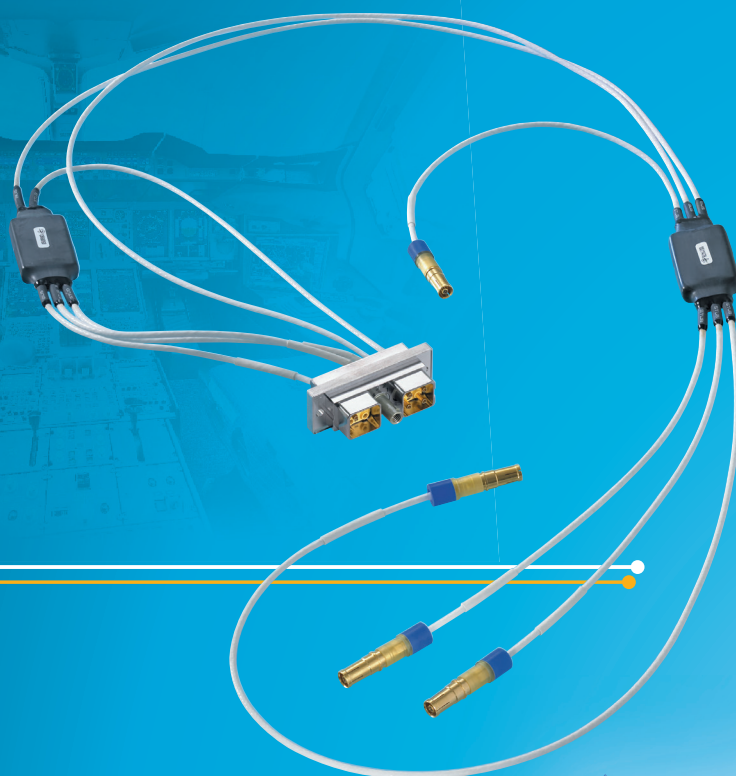


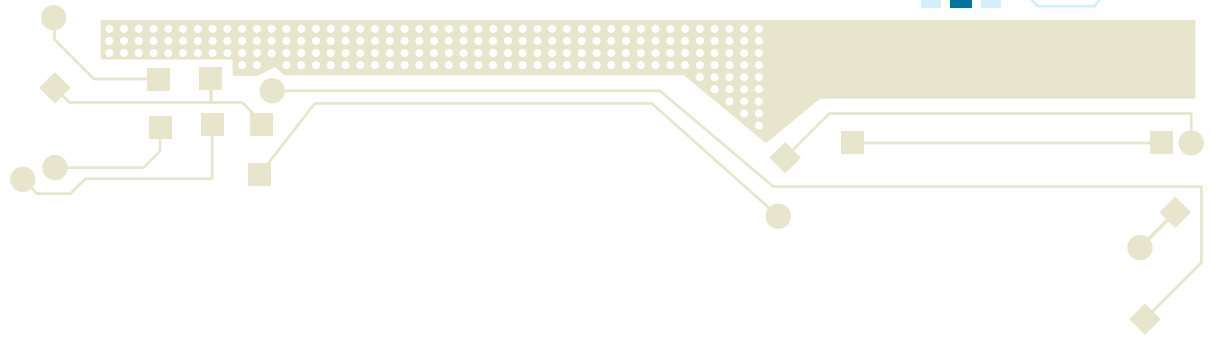


Rack couplers

MIL-STD-1553
Databus products
for aeronautics applications



Contents



Rack couplers

Rack couplers	5
4 way rack coupler	6

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.

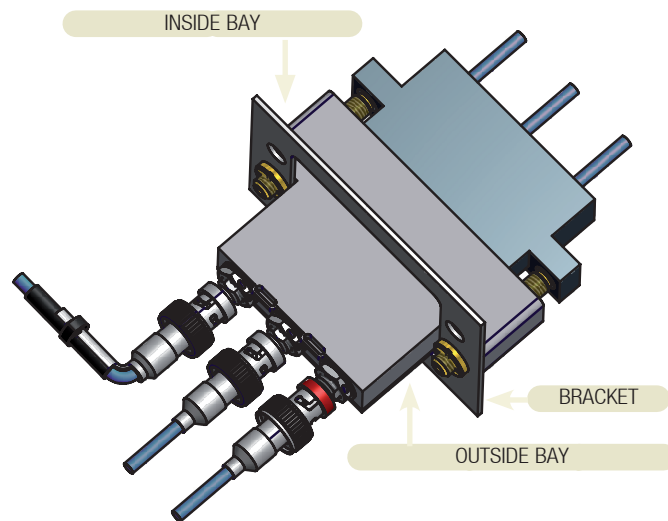


RACK couplers

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.



