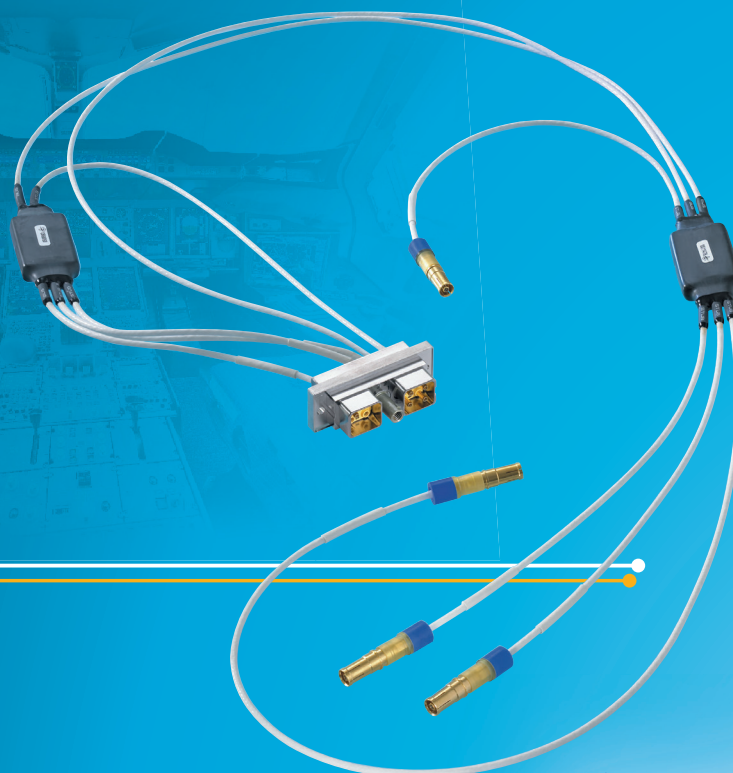
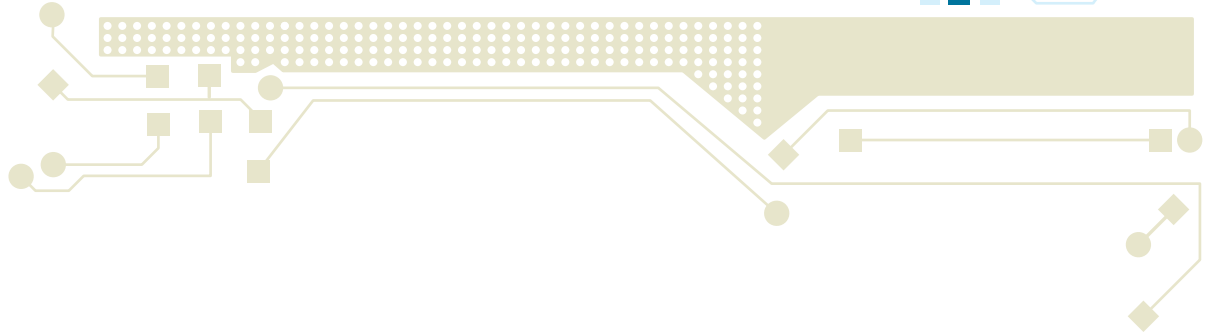


# Databus terminators

MIL-STD-1553  
Databus products  
for aeronautics applications



# Contents

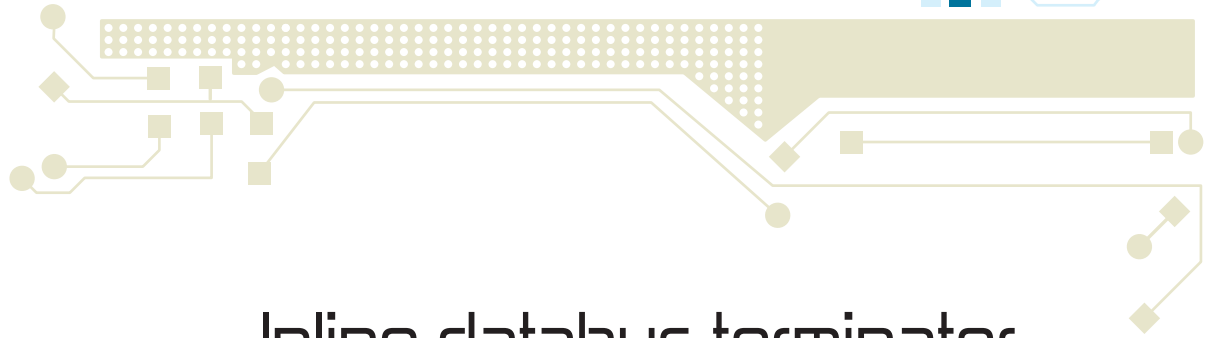


## Databus terminator

Inline databus terminator identification code.....	5
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# Terminators



