The Weidmüller Catalogue System Industry 2002

Sectional catalogue 1:

Terminals 2002

W-Series
Z-Series
IDC-Series
SAK-Series
Ex Terminals - ATEX
Terminals in power supply applications
KLBÜ shield connection
Accessories

Sectional catalogue 2:

PCB Components 2002

PCB Terminals
PCB Connectors

Sectional catalogue 3:

Heavy Duty Connectors 2002

HA, HE, HD, HDD, HVE, HSB, DSTVK plus DSTV-HD-Series
ConCept
ModuFlex
HDC-Kits
Single contacts
Accessories
Cable glands

Sectional catalogue 4:

Electronics 2002

Terminal blocks with electronic components
Interface units
PLC system interface
Digital signal processing
Analogue signal processing
Power supply units
Overvoltage protection
Modules for different functions
Component holders and housings
Markers

Sectional catalogue 5:

Enclosures 2002

Mild steel enclosures
Die cast aluminium enclosures
Polyester GRP enclosures
Polycarbonate enclosures
Polystyrole enclosures
Assembly service
Cable glands
Accessories

Sectional catalogue 6:

Tools 2002

Certification of tools
Cutting tools
Stripping tools
Crimping tools
Screw driving tools
Testers
Automatic machines
Ferrules
Crimp sets
Special tools

Sectional catalogue 7:

Installation Products 2002

Connection markers
Conductor and cable markers
Equipment and installation markers
Labels
Marking systems
Cable ties
Installation products

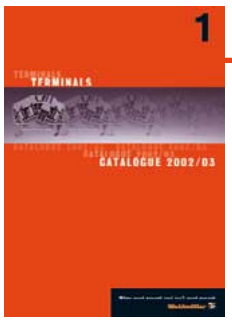
Sectional catalogue 8:

Fieldbus-Components 2002

SAI - Sensor-Actuator-Integrator
A well designed system for direct installation
SAI for passive system-cabling
SAI with plug-in connection hood
Cable available as piece part
SAI - Integrators in applications
SAI - Actuator-Integrator PASSIVE
SAI - Actuator-Integrator ACTIVE
PROFIBUS-PA T-Connector
Typical system layout
Applications

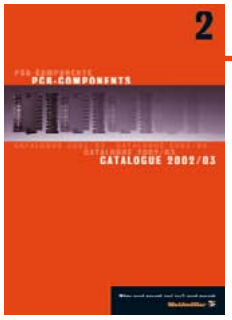
For further information on our worldwide activities please refer to the last pages of this catalogue.

The Weidmüller Catalogue System Industry 2002



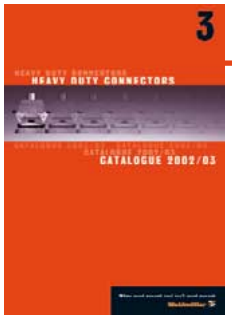
Sectional catalogue 1:

Terminals 2002
Cat. No. german: 5629090000
Cat. No. english: 5628980000



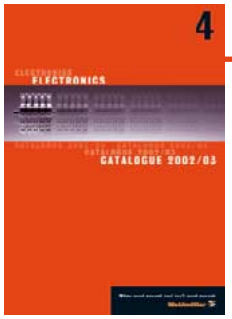
Sectional catalogue 2:

PCB Components 2002
Cat. No. german: 5629100000
Cat. No. english: 5628990000



Sectional catalogue 3:

Heavy Duty Connectors 2002
Cat. No. german: 5629110000
Cat. No. english: 5629000000

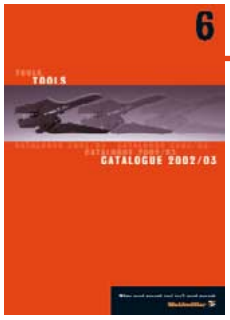


Sectional catalogue 4:

Electronics 2002
Cat. No. german: 5629120000
Cat. No. english: 5629010000

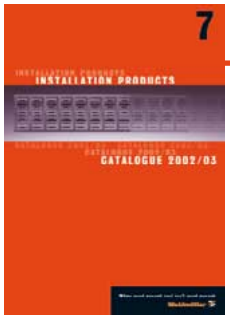
Sectional catalogue 5:

Enclosures 2002
Cat. No. german: 5629130000
Cat. No. english: 5629020000



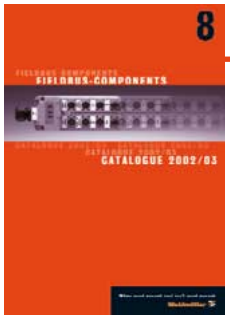
Sectional catalogue 6:

Tools 2002
Cat. No. german: 5629140000
Cat. No. english: 5629030000



Sectional catalogue 7:

