

■ PROFIBUS PA

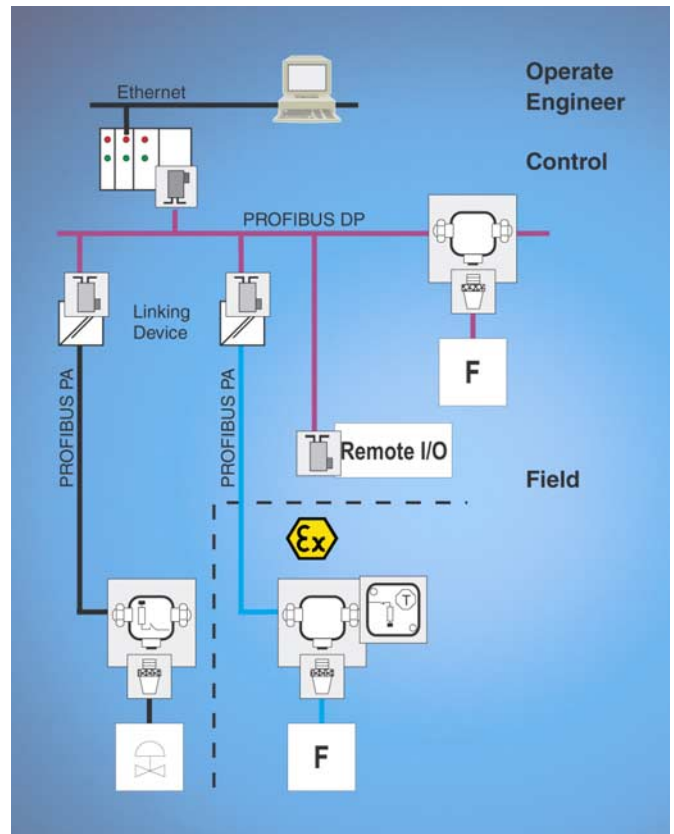
- Junctions
- Connectors
- Accessories

■ PROFIBUS DP

- Junctions
- Connectors
- Accessories

■ PROFIBUS DP/PA

- Accessories



The PROFIBUS PA T-Connectors are available as Standard and Ex(Haz.) version. They are used for coupling 1 up to 4 transmitters to the PA trunk via spurs. The spurs can optionally be connected by an M12 connection or directly via the EMC cable gland.

- Non-interrupted BUS operation when exchanging or extending a PA transmitter
- Easy to use
- Low installation costs
- External grounding cable
- Pressure-compensation element
- EMC cable gland
- Tension spring connection
- Aluminium (standard) housing
- Non-Ex design (integrated bus termination, switchable)
- Ex(Haz.) design acc. to ATEX (external bus termination with **NPZ100-EX**)

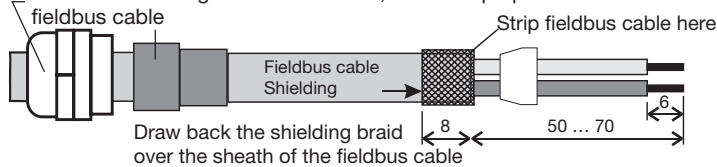


NPJ120-NO, NPJ130-NO, NPJ420-NO, NPJ460-NO – PROFIBUS PA Junctions - Non-Ex version

Recommendation of mounting

Shield is connected to the enclosure via the EMC cable glands.

Thread the cable gland onto the seal, on the unprepared



Use ferrules!

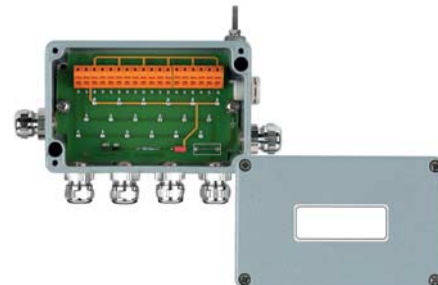
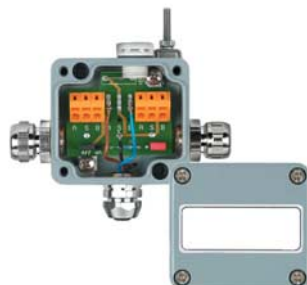


Technical data

Temperature range	
Operating temperature	-40...+85°C
Type of protection	IP 66
Material of housing	high-quality aluminium alloy (AL-Si 12)
Surface	stove-enamelled RAL 7001
PROFIBUS PA connection	tension spring 0.5...1.5 mm ²
Cable bushing	EMC cable gland M16
Clamping area	5.5...9.6 mm
Measuring instrument connector	M12 x 1, 4pin contacts brass, surface CuZnAu

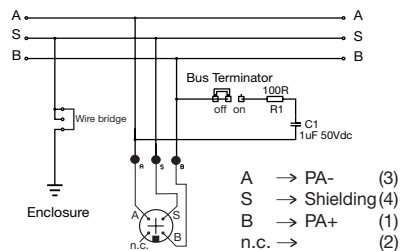
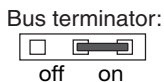
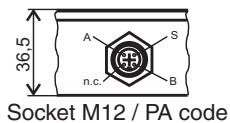
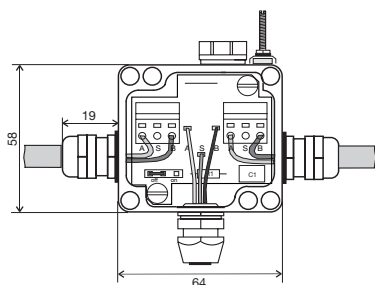
Installation advice

Torques	
M16 cable gland on housing	6.25 Nm
Coupling ring M16 cable gland	4.5 Nm
Housing lid	1.8...2.0 Nm
External earthing cable	1.8...2.0 Nm



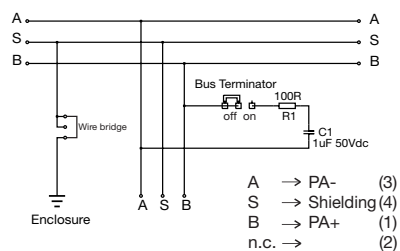
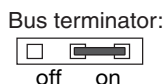
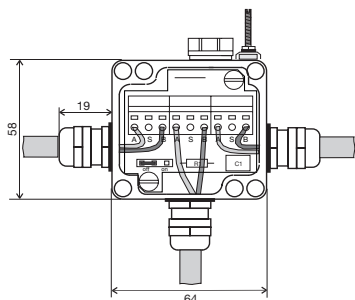
NPJ120-NO (JPN120) PROFIBUS PA Junction – Non-Ex version, with bus termination

The Transmitter (spur, 1-way) are connected using M12 connection.



