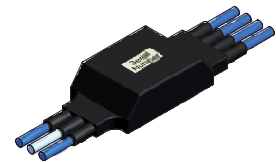
JN1161*
MIL-PRF-39016
MIL-R-39016/53
MIL-STD-810D

* JN1161
approval only concerns
AMB/A-RE-A-26.5
with cable 31
DDP reference :
DDP-J-403-A-0301.

AMB / A - RE - A - 26.5 - XX

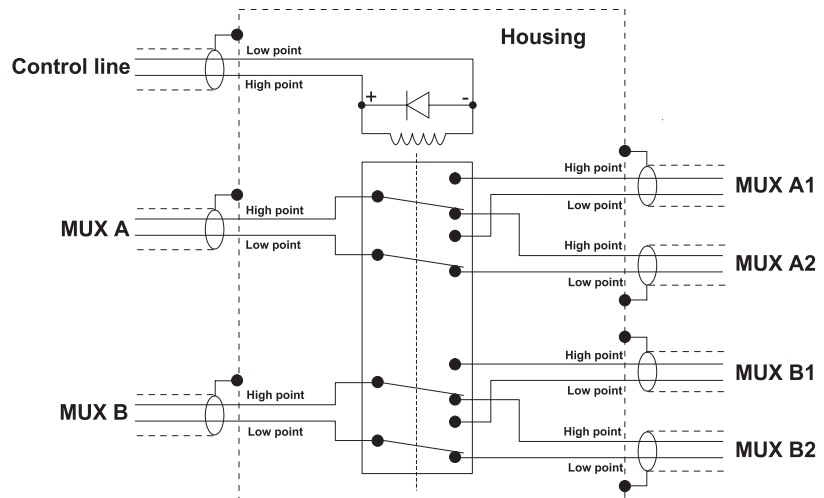


This specification defines an in-line relay used to switch two MIL-STD-1553 lines to 2 other lines (for instance nominal and redundant line)



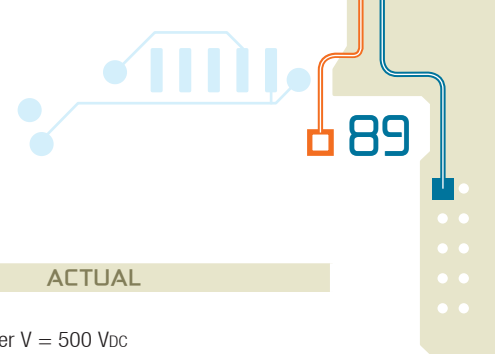
DIMENSIONS in mm

Electrical scheme



Identification code

AMB /	A	RE	A	26.5	XX
AXON' IN-LINE DATABUS SERIES	A : AERONAUTICS VERSION (for space applications, please contact us)	RELAY VERSION	FOUR POLE, DOUBLE THROW RELAY ABLE TO SWITCH 2 LINES TO 2 OTHER LINES	NOMINAL COIL VOLTAGE	CABLE REFERENCES (see cable specifications) 10 : TWINAX BUS AWG 24 SINGLE BRAID (SB) according to MIL-C-17 /176-00002 20 : TWINAX BUS AWG 24 SINGLE BRAID (SB) according to PR EN 3375-003 21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) according to PR EN 3375-004 22 : TWINAX BUS AWG 24 DOUBLE BRAID with high immunity tape (DB/HI) according to PR EN 3375-005 31 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) according to PAN 6421- JN 1161 70 : TWINAX BUS AWG 26 SINGLE BRAID (SB) 71 : TWINAX BUS AWG 26 DOUBLE BRAID (DB) according to ECS 0700 72 : TWINAX BUS AWG 26 DOUBLE BRAID with high immunity tape (DB/HI) Other cables on request.



Electrical characteristics

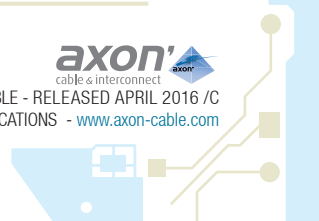
PARAMETERS	REQUIRED	ACTUAL
Insulation resistance between (initial) : - outer jacket / shield - inner wires / shield - line / line		> 100 M Ω under V = 500 Vdc > 100 M Ω under V = 500 Vdc > 100 M Ω under V = 500 Vdc
Shield continuity	-	50 m Ω maximum.
Shield coverage	Cable 90 % / Connection 75 %	Cable 90 % / Connection 100 %
Dielectric strength : (sea level) - between outer jacket / shield - between shield and inner wires - between line and line	- - -	V = 500 V rms V = 500 V rms V = 500 V rms

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +125°C	Excellent resistance to thermal stress
Weight (without cable) : 80 g nominal	Axial extraction force : > 50 N
Excellent vibration and shock resistance : - random vibration : - 27g rms, 2 hours in all directions (*) - 16.4 g rms, 1 hour in all directions	Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours). (*) ACCORDING TO MIL-STD-810D METHOD 514-3, FIGURE 514.3-26 WITH A LEVEL OF 0.70 g ² / Hz FOR ENDURANCE AND 0.20 g ² / Hz FOR FUNCTIONAL TEST

Relay characteristics

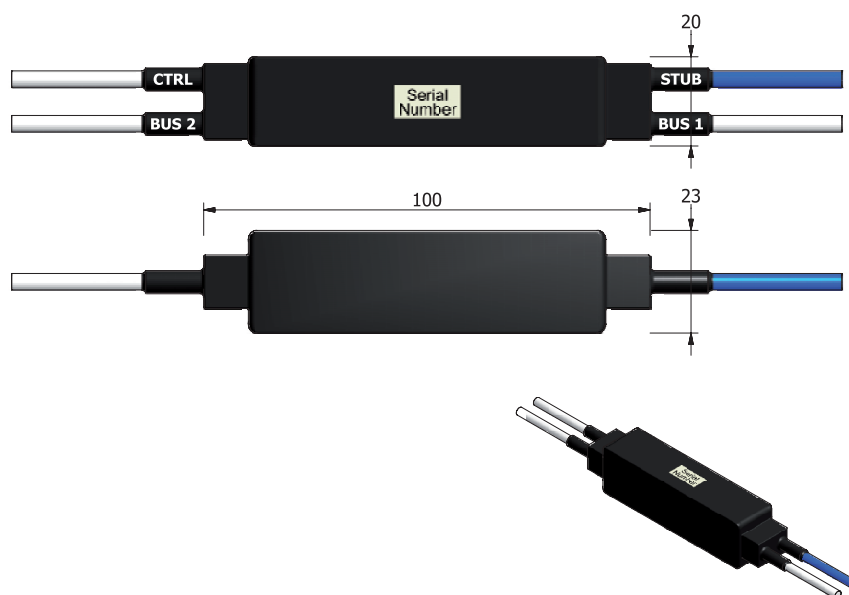
PARAMETERS	PARAMETERS
Four pole, double throw relay Qualified to MIL-R-39016/53	Coil dropout voltage : . 1.5 Vdc maximum at 25°C . 0.9 Vdc maximum from -65°C to +125°C
Coil operating voltage : . 26.5 Vdc nominal . 35 Vdc maximum	Operating time at nominal voltage (26.5 Vdc): 4 ms maximum Release time at nominal voltage (26.5 Vdc): 6 ms maximum
Coil resistance : 720 \pm 10% Ω at 25°C	Contact bounce : 2.0 ms maximum
Coil pickup voltage : . 13.5 Vdc maximum at 25°C . 18.0 Vdc maximum from -65°C to + 125°C	Contact stabilisation time : 2.5 ms maximum
Coil hold voltage : . 10.8 Vdc maximum at 25°C . 8.1 Vdc maximum from -65°C to + 125°C	Contact resistance (initial time state) : 50 m Ω maximum
	Mechanical life : 900 000 cycles minimum



SPECIFICATIONS

MIL-STD-1553B
MIL-R-39016/6
MIL-S-19500/429

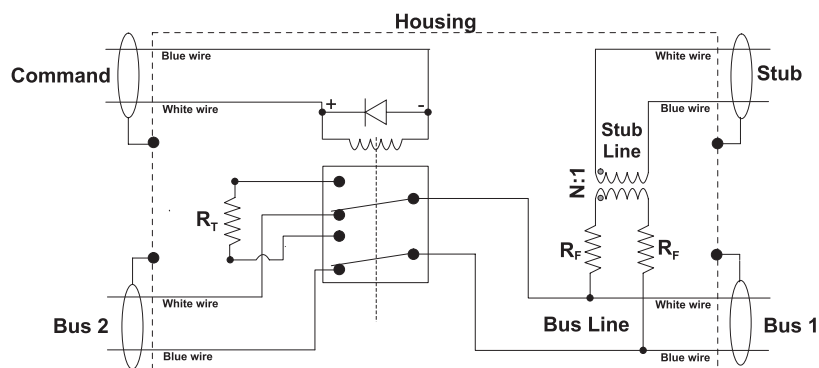
AMB / A - RE - C - 26.5 - XX



DIMENSIONS in mm

Electrical scheme

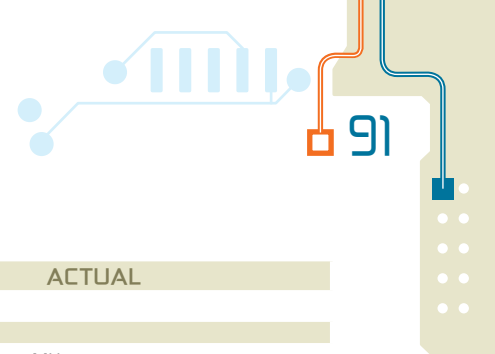
$N = 1.41 \pm 3\%$
 R_f = fault protection resistor
= $57.6 \Omega \pm 1\%$
 R_t = resistance terminator
= $76.8 \Omega \pm 1\%$



Identification code

AMB /	A	RE	C	26.5	XX
AXON' IN-LINE DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	RELAY VERSION	DOUBLE POLE DOUBLE THROW RELAY (DPDT) able to switch the «BUS» line to 77 Ω	NOMINAL COIL VOLTAGE	CABLE REFERENCES (see cable specifications) 10 : TWINAX BUS AWG 24 SINGLE BRAID (SB) according to MIL-C-17 /176-00002 20 : TWINAX BUS AWG 24 SINGLE BRAID (SB) according to PR EN 3375-003 21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) according to PR EN 3375-004 22 : TWINAX BUS AWG 24 DOUBLE BRAID with high immunity tape (DB/HI) according to PR EN 3375-005 31 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) according to PAN 6421 Other cables on request.

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate command and bus lines with a striped colour tape under transparent jacket or the extrusion of a colour jacket).
The same type of cable is used for bus lines and command lines.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Terminator impedance	$77 \pm 2 \Omega$	$77 \pm 1 \Omega$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance (control line un-energized)	> 3000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 125°C)	> 3000 Ω
Insulation resistance between : - outer jacket / shield - inner wires / shield - bus / stub - command line / other lines		> 1 000 M Ω under V = 500 Vdc > 1 000 M Ω under V = 500 Vdc > 1 000 M Ω under V = 250 Vdc > 1 000 M Ω under V = 500 Vdc
Shield continuity	-	10 m Ω maximum.
Shield coverage	Cable 90 % / Connection 75 %	Cable 90 % / Connection 100 %
Dielectric strength : (sea level) between outer jacket / shield between shield and inner wires	- -	V = 500 V rms V = 500 V rms

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +125°C	High resistance to on-board fluids (sealed case)
Weight : < 100 g	High resistance to salt spray (sealed case)
Excellent vibration and shock resistance : - sine vibration : 30 G's, 10 to 3000 Hz - Shocks : 100 g, 6 ms	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (***)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$0 < \pm 1 V$	$0 = 0.3 V$ (**)	$0 < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 -

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Relay characteristics

PARAMETERS	PARAMETERS
Double pole, double throw relay (DPDT) Qualified to MIL-R-39016/6	Coil dropout voltage : . 1.5 Vdc at 25°C . 1.0 Vdc at -65°C
Coil operating voltage : . 26.5 Vdc nominal . 32 Vdc maximum	Operating time : 4 ms maximum Release time : 4 ms maximum
Coil resistance : $700 \pm 10\%$ Ω at 25°C	Contact stabilisation time : 2.5 ms maximum
Coil nominal power : 1 W at 25°C	Contact resistance (initial time state) : 50 m Ω maximum
Coil pickup voltage : . 13.5 Vdc at 25°C . 18.0 Vdc at 125°C	Mechanical life expectancy : 50 million operations (*)
(*) refers to the MIL-PRF-39016 standard to have the relationship between the contact rating and the number of operations	Coil transient suppression means : MIL-S-19500 diode