Installation Products 2002
Cat. No. german: 5629150000
Cat. No. english: 5629040000



Sectional catalogue 8:

Fieldbus-Components 2002
Cat. No. german: 5629160000
Cat. No. english: 5629050000

Catalogue

Core Assortment 2002
Cat. No. german: 5629170000
Cat. No. english: 5629060000

Complete set of 8 sectional catalogues. German: Cat.No. 5629200000 / English: Cat.No. 5629190000. Addtional: Catalogue slip case only: 5619250000

Ordering hint
We now only use 10-digit catalogue numbers.
Please note: The four digits may refer to a product variation (for example: 102998 0000 = standard and 102998 1111 = associated variation).
Wherever possible, please utilise 10-digit numbers only.

Visit us on the World-Wide-Web

The official Weidmüller-Website contains information about the latest innovations, trade-show dates, press reports, certifications, software demos and much more.

www.weidmueller.com ...

... the address for up-to-date information

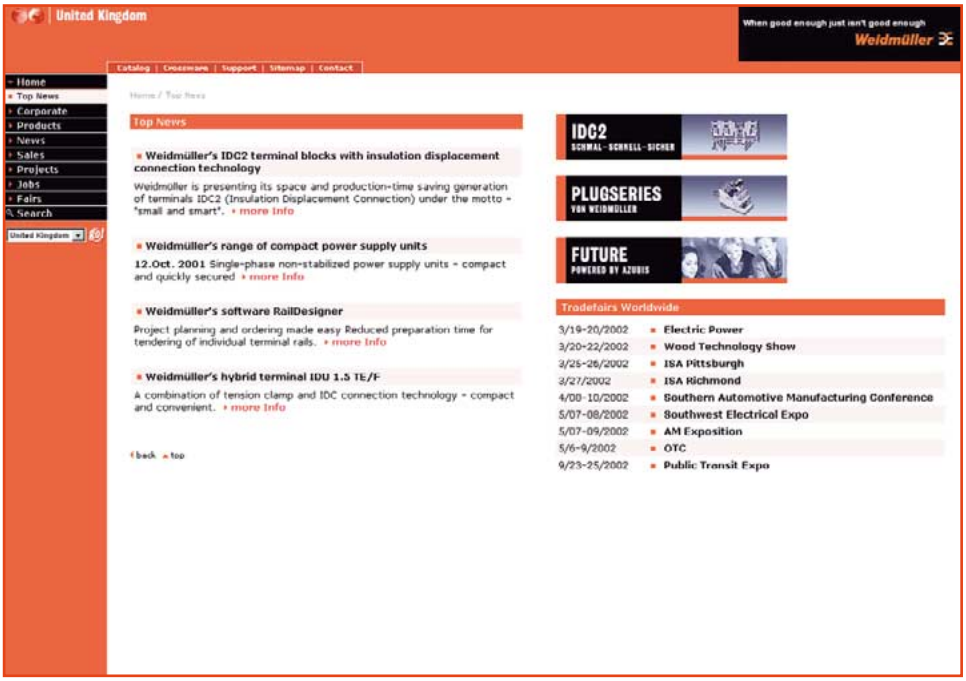


Table of contents

Product Overview

Sensor-Actuator-Interface

SAI-M-8

Page 8

SAI-4/6/8-M M12-
circular connectors

Page 10

SAI-4/6/8-M IDC
quick-fit connector

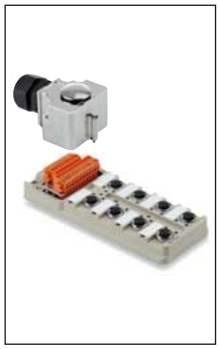
Page 12

SAI-4/6/8-M MS

Page 14

SAI-4/6/8-M MH

Page 14



SAI-4/6/8-M MD

Page 14

SAI-4/8-FMM M12

Page 15

SAI Passive 1:1

Page 18

SAI-E

Page 21

SAI-4 8P M12

Page 25

SAI active
distributor

Page 26 - 32

SAI AS Interface

Page 34

Accessories for Sensor-Actuator-Interface

ASi system accessories

Page 35

Connectors M8
Connectors M12

Page 36

Protective caps

Page 36

Connectors

Page 37

IDC connections
marker
IDC tool

Page 38

Connecting cables

Page 39

Product Overview

PROFIBUS-PA T-Connector

T-Connector standard
1 and 2-way
with M 12 connection
Page 52

T-Connector standard
1 and 2-way
with cable gland
Page 53

T-Connector standard
4 and 8-way
with M 12 connection
Page 54

T-Connector standard
4 and 8-way
with cable gland
Page 55

FBCon Bus Terminator
without earthing connection
with earthing connection
Page 62