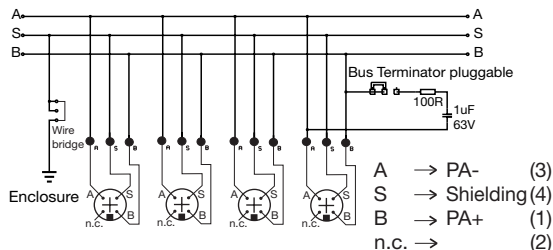
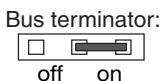
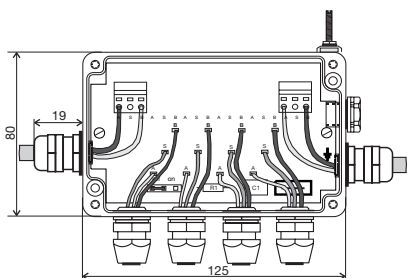
NPJ130-NO (JPN130) PROFIBUS PA Junction – Non-Ex version, with bus termination

The Transmitter (spur, 1-way) are connected using cable bushing.



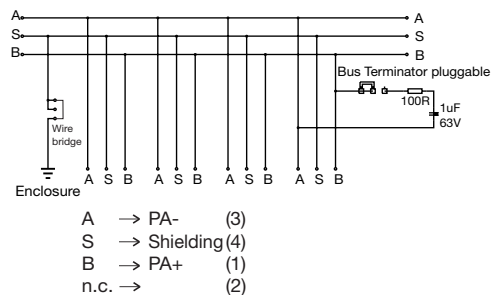
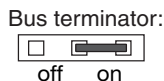
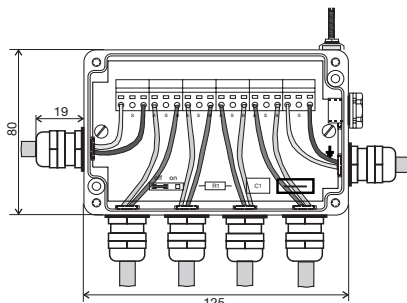
NPJ420-NO (JPN420) PROFIBUS PA Junction – Non-Ex version, with bus termination

The Transmitter (spurs, 4-way) are connected using M12 connection.



NPJ460-NO (JPN460) PROFIBUS PA Junction – Non-Ex version, with bus termination

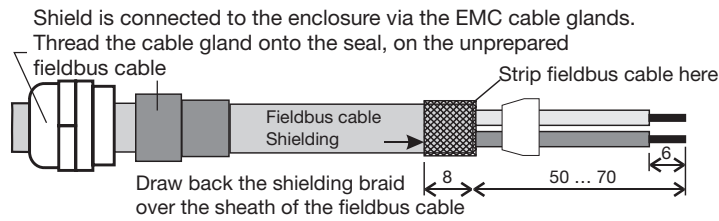
The Transmitter (spurs, 4-way) are connected using cable bushing.



All drawings not scaled! All units in millimeter!

NPJ120-EX, NPJ130-EX, NPJ420-EX, NPJ460-EX – PROFIBUS PA Junctions – Ex area EEx (ia) ATEX

Recommendation of mounting:



Use ferrules!

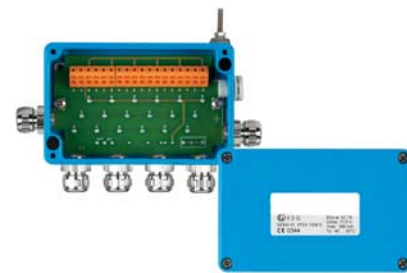
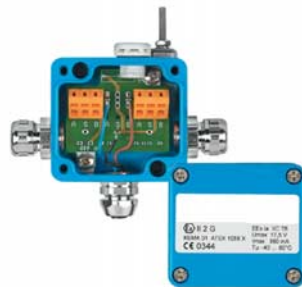


Technical data

Temperature range	-40...+80°C
Operating temperature	IP 66
Type of protection	high-quality aluminium alloy (AL-Si 12)
Material of housing	stove-enamelled RAL 5015
Surface	tension spring 0.5...1.5 mm ²
PROFIBUS PA connection	EMC cable gland M16
Cable bushing	5.5...9.6 mm
Clamping area	contacts brass, surface CuZnAu
Measuring instrument connector M12 x 1, 4pin	II 2 G EEx ia IIC T6
ATEX Certification	

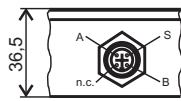
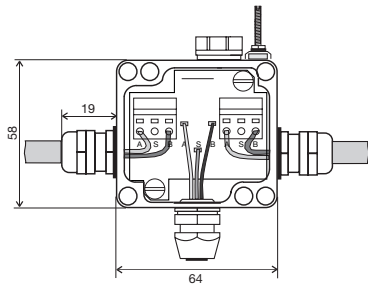
Installation advice

Torques	
M16 cable gland on housing	6.25 Nm
Coupling ring M16 cable gland	4.5 Nm
Housing lid	1.8...2.0 Nm
Adapter / spur cable	hand-tight
External earthing cable	1.8...2.0 Nm



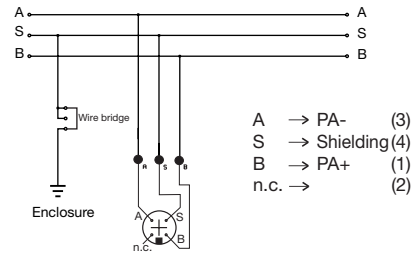
NPJ120-EX (JPE120-Ex) PROFIBUS PA Junction – Ex area EEx (ia) ATEX, without bus termination

The Transmitter (spur, 1-way) are connected using M12 connection.