## Inline databus terminator identification code

AMB/ A - I - XX - XX ^ XX

### 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**

### CABLE LENGTH

(in meters)

### COLOUR OF CABLE

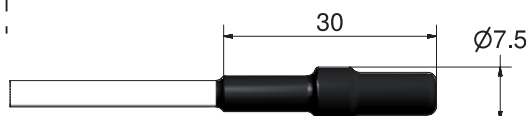
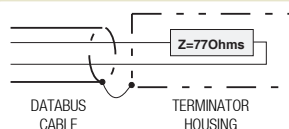
**H** = blue  
**L** = white  
**HS** = blue with black stripes  
**LS** = white with blue stripes

# Inline 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	> 1 000 M $\Omega$ minimum at 500 Vdc
- shield / conductors	> 1 000 M $\Omega$ minimum at 500 Vdc
Dielectric strength :	
- between outer jacket / shield	500 V rms
- between shield / conductors	500 V rms
Shield connection resistance	10 m $\Omega$ maximum

## Mechanical and environmental characteristics

PARAMETERS	ACTUAL
Operating temperature	-65°C to +150°C
Weight	< 9 g
Axial extraction force	>100 N
Excellent vibration and shock resistance :	
- random vibrations	44 g rms, 8 hours in all directions
- gunfire vibrations	49 g rms
- mechanical shocks	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 /

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

X

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

I

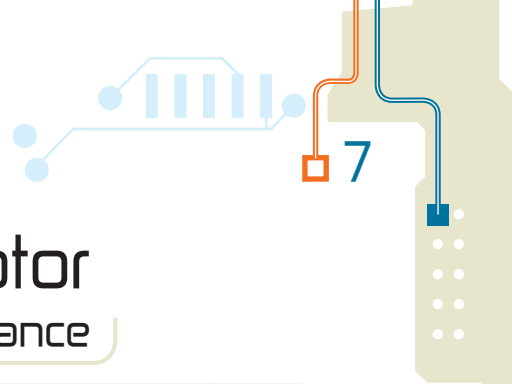
**INLINE BUS TERMINATOR**

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  
**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.

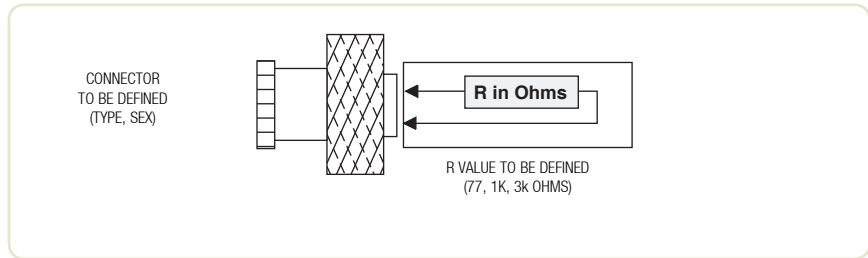


# Dismountable databus terminator or stub impedance

## 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 MΩ minimum at 500 Vdc
Dielectric strength :	
- between shield / conductors	500 V rms
Shield connection resistance	Function of connector type

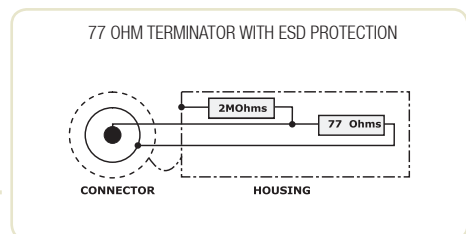
## Mechanical and environmental characteristics

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.