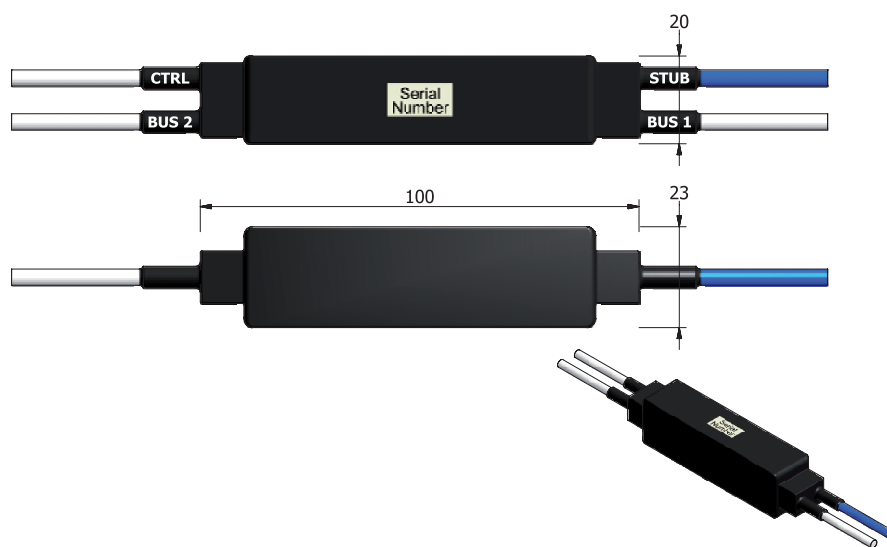
1 way in-line relay coupler

with DPDT relay to switch the bus line to 3 K ohms

SPECIFICATIONS

MIL-STD-1553B
MIL-R-39016/6
MIL-S-19500/429

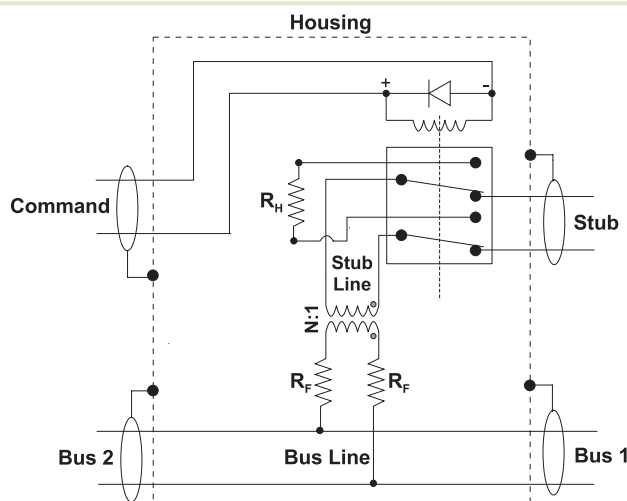
AMB / A - RE - D- 26.5 - XX



DIMENSIONS in mm

Electrical scheme

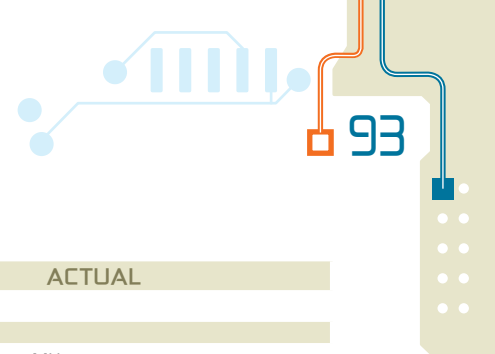
$N = 1.41 \pm 3\%$
 R_F = fault protection resistor
= $57.6 \Omega \pm 1\%$
 R_H = stub load resistance
= $3K \Omega \pm 2\%$



Identification code

AMB /	A	RE	D	26.5	XX
AXON' IN-LINE DATABUS COUPLER	A : AERONAUTICS VERSION (for space applications, please contact us)	RELAY VERSION	DOUBLE POLE DOUBLE THROW RELAY (DPDT) able to switch the «STUB» line to 3 K Ω	NOMINAL COIL VOLTAGE	CABLE REFERENCES (see cable specifications) 10 : TWINAX BUS AWG 24 SINGLE BRAID (SB) according to MIL-C-17 /176-00002 20 : TWINAX BUS AWG 24 SINGLE BRAID (SB) according to PR EN 3375-003 21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB) according to PR EN 3375-004 22 : TWINAX BUS AWG 24 DOUBLE BRAID with high immunity tape (DB/HI) according to PR EN 3375-005 Other cables on request.

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING
(possibility to differentiate bus and stub cable with a striped colour tape under the transparent jacket or the extrusion of a colour jacket).
The same type of cable is used for bus lines and command lines.



Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Load impedance		$3K \Omega \pm 2 \%$
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
CMR	< -45 dB mini at 1 MHz	< -45 dB mini at 1 MHz
Input impedance (control line un-energized)	> 3000 Ω in the frequency range (75 KHz to 1 MHz) and in the indicated temp. range (-65°C to 125°C)	> 3000 Ω
Insulation resistance between : - outer jacket / shield - inner wires / shield - bus / stub - command line / other lines		> 1 000 M Ω under V = 500 Vdc > 1 000 M Ω under V = 500 Vdc > 1 000 M Ω under V = 250 Vdc > 1 000 M Ω under V = 500 Vdc
Shield continuity	-	10 m Ω maximum.
Shield coverage	Cable 90 % / Connection 75 %	Cable 90 % / Connection 100 %
Dielectric strength : (sea level) between outer jacket / shield between shield and inner wires	- -	V = 500 V rms V = 500 V rms

Mechanical and environmental characteristics

PARAMETERS	PARAMETERS
Operating temperature : -65°C to +125°C	High resistance to on-board fluids (sealed case)
Weight : < 100 g	High resistance to salt spray (sealed case)
Excellent vibration and shock resistance : - sine vibration : 30 G's, 10 to 3000 Hz - Shocks : 100 g, 6 ms	MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)
Excellent resistance to thermal stress	

Transformer characteristics

PARAMETERS	REQUIRED VALUES (MIL-STD-1553 or SAE AS 4115)	NOMINAL VALUES OR AXON' REQUIRED VALUES	
		NOMINAL VALUES	REQUIRED BY AXON' / QUALITY PLAN
Curie point	-	-	Over 195°C
Turn ratio	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$	$\sqrt{2} \pm 3 \%$
Secondary DC resistance	$R_s < 5 \Omega$	$R_s = 2 \Omega$	$R_s < 2.5 \Omega$
Insulation resistance (winding to winding)	$R_i > 100 M\Omega$	-	$R_i > 1 000 M\Omega$ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	$ Z > 3 k\Omega$ on full temperature operating range	$ Z > 10 k\Omega$ at 25°C $ Z > 4.8 k\Omega$ at -65°C $ Z > 4 k\Omega$ at -85°C	$ Z \geq 9.4 k\Omega$ at 25°C (**)
Primary parallel inductance	-	$L_p = 22 mH$	$L_p \geq 20 mH$
Primary parallel capacitance	-	$C_p = 10 pF$	$C_p \leq 11.4 pF$
Inter-winding capacitance	-	$C_i = 45 pF$	-
Primary leakage inductance	-	-	$L_f \leq 6 \mu H$
Droop (*)	$D < 20 \%$	$D = 4.5 \%$ (**)	$D < 20 \%$
Overshoot and ringing (*)	$O < \pm 1 V$	$O = 0.3 V$ (**)	$O < \pm 1 V$

JN 1081 approved DDP-J-403-A-0222 -

(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a $360 \pm 5 \%$ Ω resistor.

(**) Average values taken during the JN 1081N qualification. - (***) 9.4 k Ω at 25°C guarantees 3 k Ω minimum from -65°C to 150°C

Relay characteristics

PARAMETERS	PARAMETERS
Double pole, double throw relay (DPDT) Qualified to MIL-R-39016/6	Coil dropout voltage : - 1.5 Vdc at 25°C - 1.0 Vdc at -65°C
Coil operating voltage : - 26.5 Vdc nominal - 32 Vdc maximum	Operating time : 4 ms maximum Release time : 4 ms maximum
Coil resistance : $700 \pm 10\%$ Ω at 25°C	Contact stabilisation time : 2.5 ms maximum
Coil nominal power : 1 W at 25°C	Contact resistance (initial time state) : 50 m Ω maximum
Coil pickup voltage : - 13.5 Vdc at 25°C - 18.0 Vdc at 125°C	Mechanical life expectancy : 50 million operations (*)
(*) refers to the MIL-PRF-39016 standard to have the relationship between the contact rating and the number of operations	Coil transient suppression means : MIL-S-19500 diode

ACB 1 databus connectors & contacts

AXON' have developed a triaxial connector called ACB1 (AXON' Connector Bus series 1) suitable for any type of twisted shielded AWG 24 pair cables. The connector is crimped on to cables and assemblies designed and manufactured to MIL-STD-1553.

Advantages

A single crimping tool M22520/5-01 with an AXON' die is required to assemble the connector :
no need for two crimp tools, one die and one or two positioning tools like most connectors.

- › ACB1 connectors make assembly easier.
- › ACB1 connectors reduce the time for mounting.
- › No potting is required.
- › ACB1 connectors and mating halves can integrate with either pin or socket contacts : the connector is mounted to your needs.
- › ACB1 connectors have gone through test sequences defined by the EN3716 standard.
- › The only connector approved to ESCC3401/079 by ESA.
(see the specifications for the variants available).

Versions

- › 3 types of connectors :
 - bulkhead jack series (BK),
 - Plug series (PG),
 - Jack series (JK).
- › For each type of connectors, there are 2 versions available :
 - bayonet (4 keyings),
 - threaded.



ACB1 DATABUS CONNECTOR

Pin and socket contact for ACB1 connectors

SPECIFICATIONS

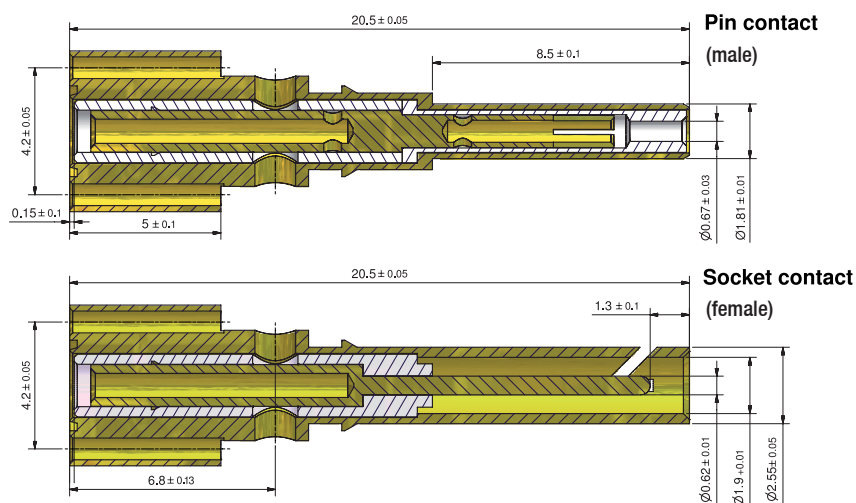
MIL-STD-1553B
Digital time division
command/ response
multiplex databus

MIL-STD-1344
General environmental tests

ASTM-B-196
Material for contact

MIL-G-45204 Class 1
Surface treatment
for contact

ACB1 SERIES



DIMENSIONS in mm

AXON's ACB1 series contact (pin or socket) are designed for databus applications. This contact is to be crimped on AWG24 databus cable and mounted on ACB1 connectors series.

Identification code

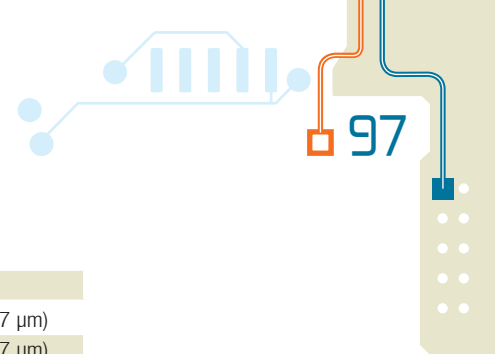
ACB1

X

AXON' CONNECTOR BUS TYPE 1

TYPE OF CONTACT

P : pin contact
S : socket contact



Materials and surface treatment

PARAMETERS	ACTUAL
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Insulator	PTFE

Electrical characteristics

PARAMETERS	ACTUAL
Insulation resistance between inner and outer contacts (sea level)	5 000 MΩ minimum at 500 Vdc
Dielectric withstanding voltage : - between inner and outer contacts (sea level)	900 V rms maximum
Contact resistance	8 mΩ maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C + 150°C
Socket contact weight	1.5 g maximum
Pin contact weight	1.5 g maximum
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20 g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75 g, 6 ms duration

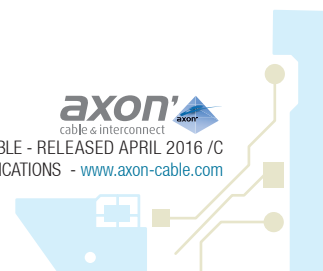
Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shielded pairs with an outer diameter ≤ 3.8 mm

Tooling used for crimping the contact on the cable

TYPE OF CRIMPING	CRIMPING TOOL	DIE
Contact	M 22520/5-01	AX-CD-02 or AX-CD-03 (*)

(*) Depends on the connector version (refers to technical data sheet)
Crimping according to assembly instructions «CON-1553-GF-27»



Databus connector

STRAIGHT &
THREADED
VERSION

SPECIFICATIONS

MIL-STD-1553B
Digital time division
command/ response
multiplex databus

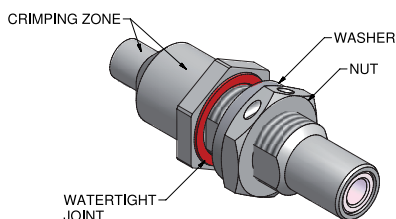
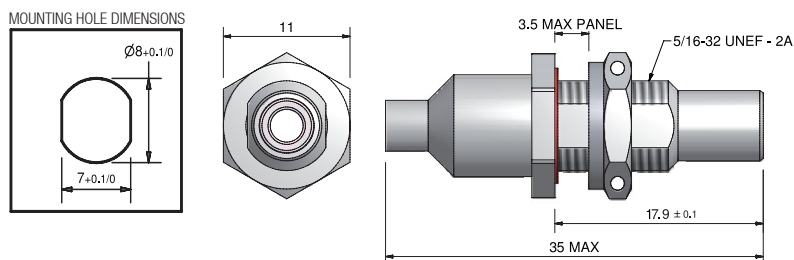
MIL-STD-1344
General environmental
tests

ASTM-B-733
or MIL-C-26074
Surface treatment for body
and ferrule

MIL-G-45204 Class 1
Surface treatment
for contact

MIL-I-23053/5
Insulation sleeving,
electrical heat shrinkable,
polyolefin
flexible crosslinked

ACB1 / BK - bulkhead jack series



DIMENSIONS in mm

AXON' ACB1 connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in threaded coupling or bayonet coupling 3A, 3B, 3C or 4 .