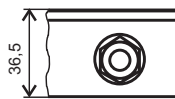
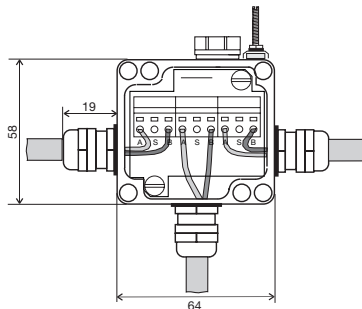
Socket M12 / PA code

Bus terminator:
 With external
 NPZ100-EX only

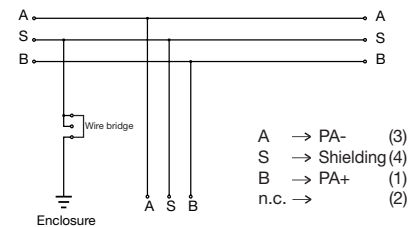


NPJ130-EX (JPE130-Ex) PROFIBUS PA Junction – Ex area EEx (ia) ATEX, without bus termination

The Transmitter (spur, 1-way) are connected using cable bushing.

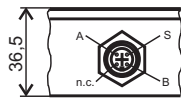
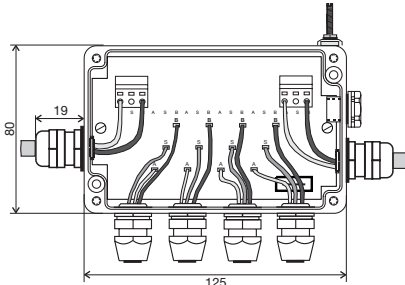


Bus terminator:
 With external
 NPZ100-EX only



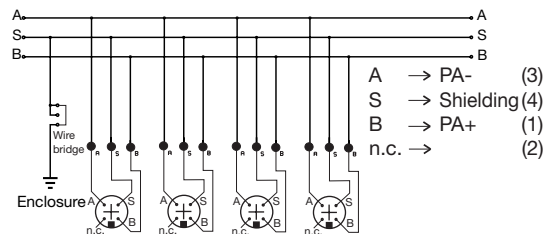
NPJ420-EX (JPE420-Ex) PROFIBUS PA Junction – Ex area EEx (ia) ATEX, without bus termination

The Transmitter (spurs, 4-way) are connected using M12 connection.



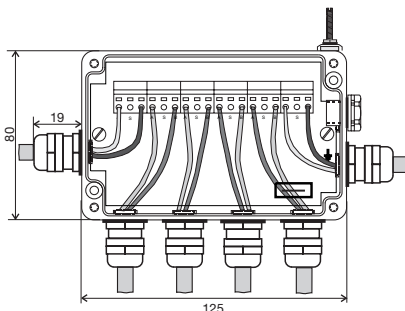
Socket M12 / PA code

Bus terminator:
 With external
 NPZ100-EX only

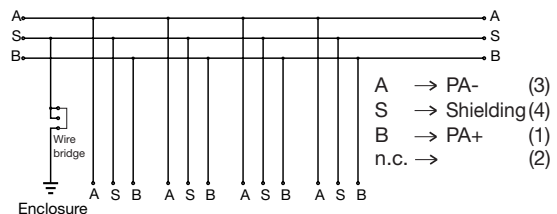


NPJ460-EX (JPE460-Ex) PROFIBUS PA Junction – Ex area EEx (ia) ATEX, without bus termination

The Transmitter (spurs, 4-way) are connected using cable bushing.

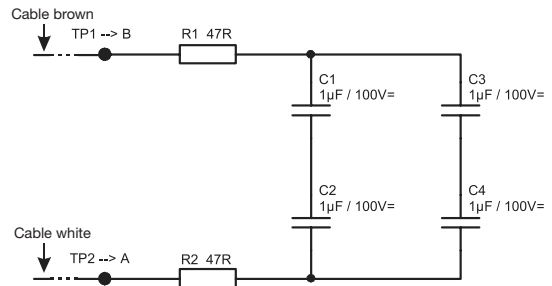


Bus terminator:
 With external
 NPZ100-EX only



All drawings not scaled! All units in millimeter!

NPZ100-EX (APE100-Ex) PROFIBUS PA Bus Terminator – Ex area EEx (ia) ATEX

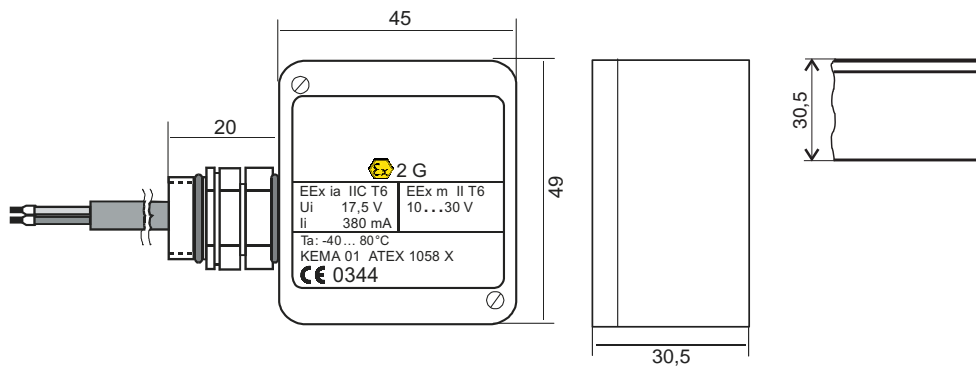


Technical data

Temperature range/operating temperature	-40...+80 °C
Type of protection	IP 66
Material of housing	high-quality aluminium alloy (AL-Si 12)
Surface	black powder coated
Connecting cable	2 x 0.14 mm ²
Cable bushing	Bus adapter M16
ATEX Certification	II 2 G EEx ia IIC T6, II 2 G EEx m II T6

Installation advice

Torques	
M16 adapter on the housing	6.0 Nm
External earthing cable (if necessary)	1.8...2.0 Nm



All drawings not scaled! All units in millimeter!