T-Connector EEx (ia)
1 and 2-way
with M 12 connection
Page 64

T-Connector EEx (ia)
1 and 2-way
with cable gland
Page 65

T-Connector EEx (ia)
4 and 8-way
with M 12 connection
Page 66

T-Connector EEx (ia)
4 and 8-way
with cable gland
Page 67

T-Connector EEx (ia)
1-way
Page 68

T-Connector EEx (ia)
2 and 4-way
Page 69

Accessories for PROFIBUS-PA T-Connector

Locating
plug-in connector
Page 72

Cable plug
Page 72

Socket
Page 72

Profibus PA
Connecting cables
Page 73

Cable gland
PG 9
Page 74

Cable gland
EMC
Page 74

Cable gland
EEx
Page 74

User information

Sensor-Actuator-Interface

- SAI distributor with new metal enclosure
- Sensor-Actuator-Interface passive M8 and M12
- SAI active distributor Profibus DP, CANopen, DeviceNet and Interbus
- SAI active distributor ASi
- Cables and connectors
- Accessories for SAI distributors

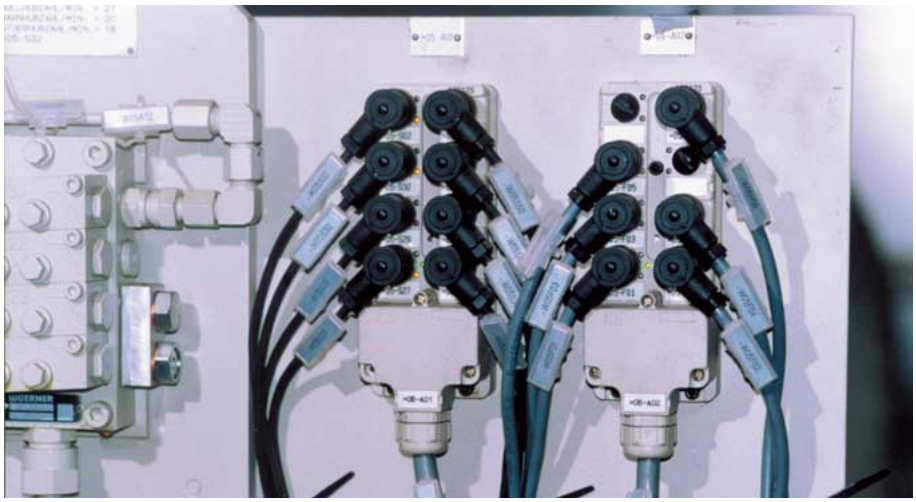
Sensor-Actuator-Interface with new metal enclosure

The new metal enclosure was developed for special applications.
It is made of die-cast zinc.

Sensor-Actuator-Interface

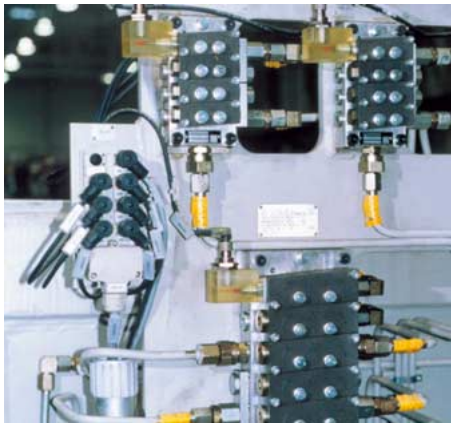
A well designed system for direct installation – without the need for a protective housing

Modern installation concepts should be designed to save material, costs, time, space, and weight. Products that meet these requirements are therefore absolutely essential.
Weidmüller's SAI distributors with four, six, or eight connectors are available in various versions. As M12 with 4 or 5-pole design, in M8 and IDC quick-fit connection in 3 or 4-pole design.
They are integrated into the relevant machine or plant by "direct installation", have a "flat" design, are sturdy and meet the IP 68 protection class (IP 67 HARAX®).



SAI distributors bundle the signals of sensors and actuators "in the field", reducing installation and service costs by use of pre-assembled cables off-the-shelf M8/M12 circularconnectors.
A common cable on the other side of the distributor connects with the control. Depending on the design variant of the SAI distributor, the common cable is permanently fixed in place (SAI-F) or may be connected to screw terminals or tension clamp connecting terminals (SAI-M). This version brings a proven enhancement of service comfort and a significant reduction in material costs: in the event of a fault on one of the cables, just one of the connecting terminals with the hood needs to be replaced – not the entire distributor.

Another practical detail: large labelling fields for individual labelling make service and maintenance work, as well as fault detection easier. The markers can be ordered separately and can be individually plotted. LEDs show the status.
This also minimises the down time.
M8 and metal distributors supplement the program.