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

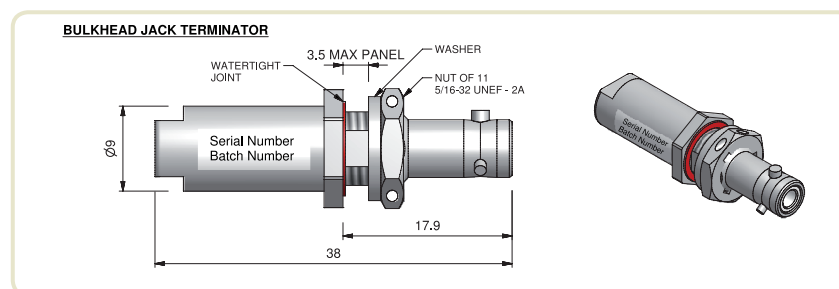
AMB / A - D

ACB1  
SERIES



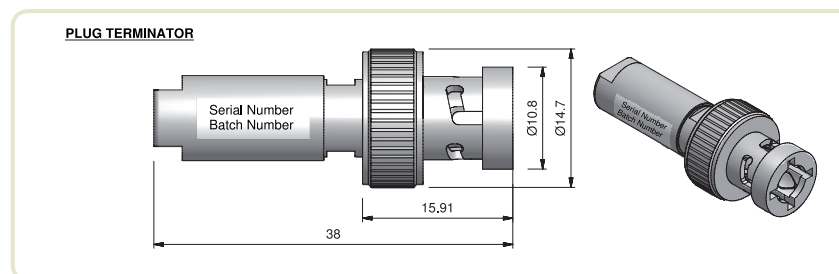
### BULKHEAD JACK TERMINATOR

SEE THE RELEVANT SPECIFICATION OF THE CONNECTOR



### PLUG TERMINATOR

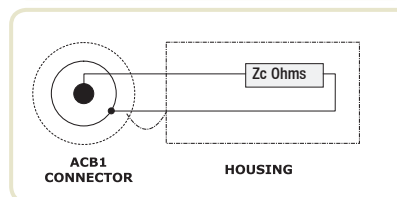
SEE THE RELEVANT SPECIFICATION OF THE CONNECTOR



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

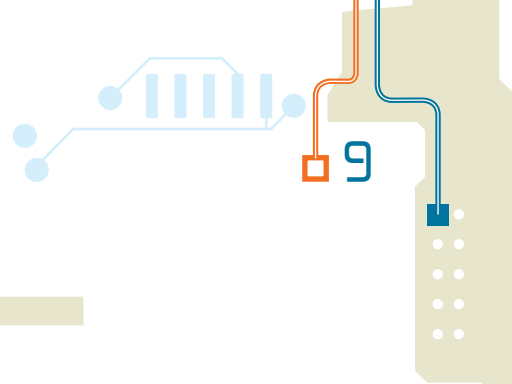
DISMOUNTABLE  
TERMINATOR  
D : 77Ω Impedance  
R : 3 kΩ Impedance  
or value to be  
specified

AXON'  
CONNECTOR  
BUS TYPE 1

TYPE OF  
CONNECTOR  
BK : Bulkhead  
jack  
PG : plug

TYPE OF  
CONFIGURATION  
01 : threaded  
3A : configuration 3A  
3B : configuration 3B  
3C : configuration 3C  
04 : configuration 04

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 $\mu$ m minimum)
Ferrule	Brass / Electroless nickel plating according to ASTM-B-733 (5 $\pm$ 1 $\mu$ m)
Body	Brass / Electroless nickel plating according to ASTM-B-733 (5 $\pm$ 1 $\mu$ m)

## Electrical characteristics

PARAMETERS	ACTUAL
Insulation resistance Inner contact / Shield (sea level)	1 000 M $\Omega$ minimum at 500 Vdc
Shield connection resistance	10 m $\Omega$ maximum
Impedance Bus terminator	77 $\Omega$ nominal
Stub load	3 k $\Omega$ 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	<p>CONFIGURATION 3A (RED)</p>	AMB/A-X-ACB1-PG 3A	<p>CONFIGURATION 3A (RED)</p>
3B	AMB/A-X-ACB1-BK 3B	<p>CONFIGURATION 3B (WHITE)</p>	AMB/A-X-ACB1-PG 3B	<p>CONFIGURATION 3B (WHITE)</p>
3C	AMB/A-X-ACB1-BK 3C	<p>CONFIGURATION 3C (GREEN)</p>	AMB/A-X-ACB1-PG 3C	<p>CONFIGURATION 3C (GREEN)</p>
04	AMB/A-X-ACB1-BK 04	<p>CONFIGURATION 04 (-)</p>	AMB/A-X-ACB1-PG 04	<p>CONFIGURATION 04 (-)</p>