NPE100-NE (EPG100) PROFIBUS PA Plug - M12, metal case, for Ex (Haz.) and Non-Ex area



Technical data

Poles
 Type of connection
 Cross-sectional area of connection
 Connecting thread
 Contact surface
 Housing protection to DIN 40050 IEC 529
 Material of housing
 Inflammability to UL-94
 Operating temperature
 Rated current per contact
 Nominal voltage to
 VDE standard 0110/ISO group C
 Tracking resistance
 Volume resistivity to IEC512 part 2
 Insulation resistance to IEC 512 part 2

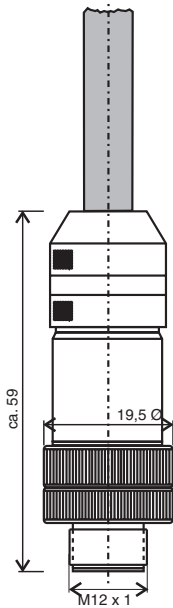
4 Poles, PA code
 screwed
 0.75 mm²
 M12
 CuZnAu
 IP 67 with cable Ø 4...9 mm
 Cu Zn surface nickel
 V-2
 -25 °C...+85 °C
 3 A

Installation advice

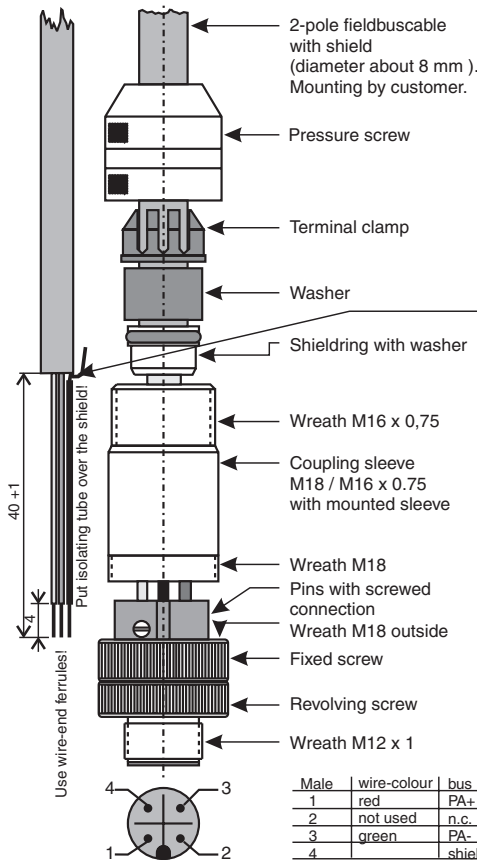
Screw terminals
 Coupling ring PG cable gland
 Knurled screw

125 V ~ 150 V =
 KC 600
 ≤ 8 MΩ
 ≥ 10¹² Ω
 Torques
 0.4 Nm
 4.0 Nm
 hand-tight!

Dimensions

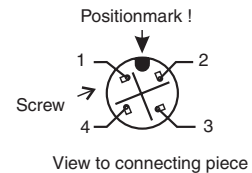


Recommendation of mounting



Sequense of mounting:

- Put the fieldbuscable through pressure screw, terminal clamp, washer, shielding with washer.
- Caution: Only for EMV ! Strip the fieldbuscable here, lay the shield over the shielding. Cut the rest of the shield. Shield can be connected, as drawing, with pin S of the plug and socket connector. Prepare the cable as shown in the drawing.
- Put prepared ends of the cable through the coupling sleeve. It's possible to use an isolating tube for the cable ends. Put shielding with washer and shield into the coupling sleeve. Put washer, terminal clamp and pressure screw together. Then fix the pressure screw.
- Fix the cable ends at the pins A, B, S of the plug and socket connector. Screw coupling sleeve and part with pins A, B, S together.



All drawings not scaled! All units in millimeter!

PROTECTION REMARK TO DIN 34 MUST BE OBSERVED

NPE300-NE (EPG300) PROFIBUS PA Socket – M12, metal case, for Ex (Haz.) and Non-Ex area



Technical data

Poles
 Type of connection
 Cross-sectional area of connection
 Connecting thread
 Contact surface
 Housing protection to DIN 40050 IEC 529
 Material of housing
 Inflammability to UL-94
 Operating temperature
 Rated current per contact
 Nominal voltage to
 VDE standard 0110/ISO group C
 Tracking resistance
 Volume resistivity to IEC512 part 2
 Insulation resistance to IEC 512 part 2

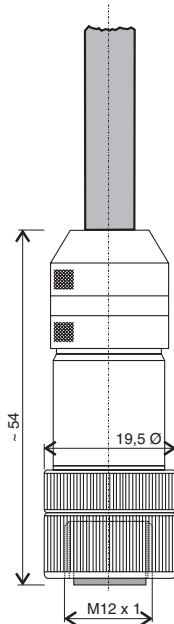
4 Poles, PA code
 screwed
 0.75 mm²
 M12
 CuZnAu
 IP 67 with cable Ø 4...9 mm
 Cu Zn surface nickel
 V-2
 -25 °C...+85 °C
 3 A

Installation advice

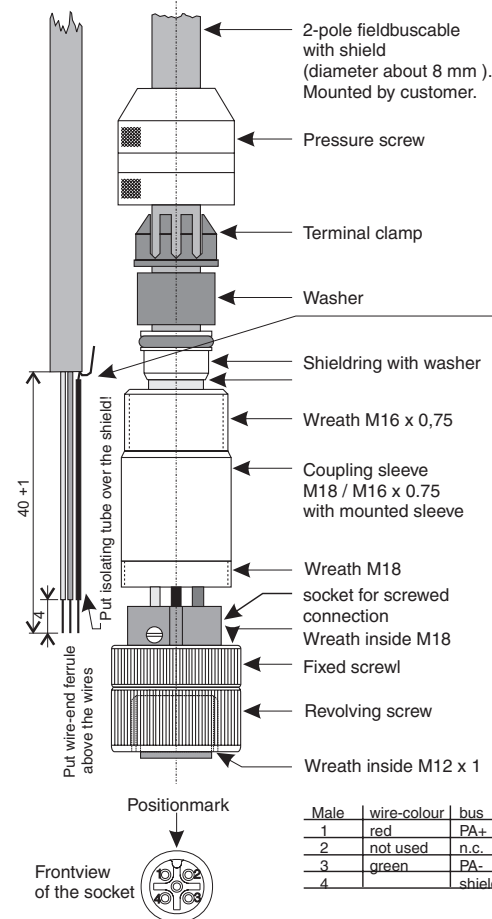
Screw terminals
 Coupling ring PG cable gland
 Knurled screw