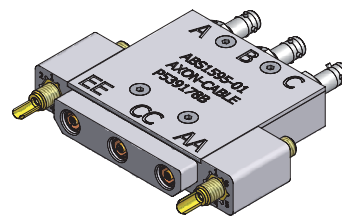
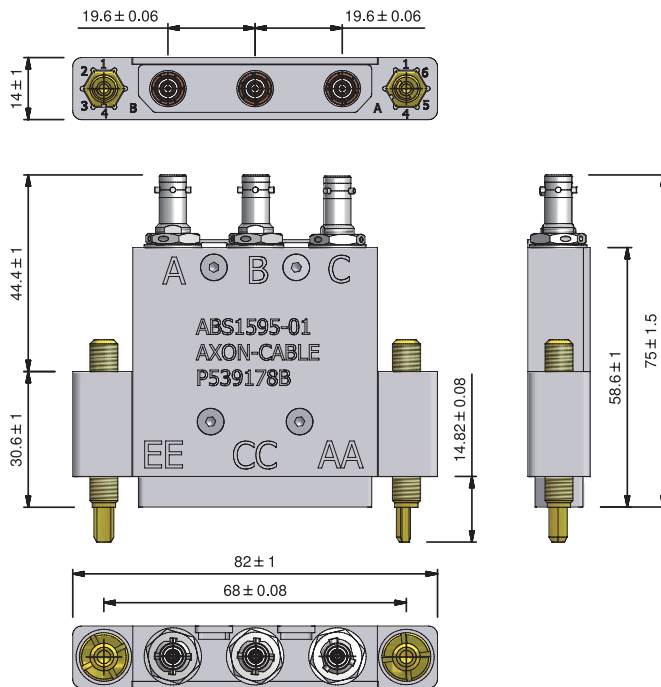
RACK COUPLER