These connectors are to be crimped on AWG 24 databus cables.

Bulkhead jack are designed to be fixed by using a jam nut and a washer.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket),

and 4 additional pieces :

- > 1 nut,
- > 1 washer,
- > 1 watertight joint and
- > 1 heat shrinkable strain relief.

Identification code

ACB1

BK

01

X

Sxx

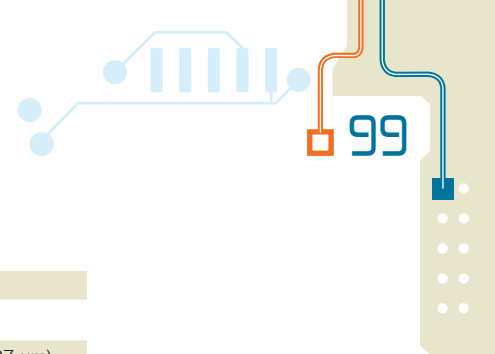
AXON'
CONNECTOR
BUS TYPE 1

TYPE OF
CONNECTOR
BK : bulkhead jack

TYPE OF
CONFIGURATION
1 : threaded

TYPE OF
CONTACT
P : pin contact
S : socket contact

TYPE OF FERRULE
S34 : straight for cable diameter < 3.4 mm
S38 : straight for cable diameter between 3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 ($5 \pm 1 \mu\text{m}$)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 ($>1.27 \mu\text{m}$)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 ($>1.27 \mu\text{m}$)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 ($5 \pm 1 \mu\text{m}$)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 m Ω maximum
Insulation resistance (sea level)	5 000 M Ω minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Bulkhead jack with ferrule and contact weight	9 g maximum
Thickness panel	3.5 mm maximum
Torque of fixing nut	2.0 \pm 0.1 N.m
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

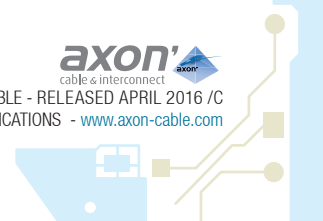
This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Straight versions	Contact	M 22520/5-01	AX-CD-02
	Straight ferrule	M 22520/5-01	AX-CD-02

Crimping according to assembly instructions «CON-1553-GF-27»



Databus connector

ELBOW &
THREADED
VERSION

SPECIFICATIONS

MIL-STD-1553B
Digital time division command/
response
multiplex databus

MIL-STD-1344
General environmental tests

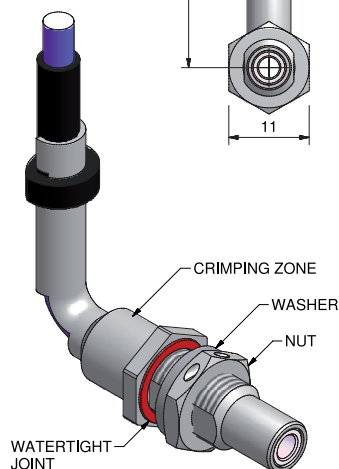
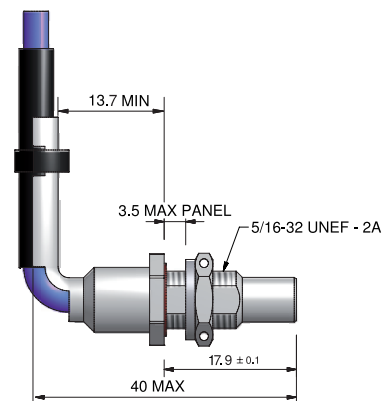
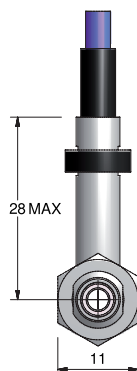
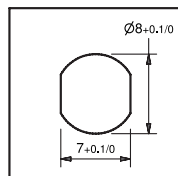
ASTM-B-733
or MIL-C-26074
Surface treatment for body
and ferrule

MIL-G-45204 Class 1
Surface treatment
for contact

MIL-I-23053/5
Insulation sleeving,
electrical heat shrinkable,
polyolefin
flexible crosslinked

ACB1 / BK - bulkhead jack series

MOUNTING HOLE DIMENSIONS



DIMENSIONS in mm

AXON' ACB1 connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in threaded coupling or bayonet coupling 3A, 3B, 3C or 4.

These connectors are to be crimped on AWG 24 databus cables.

Bulkhead jack are designed to be fixed by using a jam nut and a washer.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 elbow ferrule,
 - > 1 body,
 - > 1 insulator and
 - > 1 contact (pin or socket),
- and 5 additional pieces :
- > 1 nut,
 - > 1 washer,
 - > 1 watertight joint,
 - > 1 heat shrinkable strain relief.

Identification code

ACB1

BK

01

X

Rxx

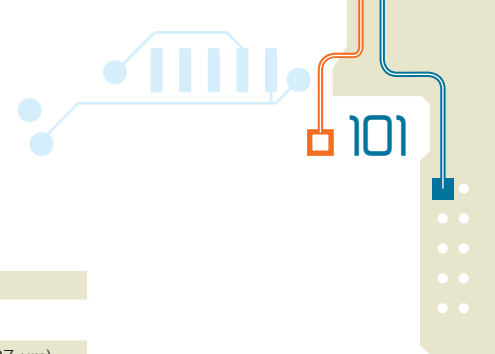
AXON'
CONNECTOR
BUS TYPE 1

TYPE OF
CONNECTOR
BK : bulkhead jack

TYPE OF
CONFIGURATION
1 : threaded

TYPE OF
CONTACT
P : pin contact
S : socket contact

TYPE OF FERRULE
R34 : right angle for cable
diameter < 3.4 mm
R38 : right angle for cable
diameter between
3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance (sea level)	5 000 MΩ minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if heat the shrinkable strain relief is used)
Bulkhead jack with ferrule and contact weight	11.3 g maximum
Thickness panel	3.5 mm maximum
Torque of fixing nut	2.0 ± 0.1 N.m
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

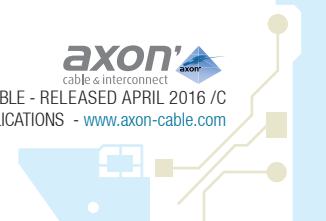
PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Swept elbow connectors	Contact	M 22520/5-01	AX-CD-03
	Swept elbow ferrule	M 22520/5-01	AX-CD-03

Crimping according to assembly instructions «CON-1553-GF-27»

A tie-wrap or a lacing lane can be used to maintain the cable onto the ferrule. These items can be provided upon request



Databus connector

STRAIGHT
& BAYONET
VERSION

SPECIFICATIONS

MIL-STD-1553B
Digital time division
command/ response
multiplex databus

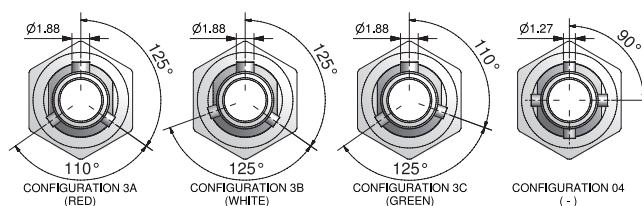
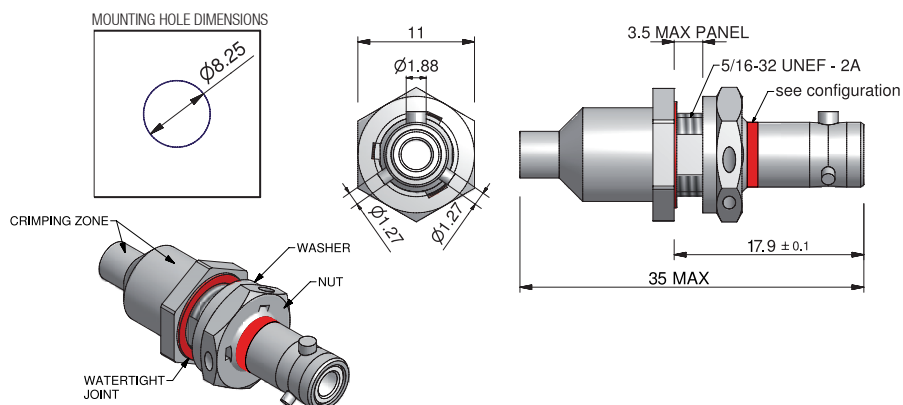
MIL-STD-1344
General environmental tests

ASTM-B-733
or MIL-C-26074
Surface treatment for body
and ferrule

MIL-G-45204 Class 1
Surface treatment
for contact

MIL-I-23053/5
Insulation sleeving,
electrical heat shrinkable,
polyolefin
flexible crosslinked

ACB1 / BK - bulkhead jack series



DIMENSIONS in mm

AXON' ACB1 connectors series is specifically designed for MIL-STD-1553 B databus application. Available in bayonet coupling 3A, 3B, 3C or 4. These connectors are to be crimped on AWG 24 databus cables.

The bulkhead jacks are designed to be fixed by using a jam nut and a washer.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket),

and 4 additional pieces :

- > 1 nut,
- > 1 washer,
- > 1 watertight joint and
- > 1 heat shrinkable strain relief.

Identification code

ACB1

BK

XX

X

Sxx

AXON'
CONNECTOR
BUS TYPE 1

TYPE OF
CONNECTOR
BK : bulkhead jack

TYPE OF
CONFIGURATION
3A : config 3A / RED
3B : config 3B / WHITE
3C : config 3C / GREEN
4 : config 4 / -

TYPE OF
CONTACT
P : pin contact
S : socket contact

TYPE OF FERRULE
S34 : straight for cable diameter < 3.4 mm
S38 : straight for cable diameter between 3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance (sea level)	5 000 MΩ minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Bulkhead jack with ferrule and contact weight	9 g maximum
Thickness panel	3.5 mm maximum
Torque of fixing nut	2.0 ± 0.1 N.m
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

This connector will accommodate the following AXON' contacts. See technical data sheets

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Straight versions	Contact	M 22520/5-01	AX-CD-02
	Straight ferrule	M 22520/5-01	AX-CD-02

Crimping according to assembly instructions «CON-1553-GF-27»



Databus connector

ELBOW &
BAYONET
VERSION

SPECIFICATIONS

MIL-STD-1553B
Digital time division
command/ response
multiplex databus

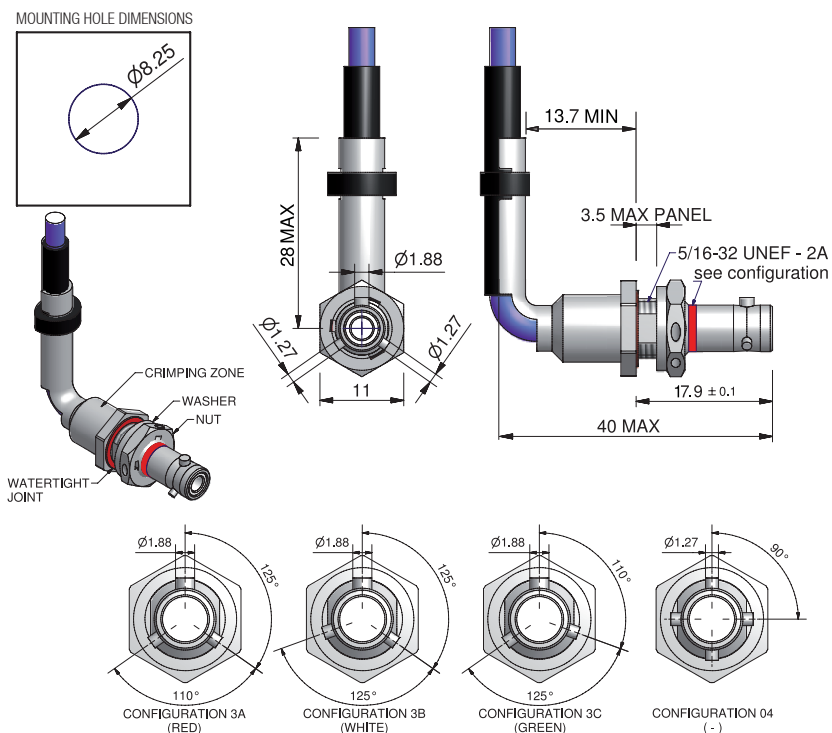
MIL-STD-1344
General environmental tests

ASTM-B-733
or MIL-C-26074
Surface treatment for body
and ferrule

MIL-G-45204 Class 1
Surface treatment
for contact

MIL-I-23053/5
Insulation sleeving,
electrical heat shrinkable,
polyolefin flexible
crosslinked

ACB1 / BK - bulkhead jack series



DIMENSIONS in mm

AXON' ACB1 connectors series is specifically designed for MIL-STD-1553 B databus application.
Available in bayonet coupling 3A, 3B, 3C or 4.
These connectors are to be crimped on AWG 24 databus cables.
The bulkhead jacks are designed to be fixed by using a jam nut and a washer.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 ferrule,
 - > 1 body,
 - > 1 insulator and
 - > 1 contact (pin or socket),
- and 4 additional pieces :
- > 1 nut,
 - > 1 washer,
 - > 1 watertight joint and
 - > 1 heat shrinkable strain relief.