125 V ~ 150 V =
 KC 600
 ≤ 8 MΩ
 ≥ 10¹² Ω
 Torques
 0.4 Nm
 4.0 Nm
 hand-tight

Dimensions



Recommendation of mounting

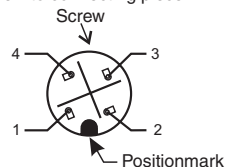


Recommendation of mounting:

- Put the fieldbuscable through pressure screw, terminal clamp, washer, shielding with washer.
- Caution:
 Only for EMV !
 Strip the fieldbuscable here and lay the shield over the shielding. Cut the rest of the shield. Shield can be connected, as drawing, with socket S. Prepare the cable as shown in the drawing.
- Put prepared wires and perhaps isolated shield through the coupling sleeve. Put shielding with washer and shield into the coupling shield. Put washer, terminal clamp and pressure screw together. Then fix the pressure screw.
- Fix the cable ends at the socket pins A, B, S. Screw the coupling sleeve and the part with the sockets together.

Male	wire-colour	bus	referenz
1	red	PA+	B
2	not used	n.c.	n.c.
3	green	PA-	A
4		shield	S

View to connecting piece



All drawings not scaled! All units in millimeter!

PROTECTION REMARK TO DIN 34 MUST BE OBSERVED

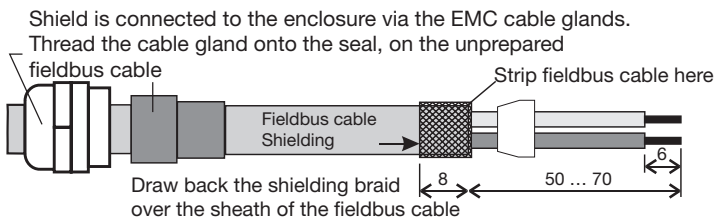
The PROFIBUS DP T-Connectors are available as Aluminium and Stainless Steel version. They are used for coupling one transmitter to the DP trunk via spurs. The spurs can optionally be connected by an M12 connection or directly via the EMC cable gland (for Aluminium version only).

- Non-interrupted BUS operation when exchanging a DP transmitter, as well as the last DP Transmitter by an active bus termination.
- Easy to use
- Low installation costs
- External grounding cable
- Pressure-compensation element
- EMC cable gland (for Aluminium version only)
- Tension spring connection
- Standard design (integrated bus termination) Version as active bus termination (integrated Power supply)
- Aluminum (Standard) and Stainless Steel version



NDJ120-NO, NDJ122-NO, NDJ130-NO, NDJ132-NO – PROFIBUS DP Junctions – Aluminium housing

Recommendation of mounting



Use ferrules!

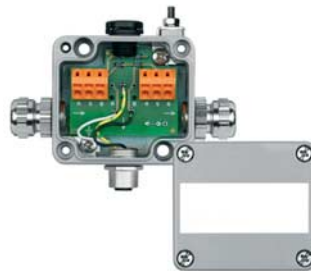


Technical data

Temperature range	
Operating temperature	-40...+85 °C (NDJ120-NO, NDJ130-NO) -25...+70 °C (Term 24 V: NDJ122-NO, NDJ132-NO)
Type of protection	IP 66
Material of housing	high-quality aluminium alloy (AL-Si 12)
Surface	stove-enamelled RAL 7001
PROFIBUS DP connection	tension spring 0.5...1.5 mm ²
Cable bushing	EMC cable gland M16
Clamping area	5.5...9.5 mm
Transmitter connector M12 x 1, 5pin, DP code	contacts brass, surface CuZnAu
Supply voltage Term 24 V	24 V DC +/-10%
Charing rate at supply unit 24 V DC	I _e = 10 mA +15% at bus utilisation until 32 participants
Spur lines (L _s) until 1500 kBit/s !	per spur max. 0.25 m, max. Over-all spur lines 6.60 m per DP segment

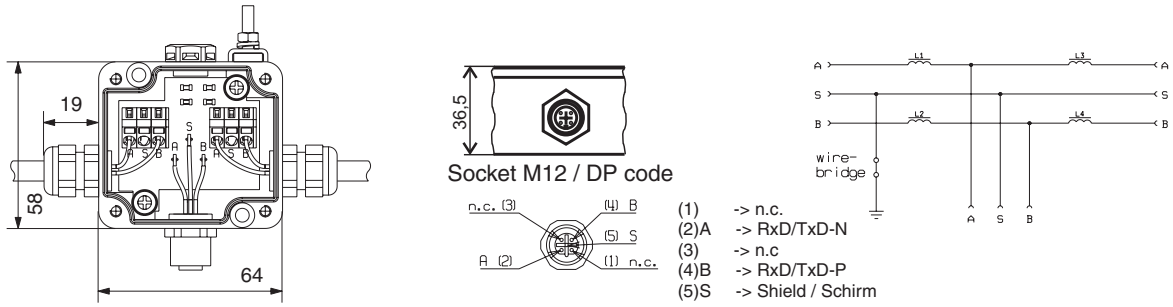
Installation advice

Torques	
M16 cable gland on housing	6.25 Nm
Coupling ring M16 cable gland	4.5 Nm
Adapter spur cable	hand tight
Housing cover	1.8...2.0 Nm
External earthing connection	1.8...2.0 Nm



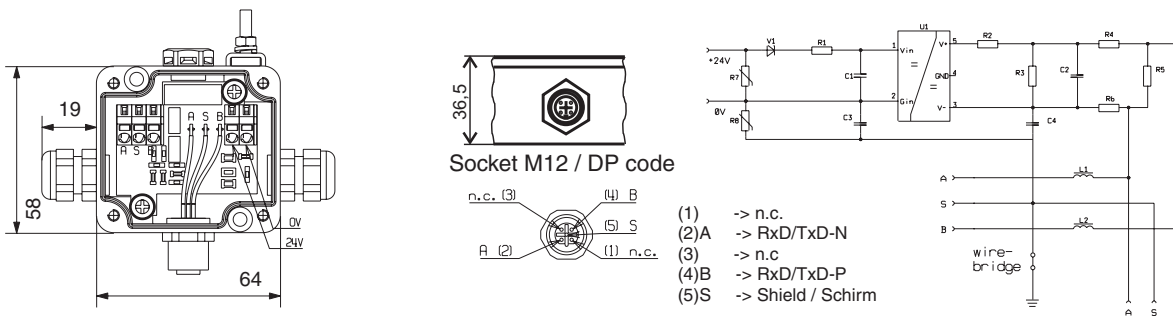
NDJ120-NO PROFIBUS DP Junction – Aluminium housing, without bus termination

The Transmitter (spur, 1-way) are connected using M12 connection.