4 way rack coupler

P 539178 B

SPECIFICATIONS

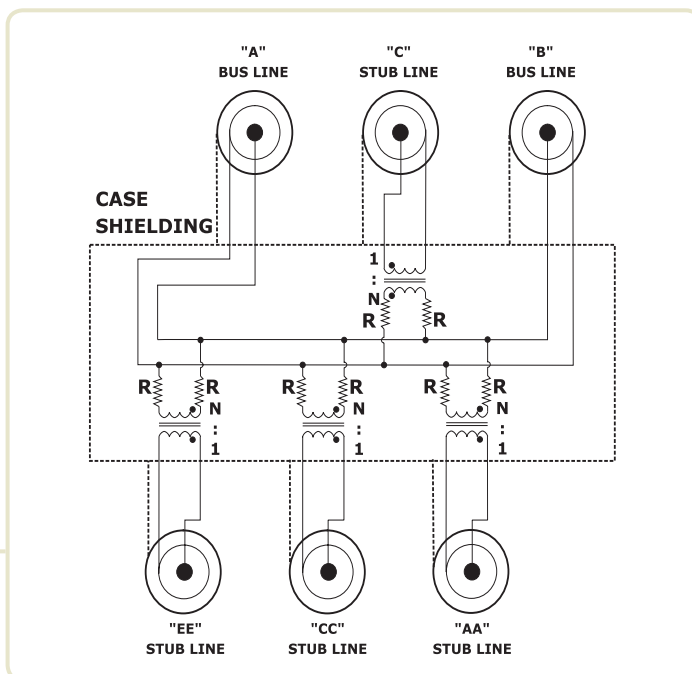
MIL-STD-1553B
SAE AS 4115

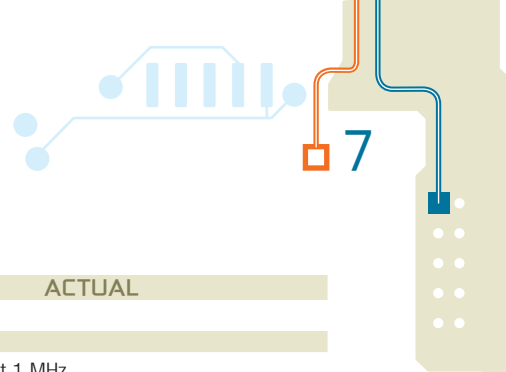


DIMENSIONS in mm

Electrical scheme

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





Electrical characteristics

PARAMETERS	REQUIRED	ACTUAL
Nominal line impedance (*)	77 ± 7 Ω	77 ± 7 Ω
Turn ratio	√2 ± 3 %	√2 ± 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 Zo ± 2 %	57.6 Ω ± 1 %
Insulation resistance between :		
- bus line / stub line	> 1000 MΩ	> 1 000 MΩ at 250 Vdc
- inner conductors / shield	> 1000 MΩ	> 1 000 MΩ at 500 Vdc
Shield continuity	< 50 mΩ	< 50 mΩ
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 Zo 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	10 g rms, 3 hours in all directions	10 g rms, 3 hours in all directions
- mechanical shocks	50 g half sine, 11ms	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	√2 ± 3 %	√2 ± 3 %	√2 ± 3 %
Secondary DC resistance	Rs < 5 Ω	Rs = 2 Ω	Rs < 2.5 Ω
Insulation resistance (winding to winding)	Ri > 100 MΩ	-	Ri > 1 000 MΩ with a 250 Vdc test voltage
Primary open circuit impedance (from 75 kHz to 1 MHz)	Z > 3 kΩ on full temperature operating range	Z > 10 kΩ at 25°C Z > 4.8 kΩ at -65°C Z > 4 kΩ at -85°C	Z ≥ 9.4 kΩ at 25°C (***)
Primary parallel inductance	-	Lp = 22 mH	Lp ≥ 20 mH
Primary parallel capacitance	-	Cp = 10 pF	Cp ≤ 11.4 pF
Inter-winding capacitance	-	Ci = 45 pF	-
Primary leakage inductance	-	-	Lf ≤ 6 μH
Droop (*)	D < 20 %	D = 4.5 % (**)	D < 20 %
Overshoot and ringing (*)	O < ± 1 V	O = 0.3 V (**)	O < ± 1 V

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

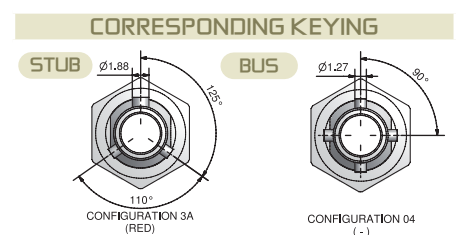
(*) Tested with a 250 kHz square wave of 27 Vpp with 100ns rise and fall times through a 360 ± 5 Ω resistor.

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

Connector types : AXON' ACB1 series

MATING INTERFACE	CONNECTOR TYPE (*)
OUTSIDE BAY Bus line connector (output A and B)	Bayonet 3 lugs connector with socket intermediate contact - Mate with ACB1-PG-04-P-Sxx)
OUTSIDE BAY Stub line connector (output C)	Bayonet 4 lugs connector with socket intermediate contact - Mate with ACB1-PG-3A-P-Sxx)
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.



>> CHINA

AXON' INTERCONNECT LIMITED
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

AXON' INTERCONNECT LIMITED
SHANGHAI REPRESENTATIVE OFFICE
1258, YU YUAN ROAD, 15A/FLOOR ROOM 09-10
SHANGHAI, 200050
TEL : +86 21 6225 3951
FAX : +86 21 6225 3961
e-mail : sales@axon-interconnect.com

>> GERMANY

AXON' KABEL GmbH
POSTFACH 1131 D - 71201 LEONBERG
HERTICHSTR. 23 D - 71229 LEONBERG
TEL : +49 7152-97992-0
FAX : +49 7152-97992-7
e-mail : sales@axon-cable.de

>> HUNGARY

AXON' KÁBELGYÁRTÓ KFT.
H-6000 KECSKEMÉT,
WÉBER EDE U. 10/A
TEL : +36 76 508 195
FAX : +36 76 508 196
e-mail : axon@axon-cable.hu

>> INDIA

AXON' INTERCONNECTORS
AND WIRES PVT LTD
NO: 118, SUITE 4 E, NEIL RAO TOWERS,
ROAD NO:3, EPIP, WHITEFIELD
BANGALORE 560066
TEL : +91 80 40918186
FAX : +91 80 40918185
e-mail : sales@axon-cable.in

>> JAPAN

AXON' CABLE JAPAN OFFICE
PMR 1410043
3-23-3, MINAMI-OI, SHINAGAWA -KU
TOKYO 140-0013 JAPAN
TEL /FAX : +81 26 244 2261
e-mail : axon-japan@nifty.com

>> LATVIA

AXON' CABLE SIA
VIŠKU 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 26 A.
INDUSTRIAL SAN PEDRITO PEÑUELAS
QUERÉTARO, QRO. C.P.76148 MÉXICO
TEL / FAX : +52 442 220 6464
TEL : +52 442 215 2713
e-mail : n.rodriguez@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 - FIFE
KY11 2YW - UK
TEL : +44 1383 421500
FAX : +44 8715 282 789
e-mail : sales@axon-cable.co.uk

>> USA

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

HEADQUARTERS

>> France

>> AXON' CABLE S.A.S.

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 - <http://www.axon-cable.com>