Identification code

ACB1

BK

XX

X

Rxx

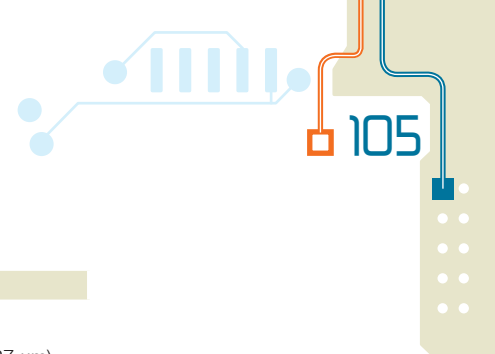
AXON'
CONNECTOR
BUS TYPE 1

TYPE OF
CONNECTOR
BK : bulkhead jack

TYPE OF
CONFIGURATION
3A : config 3A / RED
3B : config 3B / WHITE
3C : config 3C / GREEN
4 : config 4 / -

TYPE OF
CONTACT
P : pin contact
S : socket contact

TYPE OF FERRULE
R34 : right angle for cable diameter < 3.4 mm
R38 : right angle for cable diameter between 3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance (sea level)	5 000 MΩ minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Bulkhead jack with ferrule and contact weight	11.3 g maximum
Thickness panel	3.5 mm maximum
Torque of fixing nut	2.0 ± 0.1 N.m
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

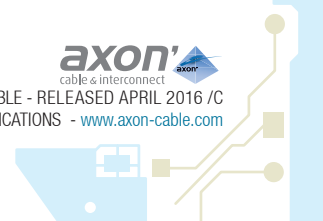
PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Swept elbow connectors	Contact	M 22520/5-01	AX-CD-03
	Swept elbow ferrule	M 22520/5-01	AX-CD-03

Crimping according to assembly instructions «CON-1553-GF-27»

A tie-wrap or a lacing lane can be used to maintain the cable onto the ferrule. These items can be provided upon request



Databus connector

STRAIGHT &
THREADED
VERSION

ACB1 / PG - Plug series

SPECIFICATIONS

MIL-STD-1553B

Digital time division command/
response
multiplex databus

MIL-STD-1344

General environmental tests

ASTM-B-733

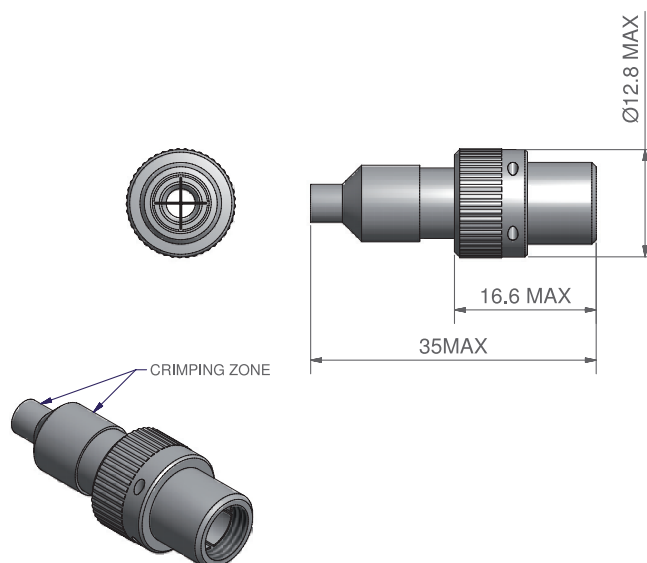
or MIL-C-26074

Surface treatment for body
and ferrule

MIL-G-45204 Class 1

Surface treatment
for contact

MIL-I-23053/5

Insulation sleeving,
electrical heat shrinkable,
polyolefin
flexible crosslinked

DIMENSIONS in mm

AXON' ACB1 connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in threaded coupling or bayonet coupling 3A, 3B, 3C or 4.

These connectors are to be crimped on AWG 24 databus cables.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket),
and 1 additional piece :
- > 1 heat shrinkable strain relief.

Identification code

ACB1

AXON'
CONNECTOR
BUS TYPE 1

PG

TYPE OF
CONNECTOR
PG : plug

01

TYPE OF
CONFIGURATION
1 : threaded

X

TYPE OF
CONTACT
P : pin contact
S : socket contact

Sxx

TYPE OF FERRULE
S34 : straight for cable diameter < 3.4 mm
S38 : straight for cable diameter between 3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 ($5 \pm 1 \mu\text{m}$)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 ($>1.27 \mu\text{m}$)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 ($>1.27 \mu\text{m}$)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 ($5 \pm 1 \mu\text{m}$)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 m Ω maximum
Insulation resistance (sea level)	5 000 M Ω minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Plug with ferrule and contact weight	13 g maximum
Mating torque	1.00 to 1.25 N.m
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Straight versions	Contact	M 22520/5-01	AX-CD-02
	Straight ferrule	M 22520/5-01	AX-CD-02

Crimping according to assembly instructions «CON-1553-GF-27»

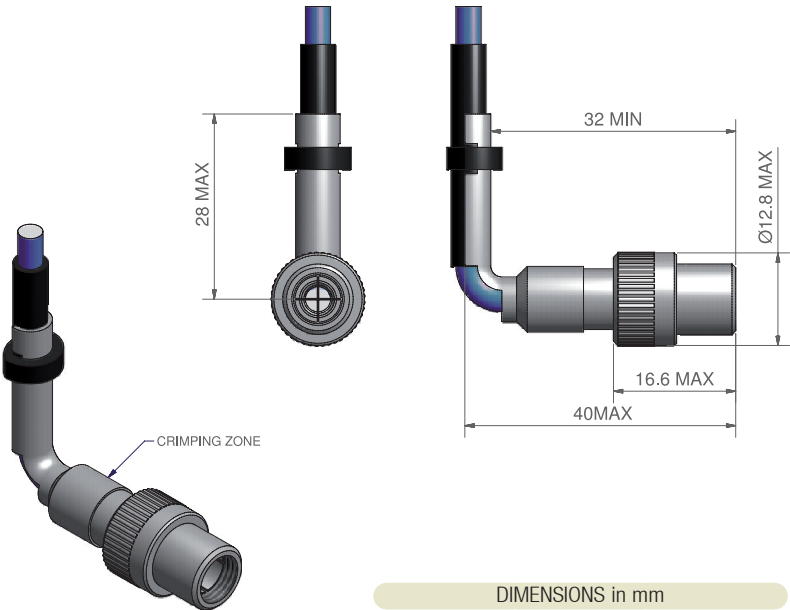
Databus connector

ELBOW & THREADED VERSION

ACB1 / PG - Plug series

SPECIFICATIONS

- MIL-STD-1553B
Digital time division command/response
multiplex databus
- MIL-STD-1344
General environmental tests
- ASTM-B-733
or MIL-C-26074
Surface treatment for body and ferrule
- MIL-G-45204 Class 1
Surface treatment for contact
- MIL-I-23053/5
Insulation sleeving, electrical heat shrinkable, polyolefin flexible crosslinked



DIMENSIONS in mm

AXON' ACB1 connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in threaded coupling or bayonet coupling 3A, 3B, 3C or 4.

These connectors are to be crimped on AWG 24 databus cables.

CHARACTERISTICS

- The connector is composed by 4 main pieces :
- > 1 elbow ferrule,
 - > 1 body,
 - > 1 insulator and
 - > 1 contact (pin or socket), and 1 additional piece :
 - > 1 heat shrinkable strain relief.

Identification code

ACB1	PG	01	X	Rxx
AXON' CONNECTOR BUS TYPE 1	TYPE OF CONNECTOR PG : plug	TYPE OF CONFIGURATION 1 : threaded	TYPE OF CONTACT P : pin contact S : socket contact	TYPE OF FERRULE R34 : right angle for cable diameter < 3.4 mm R38 : right angle for cable diameter between 3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance (sea level)	5 000 MΩ minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Plug with ferrule and contact weight	15,3 g maximum
Mating torque	1.00 to 1.25 N.m
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Swept elbow connectors	Contact	M 22520/5-01	AX-CD-03
	Swept elbow ferrule	M 22520/5-01	AX-CD-03

Crimping according to assembly instructions «CON-1553-GF-27»

A tie-wrap or a lacing lane can be used to maintain the cable onto the ferrule. These items can be provided upon request

Databus connector

STRAIGHT
& BAYONET
VERSION

ACB1 / PG - Plug series

SPECIFICATIONS

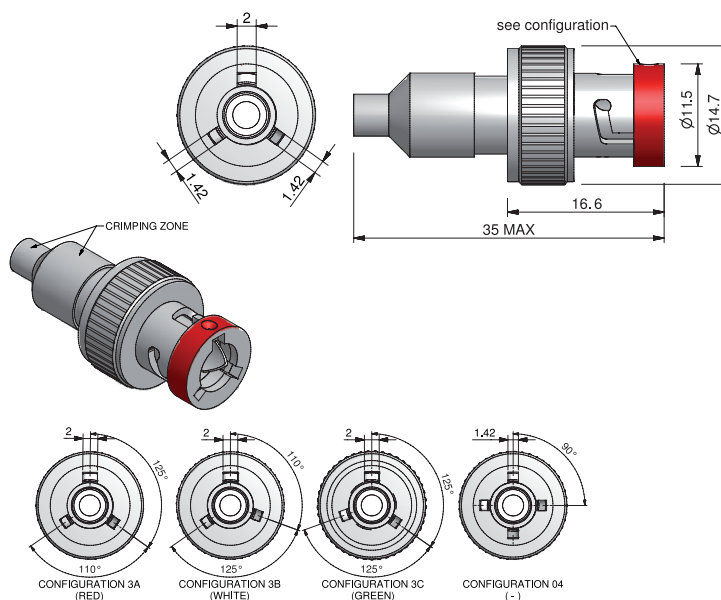
MIL-STD-1553B
Digital time division
command/ response
multiplex databus

MIL-STD-1344
General environmental tests

ASTM-B-733
or MIL-C-26074
Surface treatment for body
and ferrule

MIL-G-45204 Class 1
Surface treatment
for contact

MIL-I-23053/5
Insulation sleeving, electrical
heat shrinkable, polyolefin
flexible crosslinked



DIMENSIONS in mm

AXON' ACB1 connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in bayonet coupling 3A, 3B, 3C or 4.

These connectors are to be crimped on AWG 24 databus cables.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket),
and 1 additional piece :
- > 1 heat shrinkable strain relief.

Identification code

ACB1

PG

XX

X

Sxx

AXON'
CONNECTOR
BUS TYPE 1

TYPE OF
CONNECTOR
PG : plug

TYPE OF
CONFIGURATION
3A : config 3A / RED
3B : config 3B / WHITE
3C : config 3C / GREEN
4 : config 4 / -

TYPE OF
CONTACT
P : pin contact
S : socket contact

TYPE OF FERRULE
S34 : straight for cable diameter < 3.4 mm
S38 : straight for cable diameter between 3.4
and 3.8 mm

Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 ($5 \pm 1 \mu\text{m}$)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 ($>1.27 \mu\text{m}$)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 ($>1.27 \mu\text{m}$)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 ($5 \pm 1 \mu\text{m}$)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 m Ω maximum
Insulation resistance (sea level)	5 000 M Ω minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Plug with ferrule and contact weight	13.5 g maximum
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter $< 3.8 \text{ mm}$

Contact

This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Straight versions	Contact	M 22520/5-01	AX-CD-02
	Straight ferrule	M 22520/5-01	AX-CD-02

Crimping according to assembly instructions «CON-1553-GF-27»

Databus connector

ELBOW &
BAYONET
VERSION

ACB1 / PG - Plug series

SPECIFICATIONS

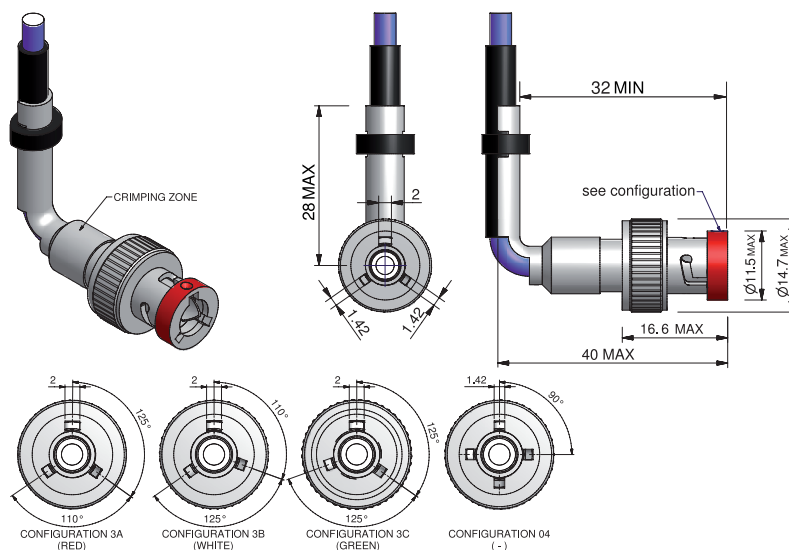
MIL-STD-1553B
Digital time division
command/ response
multiplex databus

MIL-STD-1344
General environmental tests

ASTM-B-733
or MIL-C-26074
Surface treatment for body
and ferrule

MIL-G-45204 Class 1
Surface treatment
for contact

MIL-L-23053/5
Insulation sleeving,
electrical heat shrinkable,
polyolefin
flexible crosslinked



DIMENSIONS in mm

AXON' ACB1 connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in bayonet coupling 3A, 3B, 3C or 4.