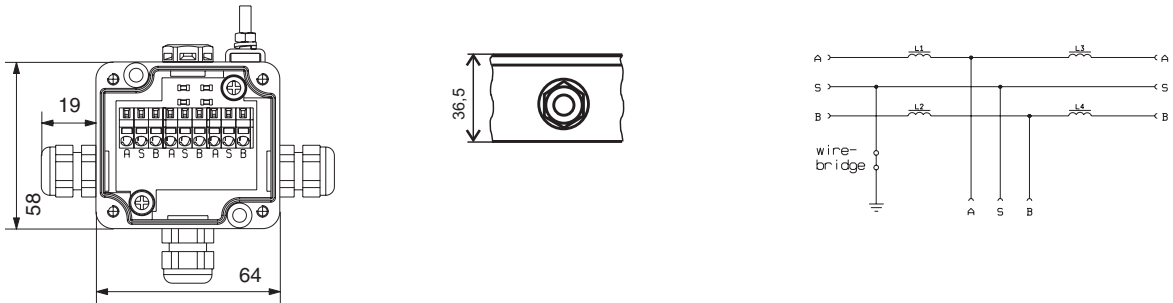
NDJ122-NO PROFIBUS DP Junction – Aluminium housing, with active bus termination (24 V DC)

The Transmitter (spur, 1-way) are connected using M12 connection.



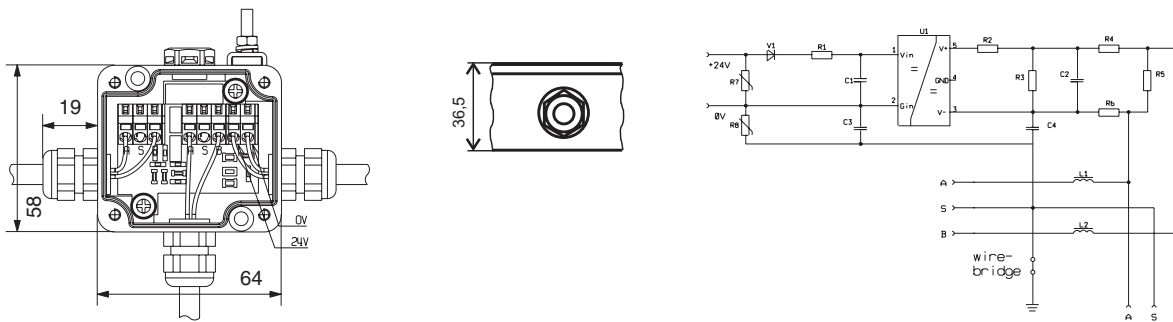
NDJ130-NO PROFIBUS DP Junction – Aluminium housing, without bus termination

The Transmitter (spur, 1-way) are connected using cable bushing.



NDJ132-NO PROFIBUS DP Junction – Aluminium housing, with active bus termination (24 V DC)

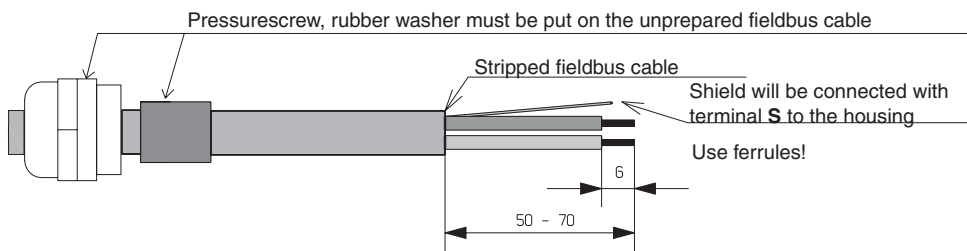
The Transmitter (spur, 1-way) are connected using cable bushing.



All drawings not scaled! All units in millimeter!

NDJ120-NOS, NDJ122-NOS – PROFIBUS DP Junctions – Stainless steel housing

Recommendation of mounting

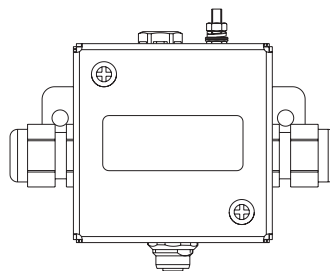


Technical data

Temperature range	-40...+85 °C (NDJ120-NOS)
Operating temperature	-25...+70 °C (Term 24 V: NDJ122-NOS)
Type of protection	IP 66
Material of housing	stainless steel 1.4571
Surface	polished
PROFIBUS DP connection	tension spring 0.5...1.5 mm ²
Cable bushing	plastic screwed cable gland M16
Clamping area	5.5...9.5 mm
Transmitter connector	M12 x 1, 5pin, DP code
Supply voltage Term 24 V	24 V DC +/-10%
Charing rate at supply unit 24 V DC	le = 10 mA +15% at bus utilisation until 32 participants
Spur lines (L _s) until 1500 kBit/s !	per spur max. 0.25 m, max. Over-all spur lines 6.60 m per DP segment

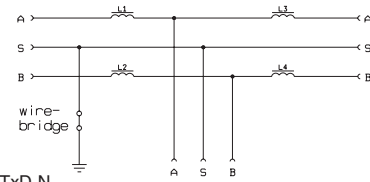
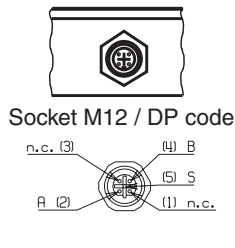
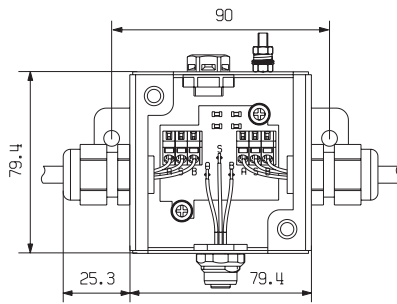
Installation advice