# Inline databus terminator crimp

## SPECIFICATIONS

JN 1107 \*

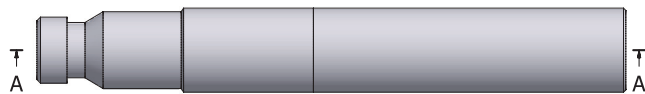
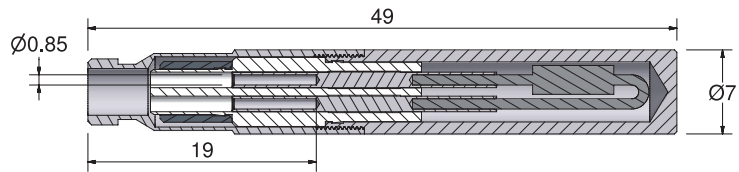
MIL-STD-1553B  
Digital time division command/  
response multiplex databus

ASTM-B-733  
Surface treatment  
for housing  
and ferrule

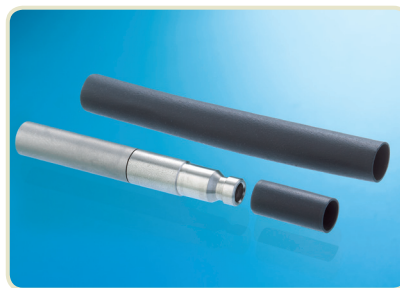
MIL-G-45204 Class 1  
Surface treatment  
for contact pin

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

## AX 1107 series



DIMENSIONS in mm

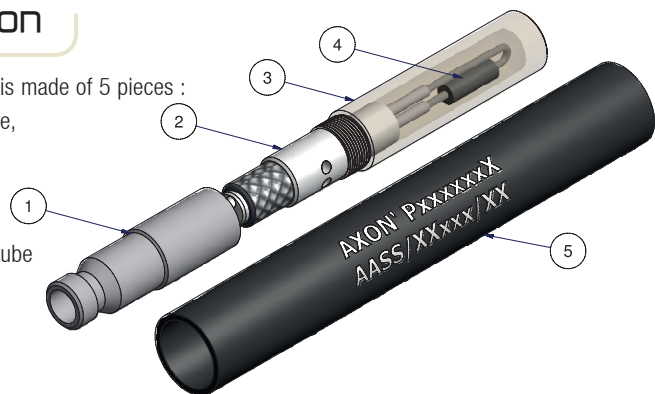


AXON's terminator series are designed for MIL-STD-1553 B databus application. Inline databus terminator ( $77\Omega$ ) or terminal load ( $3k\Omega$ ) are to be crimped on AWG 24 databus cable. It consists of a resistor inside a shell ended by contacts to be crimped.

## Construction

The terminator is made of 5 pieces :

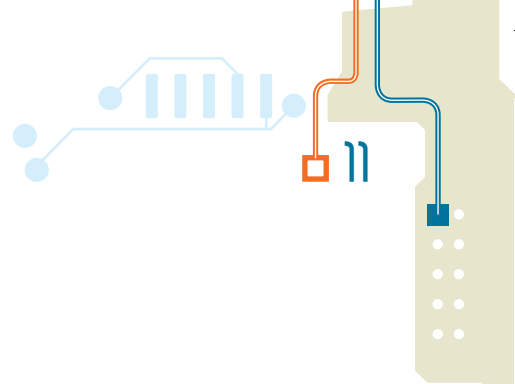
- 1 - crimp ferrule,
- 2 - body
- 3 - housing
- 4 - resistor
- 5 - shrinkable tube



## Identification code

AX 1107	XX	xx
<b>DESIGNATION</b>	<b>TYPE OF FERRULE :</b> 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)	<b>TYPE OF RESISTOR</b> 3k : for 3 k $\Omega$ resistor 77 : for 77 $\Omega$ resistor





## Electrical scheme



## Materials and surface treatment

PARAMETERS	ACTUAL
Inner contact	Brass / Gold plated according to MIL-G-45204 class 1 (1.27 $\mu\text{m}$ minimum)
Housing / crimp ferrule	Brass / Electroless nickel plating according to ASTM-B-733 (5 $\pm$ 1 $\mu\text{m}$ )
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 minimum in all directions
- gunfire vibrations	49 g rms in all directions
- mechanical shocks	15 G's, half sine, 11 ms in all directions
Acceleration	20 G's in all directions
Thermal test	-55°C to +150°C, 10 cycles

## Electrical characteristics

PARAMETERS	ACTUAL
Insulation resistance (sea level)	1 000 M $\Omega$ minimum at 500 Vdc
Impedance :	
Bus terminator	77 $\Omega$ $\pm$ 2%
Stub load	3 k $\Omega$ $\pm$ 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



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