These connectors are to be crimped on AWG 24 databus cables.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket), and 1 additional piece :
- > 1 heat shrinkable strain relief.

Identification code

ACB1

PG

XX

X

Rxx

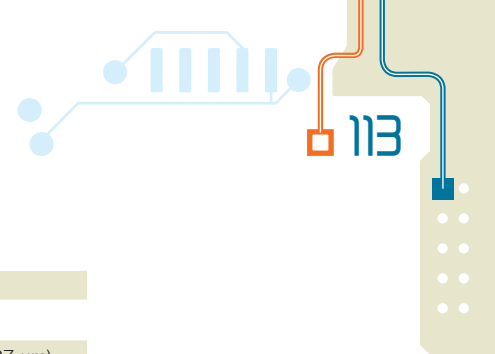
AXON'
CONNECTOR
BUS TYPE 1

TYPE OF
CONNECTOR
PG : Plug

TYPE OF
CONFIGURATION
3A : config 3A / RED
3B : config 3B / WHITE
3C : config 3C / GREEN
4 : config 4 / -

TYPE OF
CONTACT
P : pin contact
S : socket contact

TYPE OF FERRULE
R34 : right angle for cable diameter < 3.4 mm
R38 : right angle for cable diameter between 3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance (sea level)	5 000 MΩ minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Plug with ferrule and contact weight	15.8 g maximum
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

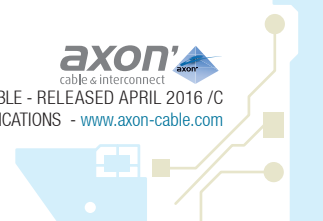
This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Swept elbow connectors	Contact	M 22520/5-01	AX-CD-03
	Swept elbow ferrule	M 22520/5-01	AX-CD-03

Crimping according to assembly instructions «CON-1553-GF-27»



Databus connector

STRAIGHT &
THREADED
VERSION

ACB1 / JK - Jack series

SPECIFICATIONS

MIL-STD-1553B

Digital time division command/
response
multiplex databus

MIL-STD-1344

General environmental tests

ASTM-B-733

or MIL-C-26074

Surface treatment for body
and ferrule

MIL-G-45204 Class 1

Surface treatment
for contact

MIL-I-23053/5

Insulation sleeving,
electrical heat
shrinkable, polyolefin
flexible crosslinked

Pitch of straight knurling 1mm

5/16-32 UNEF - 2A

 $\varnothing 9 \pm 0.1$

35 MAX

CRIMPING ZONE

DIMENSIONS in mm

AXON' ACB1 jack threaded connectors series
is specifically designed for MIL-STD-1553 B
databus application.Available in threaded coupling 3A, 3B, 3C
or 4.These connectors are to be crimped on
AWG 24 databus cables.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket),
and 1 additional piece :
- > 1 heat shrinkable strain relief.

Identification code

ACB1

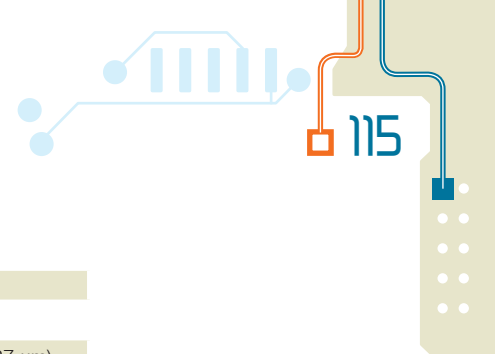
JK

01

X

Sxx

AXON'
CONNECTOR
BUS TYPE 1TYPE OF
CONNECTOR
JK : jackTYPE OF
CONFIGURATION
1 : threadedTYPE OF
CONTACT
P : pin contact
S : socket contactTYPE OF FERRULE
S34 : straight for cable diameter < 3.4 mm
S38 : straight for cable diameter between 3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance (sea level) - shield	5 000 MΩ minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Jack with ferrule and contact weight	7.5 g maximum
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75 g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

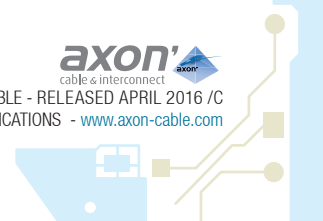
This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Straight versions	Contact	M 22520/5-01	AX-CD-02
	Straight ferrule	M 22520/5-01	AX-CD-02

Crimping according to assembly instructions «CON-1553-GF-27»



Databus connector

ELBOW &
THREADED
VERSION

ACB1 / JK - Jack series

SPECIFICATIONS

MIL-STD-1553B

Digital time division command/
response
multiplex databus

MIL-STD-1344

General environmental tests

ASTM-B-733

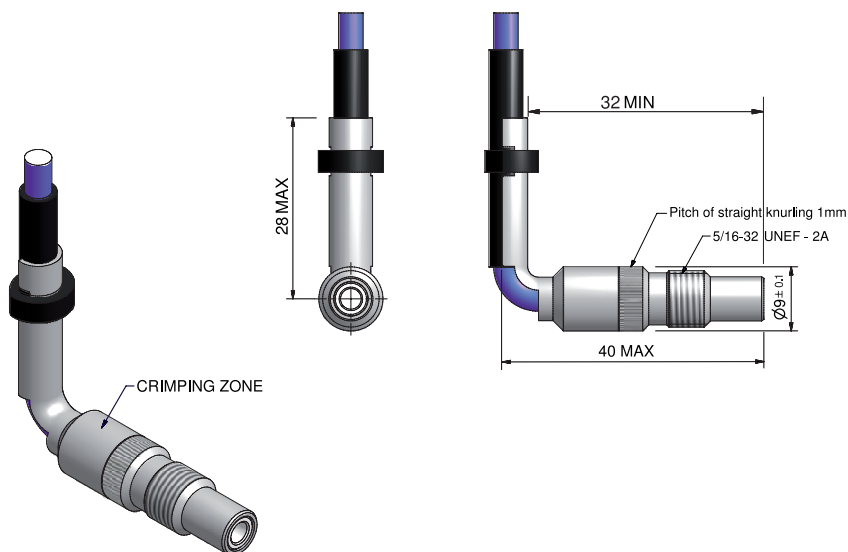
or MIL-C-26074

Surface treatment for body
and ferrule

MIL-G-45204 Class 1

Surface treatment
for contact

MIL-I-23053/5

Insulation sleeving,
electrical heat shrinkable,
polyolefin
flexible crosslinked

DIMENSIONS in mm

AXON' ACB1 jack threaded connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in threaded coupling or bayonet coupling 3A, 3B, 3C or 4.

These connectors are to be crimped on AWG 24 databus cables.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 elbow ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket),
- and 2 additional pieces :
- > 1 heat shrinkable strain relief.

Identification code

ACB1

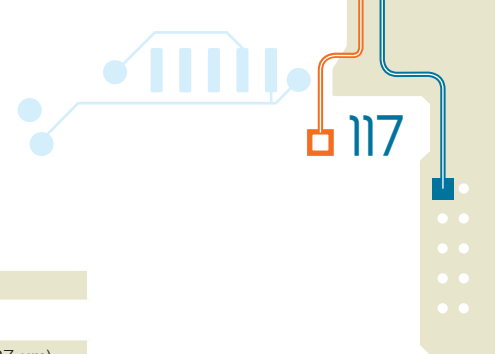
JK

01

X

Rxx

AXON'
CONNECTOR
BUS TYPE 1TYPE OF
CONNECTOR
JK : jackTYPE OF
CONFIGURATION
1 : threadedTYPE OF
CONTACT
P : pin contact
S : socket contactTYPE OF FERRULE
R34 : right angle for cable
diameter < 3.4 mm
R38 : right angle for cable
diameter between
3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance (sea level) - shield	5 000 MΩ minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Jack with ferrule and contact weight	9,8 g maximum
Salt spray	500 hours
Durability (mounting / dismantling)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

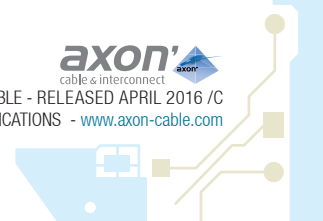
This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Swept elbow connectors	Contact	M 22520/5-01	AX-CD-03
	Swept elbow ferrule	M 22520/5-01	AX-CD-03

Crimping according to assembly instructions «CON-1553-GF-27»



Databus connector

STRAIGHT
& BAYONET
VERSION

ACB1 / JK - Jack series

SPECIFICATIONS

MIL-STD-1553B

Digital time division command/
response
multiplex databus

MIL-STD-1344

General environmental tests

ASTM-B-733

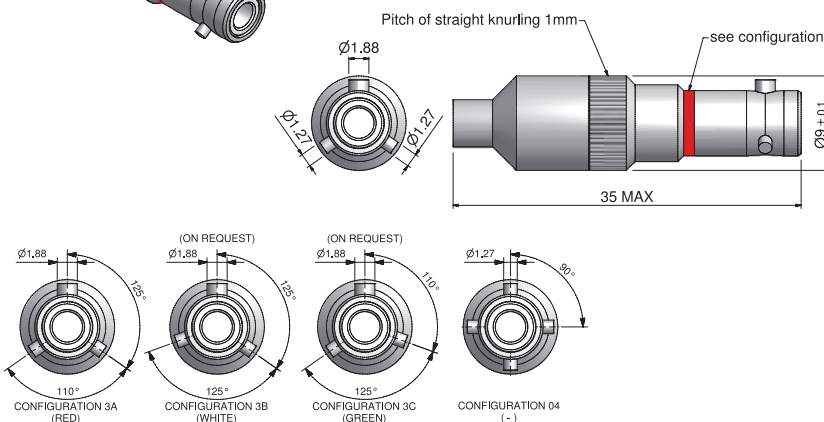
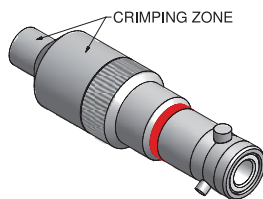
or MIL-C-26074

Surface treatment for body
and ferrule

MIL-G-45204 Class 1

Surface treatment
for contact

MIL-L-23053/5

Insulation sleeving,
electrical heat shrinkable,
polyolefin
flexible crosslinked

DIMENSIONS in mm

AXON' ACB1 jack bayonet connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in bayonet coupling or bayonet coupling 3A, 3B, 3C or 4.

These connectors are to be crimped on AWG 24 databus cables.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket),
- and 1 additional piece :
- > 1 heat shrinkable strain relief.