Torques	
M16 plastic screw cable gland on housing	3.75 Nm
Coupling ring M16 cable gland	2.5 Nm
Adapter spur cable	hand tight
Housing cover	1.8...2.0 Nm
External earthing connection	1.8...2.0 Nm



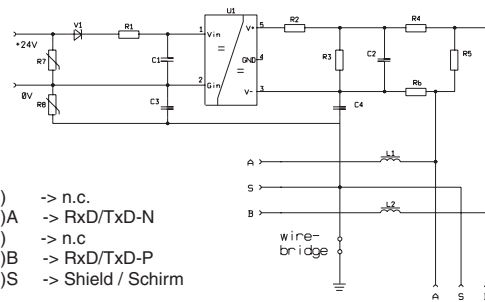
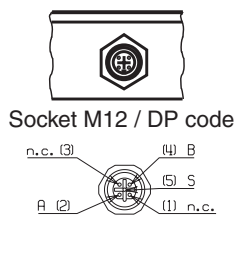
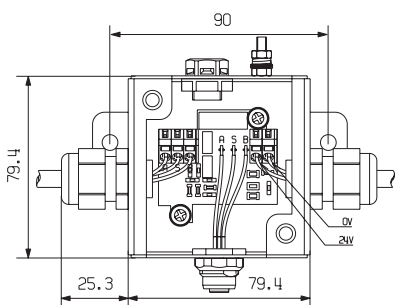
NDJ120-NOS PROFIBUS DP Junction – Stainless steel housing, without bus termination

The Transmitter (spur, 1-way) are connected using M12 connection.



NDJ122-NOS PROFIBUS DP Junction – Stainless steel housing, with active bus termination (24 V DC)

The Transmitter (spur, 1-way) are connected using M12 connection.



All drawings not scaled! All units in millimeter!

NDE100-NE PROFIBUS DP Plug – M12, metal case, for Ex (Haz.) and Non-Ex area



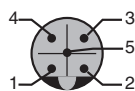
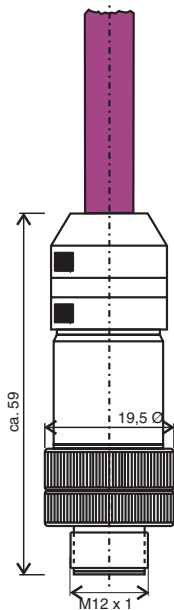
Technical data

Poles	5 Poles, DP code
Type of connection	screwed
Cross-sectional area of connection	0.75 mm ²
Connecting thread	M12
Contact surface	CuZnAu
Housing protection to DIN 40050 IEC 529	IP 67 with cable Ø 4...9 mm
Material of housing	Cu Zn surface nickel
Inflammability to UL-94	V-2
Operating temperature	-25 °C...+85 °C
Rated current per contact	3 A
Nominal voltage to	125 V ~ 150 V =
VDE standard 0110/ISO group C	KC 600
Tracking resistance	≤ 8 MΩ
Volume resistivity to IEC512 part 2	≥ 10 ¹² Ω
Insulation resistance to IEC 512 part 2	

Installation advice

Screw terminals	Torques
Coupling ring PG cable gland	0.4 Nm
Knurled screw	4.0 Nm
	hand-tight

Dimensions






Frontview of plug and socket connector

Male	wire-colour	bus	referenz
1	not used	n.c.	n.c.
2	green	RxD/TxD-N	A
3	not used	n.c.	n.c.
4	red	RxD/TxD-P	B
5		shield	S

All drawings not scaled! All units in millimeter!

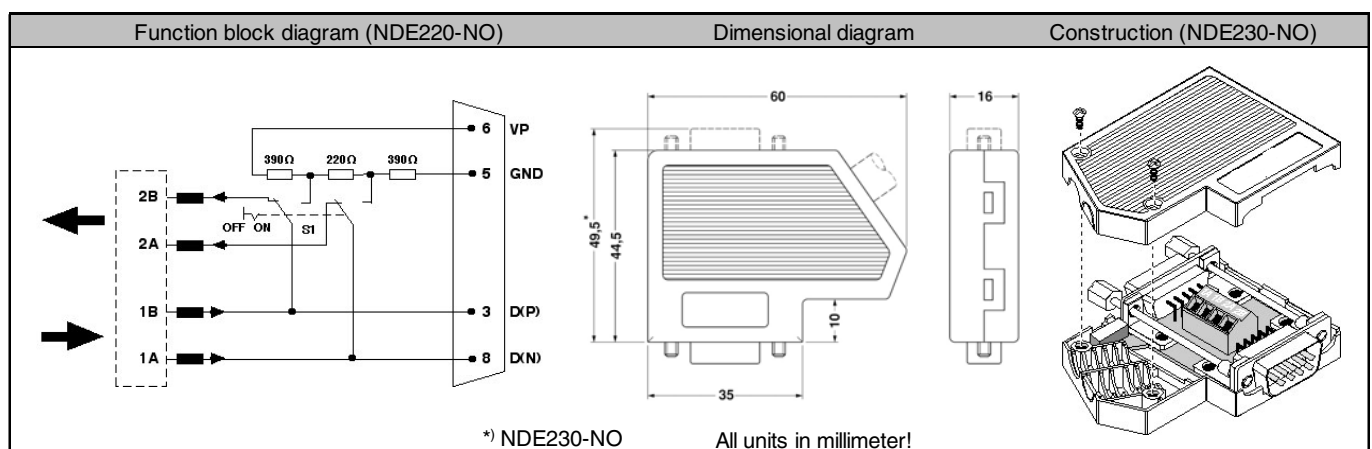
PROTECTION REMARK TO DIN 34 MUST BE OBSERVED

PROFIBUS DP Connectors			
			
	NDE210-NO	NDE220-NO	NDE230-NO
Application	PROFIBUS DP Connector	PROFIBUS DP Connector	PROFIBUS DP Connector
Internet	http://www.abb.com/Fieldbus	http://www.abb.com/Fieldbus	http://www.abb.com/Fieldbus
Industrial ^{IT} enabled Information Level	Yes	Yes	Yes