Identification code

ACB1

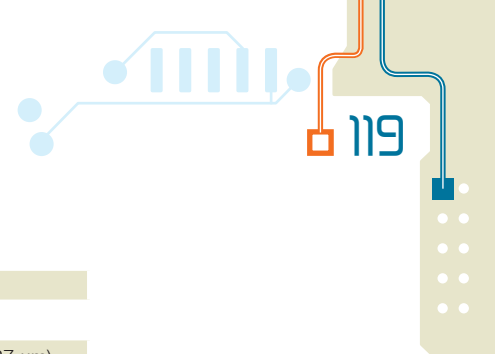
JK

XX

X

Sxx

AXON'
CONNECTOR
BUS TYPE 1TYPE OF
CONNECTOR
JK : jackTYPE OF
CONFIGURATION
3A : config 3A / RED
3B : config 3B / WHITE
3C : config 3C / GREEN
4 : config 4 / -TYPE OF
CONTACT
P : pin contact
S : socket contactTYPE OF FERRULE
S34 : straight for cable diameter < 3.4 mm
S38 : straight for cable diameter between 3.4
and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 ($5 \pm 1 \mu\text{m}$)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 ($>1.27 \mu\text{m}$)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 ($>1.27 \mu\text{m}$)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 ($5 \pm 1 \mu\text{m}$)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 m Ω maximum
Insulation resistance (sea level)	5 000 M Ω minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Jack with ferrule and contact weight	7.5 g maximum
Salt spray	500 hours
Durability (mounting / dismounting)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter $\leq 3.8 \text{ mm}$

Contact

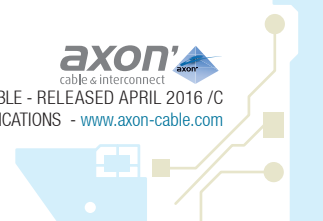
This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Straight versions	Contact	M 22520/5-01	AX-CD-02
	Straight ferrule	M 22520/5-01	AX-CD-02

Crimping according to assembly instructions «CON-1553-GF-27»



Databus connector

ELBOW &
BAYONET
VERSION

ACB1 / JK - Jack series

SPECIFICATIONS

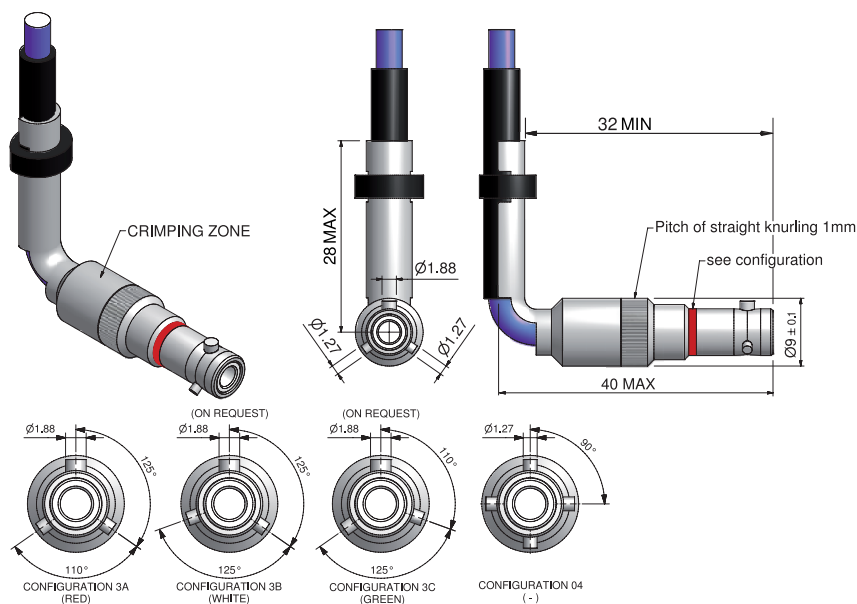
MIL-STD-1553B
Digital time division command/
response
multiplex databus

MIL-STD-1344
General environmental tests

ASTM-B-733
or MIL-C-26074
Surface treatment for body
and ferrule

MIL-G-45204 Class 1
Surface treatment
for contact

MIL-I-23053/5
Insulation sleeving,
electrical heat shrinkable,
polyolefin
flexible crosslinked



DIMENSIONS in mm

AXON' ACB1 jack bayonet connectors series is specifically designed for MIL-STD-1553 B databus application.

Available in bayonet coupling or bayonet coupling 3A, 3B, 3C or 4.

These connectors are to be crimped on AWG 24 databus cables.

CHARACTERISTICS

The connector is composed by 4 main pieces :

- > 1 elbow ferrule,
- > 1 body,
- > 1 insulator and
- > 1 contact (pin or socket),
- and 2 additional pieces :
- > 1 heat shrinkable strain relief.

Identification code

ACB1

JK

XX

X

Rxx

AXON'
CONNECTOR
BUS TYPE 1

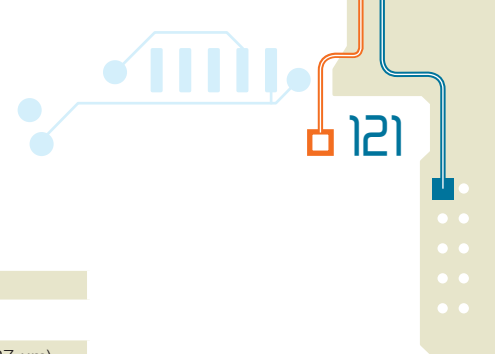
TYPE OF
CONNECTOR
JK : jack

TYPE OF
CONFIGURATION

3A : config 3A / RED
3B : config 3B / WHITE (on request)
3C : config 3C / GREEN (on request)
4 : config 4 / -

TYPE OF
CONTACT
P : pin contact
S : socket contact

TYPE OF FERRULE
R34 : right angle for cable
diameter < 3.4 mm
R38 : right angle for cable
diameter between
3.4 and 3.8 mm



Materials and surface treatment

PARTS	ACTUAL
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Socket contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Pin contact	Copper alloy / gold plating in accordance with MIL-G-45204 CLASS 1 (>1.27 µm)
Ferrule	Copper alloy / Electroless nickel plating according to ASTM-B-733 (5 ± 1 µm)
Insulator	PTFE
Shrinkable strain relief	Polyolefin flexible crosslinked in accordance with MIL-I-23053/5

Electrical characteristics

PARAMETERS	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance (sea level)	5 000 MΩ minimum at 500 Vdc
Voltage strength (sea level)	900 V rms maximum
Operating voltage (sea level to 30000 m)	200 V rms maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C +150°C (-65°C +125°C if the heat shrinkable strain relief is used)
Jack with ferrule and contact weight	9,8 g maximum
Salt spray	500 hours
Durability (mounting / dismantling)	500 cycles
Vibration	MIL-STD-1344 method 2005, test condition IV 10-2000Hz 20g peak level
Shock	MIL-STD-1344 method 2004, test condition B, Half sine, 75g, 6 ms duration

Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shield pair with an outer diameter < 3.8 mm

Contact

This connector will accommodate the following AXON' contacts. See technical data sheets / (see page 97).

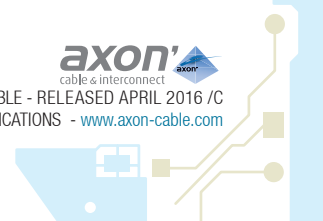
PART NUMBER	DESCRIPTION
ACB1 / P	Pin contact (male)
ACB1 / S	Socket contact (female)

Tooling used for crimping the connector on the cable

TYPE OF CONNECTOR	TYPE OF CRIMPING	CRIMPING TOOL	DIE
Swept elbow connectors	Contact	M 22520/5-01	AX-CD-03
	Swept elbow ferrule	M 22520/5-01	AX-CD-03

Crimping according to assembly instructions «CON-1553-GF-27»

A tie-wrap or a lacing lane can be used to maintain the cable onto the ferrule. These items can be provided upon request



Terminators

In-line databus terminator identification code

AMB/ A - I - XX - XX ^ X

AXON' MICROBUS

AERONAUTICS VERSION **A**
EUROFIGHTER VERSION **E**
SPACE VERSION **S**

INLINE BUS TERMINATOR

CABLE REFERENCES

(See cable specifications page 6)

- 10** : TWINAX BUS 10 AWG 24 SB [single braid] according to MIL-C17/176-00002 **A**
- 20** = TWINAX BUS 20 AWG 24 SB [single braid] accord. to pr EN 3375-003 **A**
- 21** = TWINAX BUS 21 AWG 24 DB [double braid] accord. to pr EN 3375-004 **A**
- 22** = TWINAX BUS 22 AWG 24 HI [high immunity] accord. to pr EN 3375-005 **A**
- 31** = TWINAX BUS 31 AWG 24 DB [double braid] according to PAN6421 **E**
- 40** = TWINAX BUS 40 AWG 24 SB [single braid] according to SSQ 21655 **S**
 - 41** = TWINAX BUS 41 AWG 24 DB [double braid] **S**
 - 43** = TWINAX BUS 43 AWG 26 SB [single braid] **S**
 - 44** = TWINAX BUS 44 AWG 26 DB [double braid] **S**
- 45** = TWINAX BUS 45 AWG 22 SB [single braid] according to SSQ 21655 **S**
 - 60** = TWINAX BUS 60 AWG 24 SB [single braid] **E A**
 - 61** = TWINAX BUS 61 AWG 24 DB [double braid] **E A**
 - 70** = TWINAX BUS 70 AWG 26 SB [single braid] **A**
- 71** = TWINAX BUS 71 AWG 26 DB [double braid] according to ECS 0700 **A**
- 72** = TWINAX BUS 72 AWG 26 HI [high immunity] **A**
- 80** = TWINAX BUS 80 AWG 24 SB [single braid] acc. to ESCC 3902 002 20 [black] **S**

CABLE LENGTH

(in meters)

COLOUR OF CABLE

H = blue
L = white

B = only for & mandatory for TWINAX BUS 80 AWG 24 SB

123

axon'
cable & interconnect

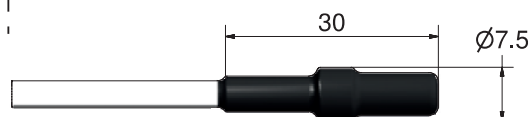
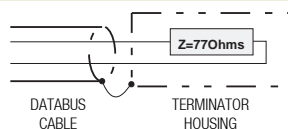
© 2011, AXON' CABLE - RELEASED APRIL 2016 / C
MIL-STD-1553B-DATABUS PRODUCTS FOR AERONAUTICS APPLICATIONS - www.axon-cable.com

In-line databus terminator

SPECIFICATIONS

EN 3567
MIL-STD-1553B
[STANAG 3838]

AMB / X - I - XX



DIMENSIONS in mm

Electrical characteristics

PARAMETERS	ACTUAL
Nominal line impedance	77 $\Omega \pm 1\%$
Insulation resistance between : - outer jacket / conductor - shield / conductors	> 1 000 M Ω minimum at 500 Vdc > 1 000 M Ω minimum at 500 Vdc
Dielectric strength : - between outer jacket / shield - between shield / conductors	500 V rms 500 V rms
Shield connection resistance	10 m Ω maximum

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C to +150°C
Weight	3 g
Axial extraction force	>100 N
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	44 g rms, 8 hours in all directions 49 g rms 30 g, half sine, 3 ms
Low pressure resistance	11 mbars
Crush resistance	500 N
Life test	1000 hours at +127°C Bus operating with MIL-STD-1553B signal
Thermal test	-65°C to +150°C, 10 cycles

Fully waterproof allowing good resistance to onboard fluids and excellent resistance to salt spray (500 hours).

Identification code

AMB /

X

I

XX

AXON' MICROBUS
(see complete reference of the terminator on Bus Standard sheet, page 124).

A : AERONAUTICS VERSION
E : JN1101 item
(mounted with 31 cable type)

IN-LINE BUS TERMINATOR

CABLE REFERENCES (see cable specifications)
10 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
 according to MIL-C-17 /176-00002
20 : TWINAX BUS AWG 24 SINGLE BRAID (SB)
 according to PR EN 3375-003
21 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
 according to PR EN 3375-004
22 : TWINAX BUS AWG 24 DOUBLE BRAID with high immunity tape (DB/HI) according to PR EN 3375-005
31 : TWINAX BUS AWG 24 DOUBLE BRAID (DB)
 according to PAN 6421
60 : TWINAX BUS AWG 24 EXPANDED PTFE SINGLE BRAID (SB)
61 : TWINAX BUS AWG 24 EXPANDED PTFE DOUBLE BRAID (SB)
70 : TWINAX BUS AWG 26 SINGLE BRAID (SB)
71 : TWINAX BUS AWG 26 DOUBLE BRAID (DB) according to ECS 0700
72 : TWINAX BUS AWG 26 DOUBLE BRAID according to with high immunity tape (DB/HI)
Other cables on request.

NOTE : CABLE LENGTH AND CABLE COLOUR TO BE DEFINED WHEN ORDERING.

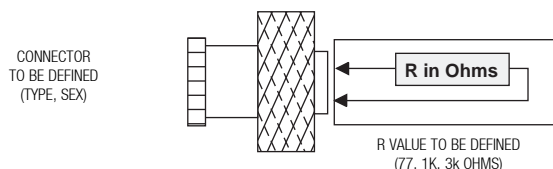
NOTE : these impedances can be integrated into the couplers. See complete reference of the coupler on Bus Standard Sheet.

Dismountable databus terminator or stub impedance

SPECIFICATIONS

MIL-STD-1553B
[STANAG 3838]

AMB / A - R - or AMB / A - D



DIMENSIONS in mm

Electrical characteristics

PARAMETERS	ACTUAL
Impedance	
- AMB / A-D = bus terminator	77 Ω
- AMB / A-R = stub impedance	1k Ω or 3k Ω
Insulation resistance between :	
- shield / conductors	> 1 000 M Ω minimum at 500 Vdc
Dielectric strength :	
- between shield / conductors	500 V rms
Shield connection resistance	Function of connector type

Mechanical and environmental characteristics

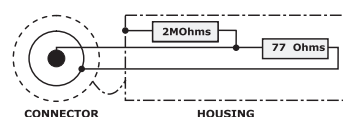
PARAMETERS	ACTUAL
Operating temperature	-65°C to +150°C (*)
Weight	according to connector type
Robust, light, compact construction (maximum reduction of space requirement)	
MTBF available following MIL-HDBK 217 (environment and operating temperature to be specified)	

(*) Depends on the connector type.

ESD protection

on request when possible.
A protective passive resistance
can be added to evacuate
Electrical Static Discharge.

77 OHM TERMINATOR WITH ESD PROTECTION



To match the bus line (AMB / X -D) or
to load a stub line by high impedance
value, the type of connector must be
specified)

Identification code

AMB /	A	X	CONNECTOR IDENTIFICATION
AXON' MICROBUS connector series to be specified	A : AERONAUTICS VERSION	R = DISMOUNTABLE STUB IMPEDANCE (value to be specified). D = DISMOUNTABLE BUS TERMINATOR	Specified on request.