Connector	9-pos. D-SUB male connector	9-pos. D-SUB male connector	9-pos. D-SUB male connector
Programming connector	--	--	9-pos. D-SUB female connector
Terminal resistance	--	220 Ω / 390 Ω, resistor can be enabled externally	220 Ω / 390 Ω, resistor can be enabled externally
Cable feed	selectable right or left, 35 °	selectable right or left, 35 °	left, 35 °
Terminal blocks	Screw-cage	Screw-cage	Screw-cage
Conductor cross-section	solid: 0.14...1.5 mm ² , flexible: 0.14...1 mm ² , AWG: 26...16	solid: 0.14...1.5 mm ² , flexible: 0.14...1 mm ² , AWG: 26...16	solid: 0.14...1.5 mm ² , flexible: 0.14...1 mm ² , AWG: 26...16
Cable diameter	max. / min.: 8 mm (± 0.4 mm)	max. / min.: 8 mm (± 0.4 mm)	max. / min.: 8 mm (± 0.4 mm)
Bus cable	The connector is specified for cable type A according to EN 50 170 (see data sheet 10/63-6.46 EN)		

Temperature range	-20...+70 °C	-20...+70 °C	-20...+70 °C
Degree of protection	IP 40	IP 40	IP 40
Housing material	ABS, metal-plated	ABS, metal-plated	ABS, metal-plated
Connector cycles	> 200	> 200	> 200
Explosion protection	--	--	--
FISCO approval	--	--	--
Approval	CE acc. LVD (UL, C-UL in preparation)	CE (acc. LVD), UL, C-UL	CE (acc. LVD), UL, C-UL

Protocol	RS 485	RS 485	RS 485
Max. Baud Rate	12 Mbit/s	12 Mbit/s	12 Mbit/s
Max. voltage	60 V AC/DC	60 V AC/DC	60 V AC/DC
Max. current	1 A	1 A	1 A



NDZ411-NE (APG411) Protecting Cap for all plugs M12, plastic



NDZ413-NE (APG413) Protecting Cap for all sockets M12, plastic



Ordering information

PROFIBUS PA Junctions	Catalog No.		
NPJ120-NO (JPN120) (856406) PA T(one-way) junction, 2 x cable bushing and 1 x socket M12 incl. switchable bus termination	63644-9890101		
NPJ130-NO (JPN130) (856409) PA T(one-way) junction, 3 x cable bushing incl. switchable bus termination	63644-9890102		
NPJ420-NO (JPN420) (856408) PA four-way junction, 2 x cable bushing and 4 x socket M12 incl. switchable bus termination	63644-9890103		
NPJ460-NO (JPN460) (856411) PA four-way junction, 6 x cable bushing incl. switchable bus termination	63644-9890104		
NPJ120-EX (JPE120-Ex) (856415) PA T(one-way) junction, 2 x cable bushing and 1 x socket M12 for the Ex area	63644-9890105		
NPJ130-EX (JPE130-Ex) (856418) PA T(one-way) junction, 3 x cable bushing for the Ex area	63644-9890106		
NPJ420-EX (JPE420-Ex) (856417) PA four-way junction, 2 x cable bushing and 4 x socket M12 for the Ex area	63644-9890107		
NPJ460-EX (JPE460-Ex) (856420) PA four-way junction, 6 x cable bushing for the Ex area	63644-9890108		
NPZ100-EX (APE100-Ex) (860619) PA bus termination for the Ex area, for junction modules NPJ_ _0-EX	63644-9890120		
PROFIBUS PA Connectors			
NPE100-NE (EPG100) (945564) PA plug for cable, metal case, M12, for Ex and Non-Ex area	63644-9890115		
NPE300-NE (EPG300) (842622) PA socket for cable, metal case, M12, for Ex and Non-Ex area	63644-9890116		

Ordering information

PROFIBUS DP Junctions		Catalog No.		
NDJ120-NO (856435) DP T(one-way) junction, 2 x cable bushing and 1 x socket M12 without bus termination, aluminum housing		63644-9890109		
NDJ122-NO (856433) DP T(one-way) junction, 2 x cable bushing and 1 x socket M12 incl. active fix bus termination (24 V DC supply), aluminum housing		63644-9890110		
NDJ130-NO (856434) DP T(one-way) junction, 3 x cable bushing without bus termination, aluminum housing		63644-9890112		
NDJ132-NO (856429) DP T(one-way) junction, 3 x cable bushing incl. active fix bus termination (24 V DC supply), aluminum housing		63644-9890123		
NDJ120-NOS (871427) DP T(one-way) junction 2 x cable bushing (plastic) and 1 x socket M12 (Stainless steel) without bus termination, stainless steel housing		63644-9890111		
NDJ122-NOS (871425) DP T(one-way) junction 2 x cable bushing (plastic) and 1 x socket M12 (Stainless steel) incl. active fix bus termination (24 V DC supply), stainless steel housing		63644-9890124		
PROFIBUS DP connectors				
NDE210-NO (PCO 010) (2744597) DP plug, 9-pos. SUB-D, IP 40, max. 12 MBd, 35° cable outlet without bus termination		63644-9890117		
NDE220-NO (PCO 011) (2708232) DP plug, 9-pos. SUB-D, IP 40, max. 12 MBd, 35° cable outlet incl. switchable bus termination		63644-9890118		
NDE230-NO (PCO 012) (2708245) DP plug, 9-pos. SUB-D, IP 40, max. 12 MBd, 35° cable outlet incl. switchable bus termination, programming connection SUB-D		63644-9890119		
S900-BP910S DP plug for EEx i (blue!). For operating the intrinsic safety PROFIBUS DP max. 1.5 MBd, connectable terminating resistor		see list 17.5		
NDE100-NE (178479) DP plug for cable, metal case, M12, for Ex and Non-Ex area		63644-9890113		

PROFIBUS general accessories				
		Catalog No.		
NDZ411-NE (APG411) (178152) Packing unit 30 pcs. , Order quantity: 30, 60, 90, ...pcs. protecting cap for all plugs M12, plastic	Price and Catalog No. per cap	63644-9890121		
NDZ413-NE (APG413) (945605) Packing unit 30 pcs. , Order quantity: 30, 60, 90, ...pcs. protecting cap for all sockets M12, plastic	Price and Catalog No. per cap	63644-9890122		

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