ACB1 dismountable databus terminator or stub impedance

SPECIFICATIONS

MIL-STD-1553B
Digital time division
command/ response
multiplex databus

MIL-G-45204 Class 1
Surface treatment
for contact

ASTM-B-733
Surface treatment
for body and ferrule

AMB / A - R
AMB / A - D

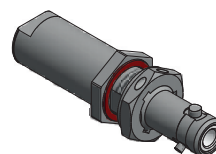
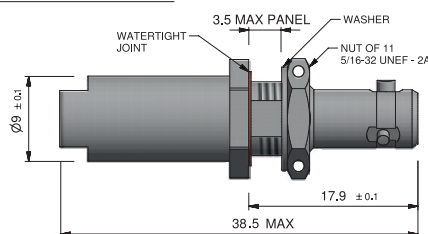
ACB1
SERIES



BULKHEAD JACK TERMINATOR

SEE THE RELEVANT SPECIFICATION OF THE CONNECTOR

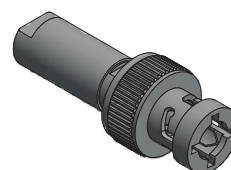
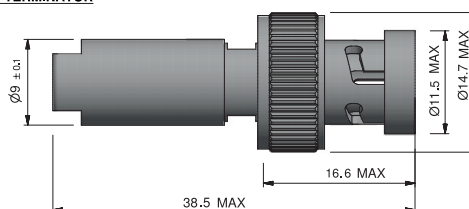
BULKHEAD JACK TERMINATOR



PLUG TERMINATOR

SEE THE RELEVANT SPECIFICATION OF THE CONNECTOR

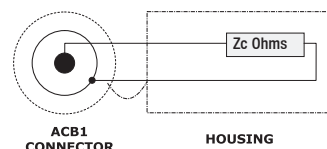
PLUG TERMINATOR



DIMENSIONS in mm

ELECTRICAL SCHEME

AXON's terminators are designed for MIL-STD-1553B databus applications. AXON's terminator is fitted with ACB1 connector.



Identification code

AMB	A	X	ACB1	XX	XX	X
AXON' MICROBUS	A : AERONAUTICS VERSION	DISMOUNTABLE TERMINATOR D : 77Ω Impedance R : 3 kΩ Impedance or value to be specified	AXON' CONNECTOR BUS TYPE 1	TYPE OF CONNECTOR BK : Bulkhead jack PG : plug	TYPE OF CONFIGURATION 1 : threaded 3A : configuration 3A 3B : configuration 3B 3C : configuration 3C 4 : configuration 4	TYPE OF CONTACT P : pin contact S : socket contact

Materials and surface treatment

PARTS	ACTUAL
Contact	Copper alloy / golding surface treatment in accordance with MIL-G-45204 CLASS 1 (1.27 μ m minimum)
Ferrule	Brass / Electroless nickel plating according to ASTM-B-733 (5 \pm 1 μ m)
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 \pm 1 μ m)

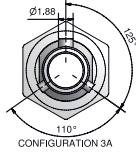
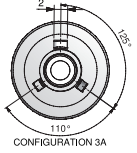
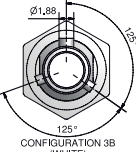
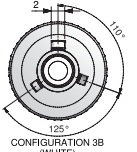
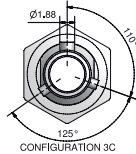
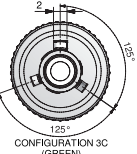
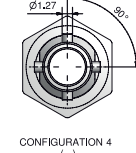
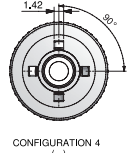
Electrical characteristics

PARAMETERS	ACTUAL
Insulation resistance Inner contact / Shield (sea level)	1 000 M Ω minimum at 500 Vdc
Shield connection resistance	10 m Ω maximum
Impedance Bus terminator	77 Ω nominal
Stub load	3 k Ω nominal

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C + 150°C
Bulkhead jack terminator or load	14 g maximum
Plug terminator or load	17 g maximum
Excellent vibration and shock resistance	

Connector configuration

TYPE OF CONFIGURATION	BK CONNECTOR	CORRESPONDING KEYING	PG CONNECTOR	CORRESPONDING KEYING
3A	AMB/A-X-ACB1-BK 3A	 CONFIGURATION 3A	AMB/A-X-ACB1-PG 3A	 CONFIGURATION 3A
3B	AMB/A-X-ACB1-BK 3B	 CONFIGURATION 3B (WHITE)	AMB/A-X-ACB1-PG 3B	 CONFIGURATION 3B (WHITE)
3C	AMB/A-X-ACB1-BK 3C	 CONFIGURATION 3C (GREEN)	AMB/A-X-ACB1-PG 3C	 CONFIGURATION 3C (GREEN)
04	AMB/A-X-ACB1-BK 4	 CONFIGURATION 4 (-)	AMB/A-X-ACB1-PG 4	 CONFIGURATION 4 (-)

In-line databus terminator crimp

SPECIFICATIONS

JN 1107 *

MIL-STD-1553B

Digital time division command/
response multiplex databus

ASTM-B-733

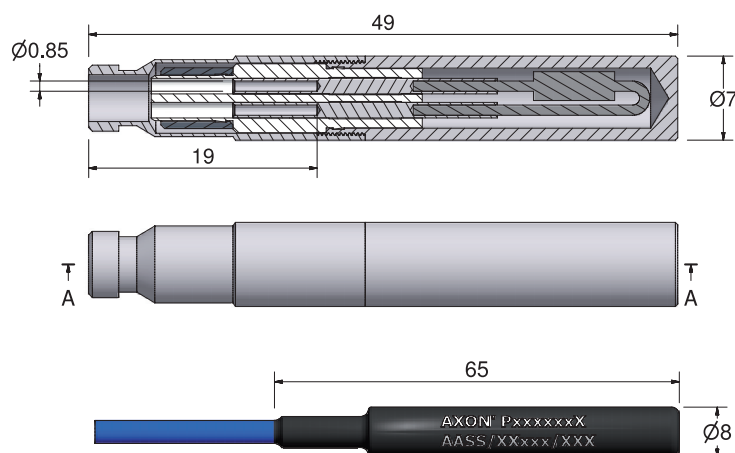
Surface treatment
for housing
and ferrule

MIL-G-45204 Class 1

Surface treatment
for contact pin

* JN 1107
approval only concerns
AX 1107-01
DDP reference :
DDP-J-403-A-0298

AX 1107 series



DIMENSIONS in mm

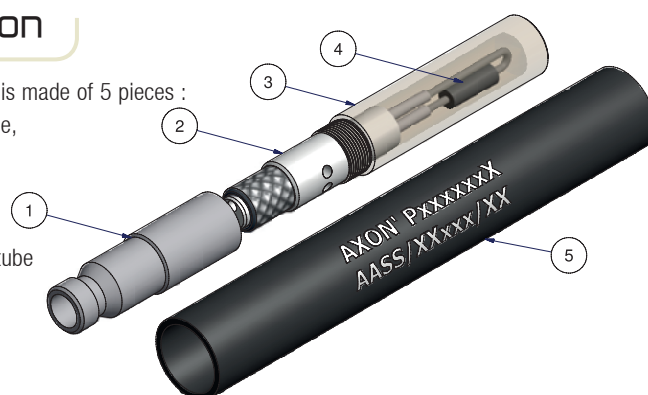


AXON's terminator series are designed for MIL-STD-1553 B databus application. In-line databus terminator (77Ω) or terminal load ($3k\Omega$) are to be crimped on AWG 24 databus cable. It consists of a resistor inside a shell ended by contacts to be crimped.

Construction

The terminator is made of 5 pieces :

- 1 - crimp ferrule,
- 2 - body
- 3 - housing
- 4 - resistor
- 5 - shrinkable tube



Identification code

AX 1107

DESIGNATION

XX

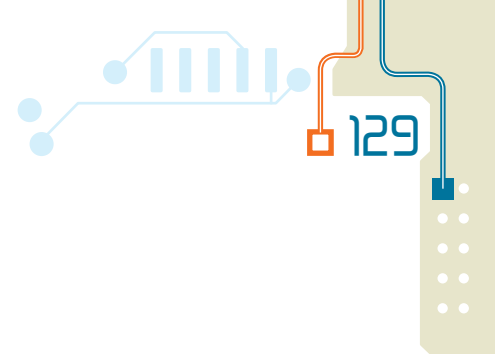
TYPE OF FERRULE :

- 01 : cable diameter between 3.4 and 3.8 mm
02 : cable diameter between 2.9 and 3.4 mm (not a JN1107 item)
03 : cable diameter between 3.8 and 4.1 mm (not a JN1107 item)

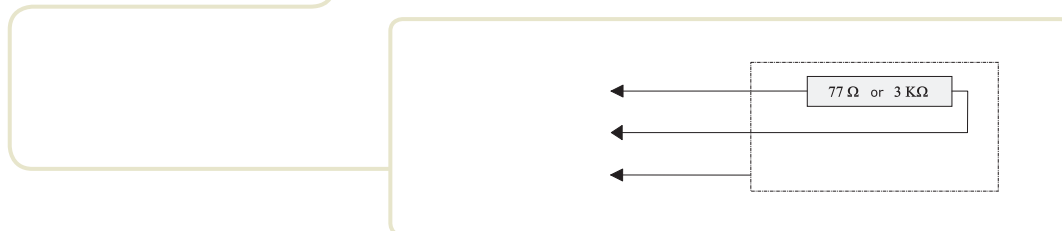
xx

TYPE OF RESISTOR

- 3k : for $3k\Omega$ resistor
77 : for 77Ω resistor



Electrical scheme



Materials and surface treatment

PARAMETERS	ACTUAL
Inner contact	Brass / Gold plated according to MIL-G-45204 class 1 (1.27 μ m minimum)
Housing / crimp ferrule	Brass / Electroless nickel plating according to ASTM-B-733 (5 \pm 1 μ m)
Body insulator	PTFE
Shrinkable tube	Polyolefin flexible crosslinked

Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-55°C to +150°C
Terminator / load weight	8.5 g maximum
Excellent vibration and shock resistance :	
- random vibrations	32 g rms, 1 hour in all directions 16 g rms, 120°C, 30 minutes in all directions
- gunfire vibrations	49 g rms in all directions
- mechanical shocks	15 g, half sine, 11 ms in all directions
Acceleration	20 g, in all directions
Thermal test	-55°C to +150°C, 10 cycles

Electrical characteristics

PARAMETERS	ACTUAL
Insulation resistance (sea level))	1 000 M Ω minimum at 500 V _{DC}
Impedance :	
Bus terminator	77 Ω \pm 2%
Stub load	3 k Ω \pm 2%

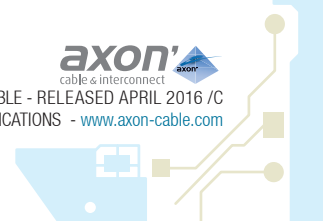
Type of cables

PARAMETERS	ACTUAL
Type of cables	All types of AWG 24 twisted shielded pairs with an outer diameter < 4.1 mm

Tooling used for crimping the connector on the cable

Crimping according to assembly instructions «JN1007-GF-01»

TYPE OF CRIMPING	CRIMPING TOOL	DIE
FERRULE INNER CONTACT	M22520/5-01	AX-CD-01



Splices

Advantages

Splices are used to interconnect databus systems without connectors or for repair and maintenance :

- › Controlled impedance,
- › Good mechanical characteristics and sealed,
- › Cost-effective solution,
- › Installed with standard tooling,
- › Lightweight.



SPICES

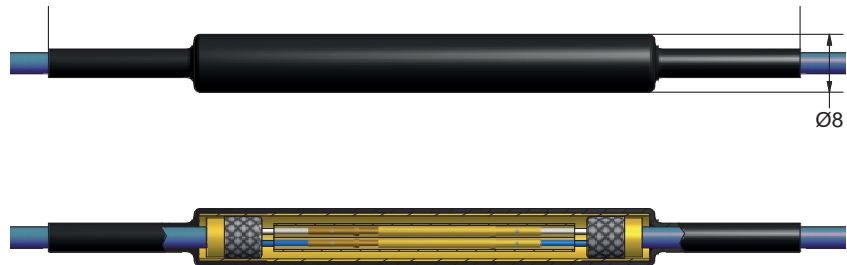
In-line databus splice crimp

SPECIFICATIONS

MIL-STD-1553 B
Digital time division
command / response multiplex
databus

MIL-C-39029
Contacts, electrical
connector, general
specification

AMB / A - S - XX



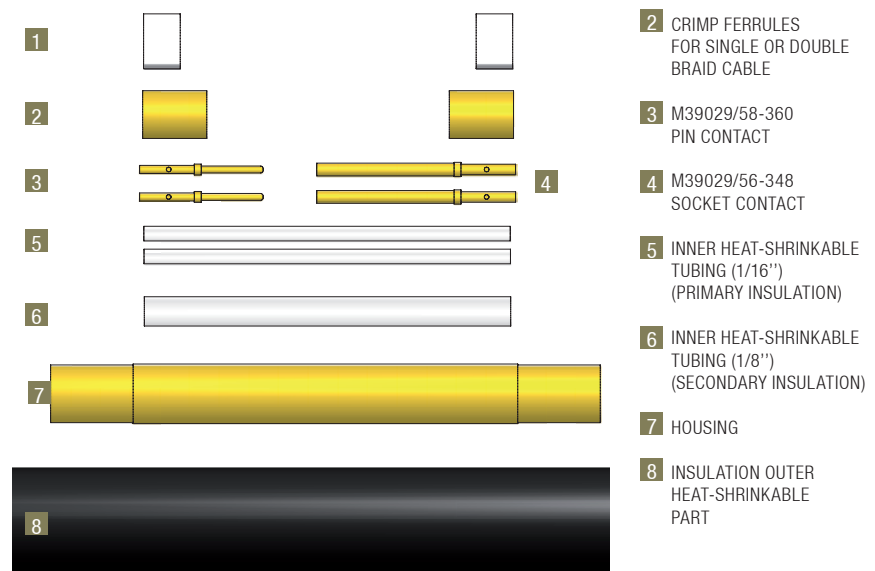
Length end-to-end including heat shrink tube.

DIMENSIONS in mm

AXON's AMB/A-S-xx splices are designed for MIL-STD-1553 B databus applications. These splices are crimp terminated, can be fitted to AWG 24 & 26 databus cables and are designed to comply with MIL-STD-1553B.

Construction

The splice consists of 13 pieces as follows :



Identification code

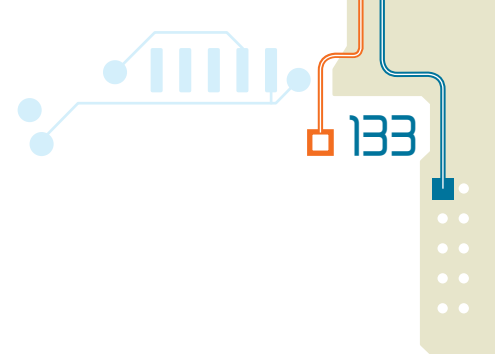
AMB / A - S

- XX

DESIGNATION

TYPE OF FERRULE

SB : for single braid cable
DB : for double braid cable



Materials and plating

COMPONENT	MATERIAL / PLATING
Inner contacts	Brass / Gold plated
Housing / ferrule	Brass / Gold plated
Sealing inserts	Silicon
Heat shrinkable sleeves	Polyolefin flexible crosslinked

Mechanical and environmental characteristics

PARAMETER	ACTUAL
Temperature range	-65°C + 150°C
Splice weight	6 g maximum

Electrical characteristics

PARAMETER	ACTUAL
Contact resistance	8 mΩ maximum
Insulation resistance	1 000 MΩ minimum at 500 V _{DC}
Nominal characteristic impedance	77 Ω

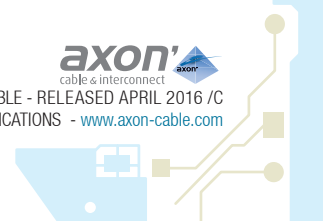
Type of cables

PARAMETER	ACTUAL
Type of cables	All types of AWG 26 to 24 shielded twisted pairs with an outer diameter < 3.8 mm

Tooling used for crimping the AMB/A-S-XX splice

AXON' CABLING INSTRUCTION : 95021-PM_SPLICE-01-A
(respect the crimping rules for MIL-C-39029 contacts or ESA-ECSS-Q-70-26 for space applications)

TYPE OF CRIMPING	CRIMPING TOOL	DIE
PIN CONTACT	M22520/2-01	M22520/2-09 Setting 2 for AWG 26 Setting 4 for AWG 24
SOCKET CONTACT	M22520/2-01	M22520/2-07 Setting 2 for AWG 26 Setting 4 for AWG 24
HOUSING	M22520/10-01	M22520/10-23



In-line databus splice crimp

SPECIFICATIONS

JN 1110 *

MIL-STD-1553B

Digital time division command/
response multiplex databus

02051-QTR-A01-AXON'
Qualification test report

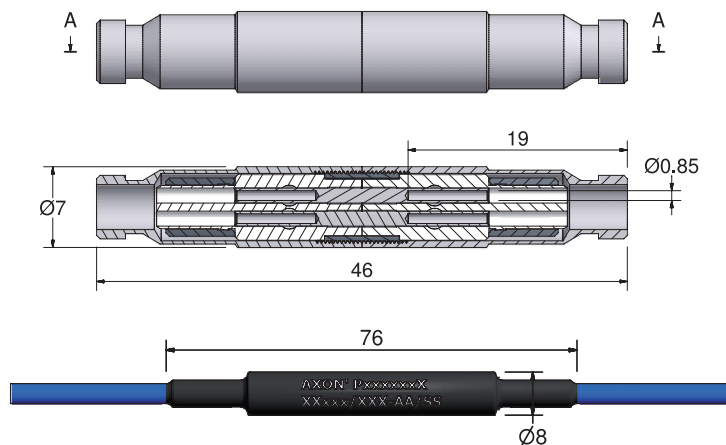
DDP-J403-A-02986
Declaration of design and
performance for aircraft
equipment /software

ASTM-B-733
Surface treatment
for housing
and ferrule

MIL-G-45204 Class 1
Surface treatment
for contact pin

* JN 1110
approval only concerns
AX 1110-01.
DDP reference :
DDP-J-403-A-0296.

AX 1110 - XX



Length end-to-end including heat shrink
tube.

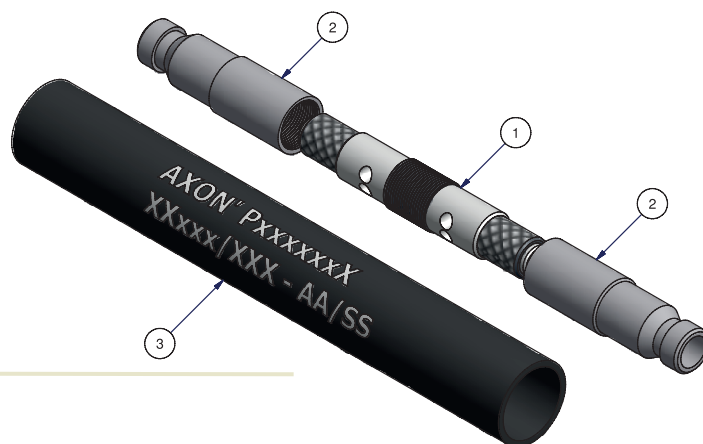
DIMENSIONS in mm

AXON's AX 1110-XX splices are designed for
MIL-STD-1553B databus applications.
Theses splices are crimp terminations to be
fitted to AWG 24 databus cables.

Construction

The splice consists of 4 pieces :

- 1 - splice body
- 2 - crimp ferrule
- 3 - shrinkable tube



Identification code

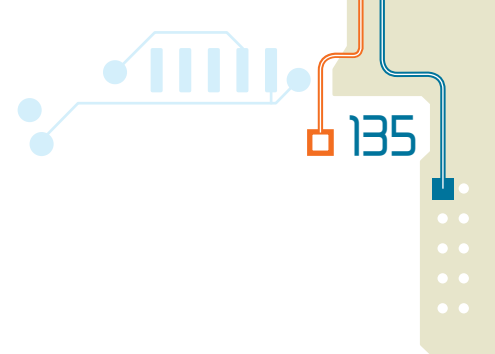
AX 1110

XX

DESIGNATION

TYPES :

- 01 : cable diameter between 3.4 and 3.8 mm (high temperature shrinkable boot 200°C)*
- 02 : cable diameter between 2.9 and 3.4 mm (standard temperature <150°C) (not a JN1110 item)
- 03 : cable diameter between 3.8 and 4.1 mm (standard temperature <150°C) (not a JN1110 item)
- 04 : cable diameter between 3.4 and 3.8 mm (standard temperature <150°C) (not a JN1110 item)



Materials and plating

COMPONENT	MATERIAL / FINISH
Inner contact	Brass / MIL-G-45204 class 1 (1.27 μ m min)
Crimp ferrule	Brass / Electroless nickel plating according to ASTM-B-733 (5 \pm 1 μ m)
Body insulator	PTFE
Shrinkable tube	Flexible crosslinked Polyolefin

Mechanical and environmental characteristics

PARAMETER	ACTUAL
Operating temperature	-55°C to +200°C for type 01 -55°C to +150°C for types 02 to 04
Terminator / load weight	8.0 g maximum
Excellent vibration and shock resistance : - random vibrations - gunfire vibrations - mechanical shocks	32 g rms, 1 hour in all directions 16 g rms, 120°C, 30 minutes in all directions 49 g rms in all directions 15 g, half sine, 11 ms in all directions
Acceleration	20 g, in all directions
Thermal test	-55°C to +150°C, 10 cycles

Electrical characteristics

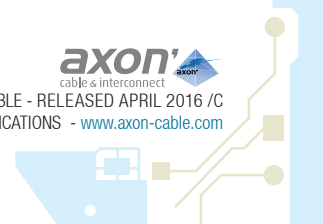
PARAMETER	ACTUAL
Contact resistance	8 m Ω maximum
Insulation resistance	1 000 M Ω minimum at 500 Vdc

Type of cables

PARAMETER	ACTUAL
Type of cables	All types of AWG 24 shielded twisted pairs with an outer diameter < 4.1 mm

Tooling used for crimping the AX 1110-XX splice

TYPE OF CRIMPING	CRIMPING TOOL	DIE
FERRULE	M22520/5-01	AX-CD-01
INNER CONTACTS	M22520/5-01	AX-CD-01



>> BRAZIL

**AXON' CABLE INDUSTRIA
E COMÉRCIO LTDA**

AV. AFONSO ARINOS DE MELO FRANCO
222 SALA 276 BLOCO 2B
BARRA DA TIJUCA - CEP.: 22631-455
RIO DE JANEIRO-RJ
TEL.: +55 21 3596-8002
e-mail: l.moreira@axon-cable.com

>> CANADA

AXON' CABLE CANADIAN OFFICE

4578 RUE CHABOT
H2H 1Y3 MONTREAL, QUEBEC
TEL.: +1 514 898 2044
e-mail: g.hannequin@axoncable.com

>> CHINA

AXON' INTERCONNECT LTD

HIGH TECH INDUSTRIAL PARK,
CHANG BAO XI ROAD
RONGGUI, 528306
SHUNDE, GUANGDONG
TEL.: +86 757 2838 7200
FAX: +86 757 2838 7212
e-mail: sales@axon-interconnect.com

>> GERMANY

AXON' KABEL GMBH

POSTFACH 1131 - 71201 LEONBERG
HERTICHSTR. 43 - 71229 LEONBERG
TEL.: +49 7152-97992-0
FAX: +49 7152-97992-7
e-mail: sales@axon-cable.de

>> HUNGARY

AXON' KÁBELGYÁRTÓ KFT.

KÜLSŐ-SZEGEDI ÚT 104.
H-6000 KECSKEMÉT,
TEL.: +36 76 508 195
FAX: +36 76 508 196
e-mail: axon@axon-cable.hu

>> INDIA

**AXON' INTERCONNECTORS
AND WIRES PVT LTD**

#117, NEIL RAO TOWERS, SUITE NO. 1W,
ROAD NO. 3 EPIP, WHITEFIELD
BANGALORE - 560 066
TEL.: +91 80 40918186
FAX: +91 80 40918185
e-mail: sales@axon-cable.in

>> JAPAN

AXON' CABLE JAPAN OFFICE

TEL./FAX: +81 26 244 2261
e-mail: axon-japan@axon-cable.com

>> LATVIA

AXON' CABLE SIA

VIŠĶU IELA, 21 C - LV-5410 DAUGAVPILS
TEL.: +371 6540 78 91
FAX: +371 6540 78 93
e-mail: axon@axoncable.lv

>> MEXICO

AXON' INTERCONEX, S.A. DE C.V.

Av. Peñuelas 21-A1.
INDUSTRIAL SAN PEDRITO PEÑUELAS
QUERÉTARO PARK
76148 QUERÉTARO, QRO.
TEL: +52 442 215 2713
FAX: +52 442 220 6464
e-mail: axon-mexico@axoncable.com

>> SPAIN

AXON' CABLE SPANISH OFFICE

C/CAPITÁN HAYA, N°1, PLANTA 15
28020 MADRID
TEL.: +34 91 418 43 46
FAX: +34 91 556 28 80
e-mail: sales@axon-cable.com

>> UNITED KINGDOM

AXON' CABLE LTD

AXON' AGORA

ADMIRALTY PARK - ROSYTH
DUNFERMLINE
FIFE KY11 2YW
TEL.: +44 1383 421500
FAX: +44 8715 282789
e-mail: sales@axon-cable.co.uk

>> USA

AXON' CABLE INC.

1314 N PLUM GROVE ROAD
SCHAUMBURG, IL. 60173
TEL.: +1 847 230 7800
FAX: +1 847 230 7849
e-mail: sales@axoncable.com

VISIT OUR WEBSITE
www.axon-cable.com



HEADQUARTERS

>> France

>> AXON' CABLE S.A.S.

2 ROUTE DE CHALONS EN CHAMPAGNE - 51210 MONTMIRAIL
TEL.: +33 3 26 81 70 00 - FAX: +33 3 26 81 28 83
e-mail : sales@axon-cable.com - www.axon-cable.com