Sensor-Actuator-Interface
for Passive System Cabling

SAI-M:

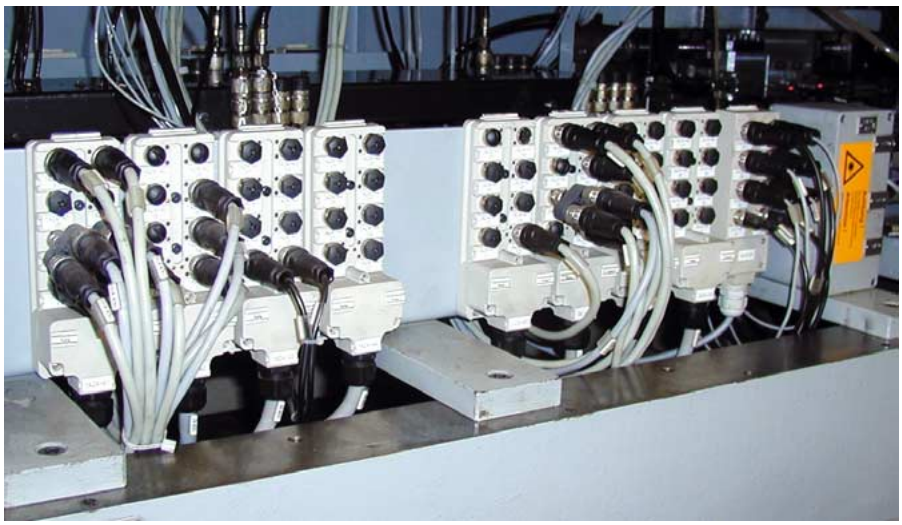
- Plugable connection module for common cables provides greater user flexibility in the field
- Integrated plugable potential isolation for two separate circuit potentials (e.g. for emergency stop applications)
- Easy to make vibration-proof connection in the field
- The captive screws – made of 8.8 steel – have slotted and cross-recessed heads
- M12 and Harax IDC connections
- 1 to 1 allocation available

SAI-F:

- Minimises installation work and wiring mistakes by using pre-assembled common cables
- Drag chain suitable common cable with polyurethane (PUR) outside insulation

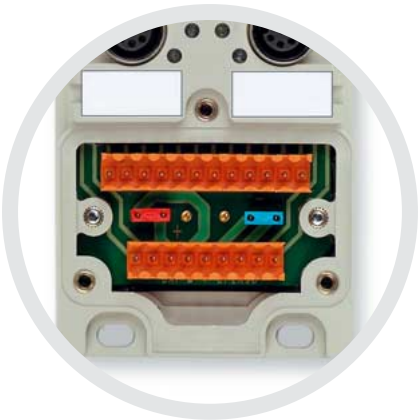
SAI-M16 / M23 in the SAI-M8:

- Easily accessible M8 connections.
- With M16, M23, tension clamp terminal or fixed cable variants.
- Pre-drilled mounting holes identical to the M12 distributors.
- Plugable version with choice of two exit directions.
- 3 and 4-pole version available.
- 4 and 8-channel version available



HARAX® is a registered trademark of Harting KGaA

Efficient connection concept
SAI distributor with plugable connection hood (SAI-M)



- An efficient solution: integrated connector in the connection hood
- Quick change of common cable
- Common cable can be pre-assembled
- Two connection systems for the common cable:
  Screw or tension clamp connection
- Very flat connection hood – not higher than the smallest angled M12 circular connector
- Economic: distributor and connection hood available separately
- Connection hood compatible with 4, 6 and 8-channel SAI distributors (extensions simply require the base module to be changed)
- M12 metal thread for sensor/actuator connection. The metal thread is durable and plugs can be screwed in more easily. Compared to plastic designs, damage due to cross-threading is not possible.
- Protection class IP 68 (IP 67 HARAX)
- Enclosure made of Pocan (PBT)
  - high dimensional stability
  - good electrical and mechanical properties
  - fire retardant without risk of dioxin or furan
  - resistant to coolants and lubricants
- UL / CSA approval
  for the M 12 SAI distributor
- SAI distributor available in class 3 of the German contaminant scale
- Option: Cable exit at top
- Weidmüller SAI distributors have the largest storage capacity in the connector hood on the market
- Connector sockets are integrated into the metal plate
  - faster and more reliable connection
- As accessory:
  Twin connector with two cables entries for self-assembly.
- Also available in metal

Connection cable as piece part
The distributors shown are accepted in engineering applications due to the ease of assembly.
The new drag chain suitable original common cables are now also available as piece parts. Their colour coding conforms to engineering standards. The connection hoods for M12 also have the same terminal connections, in this way only one cable variant (16x0.34 and 3x0.75) is required.

Advantages of common cables as piece part:

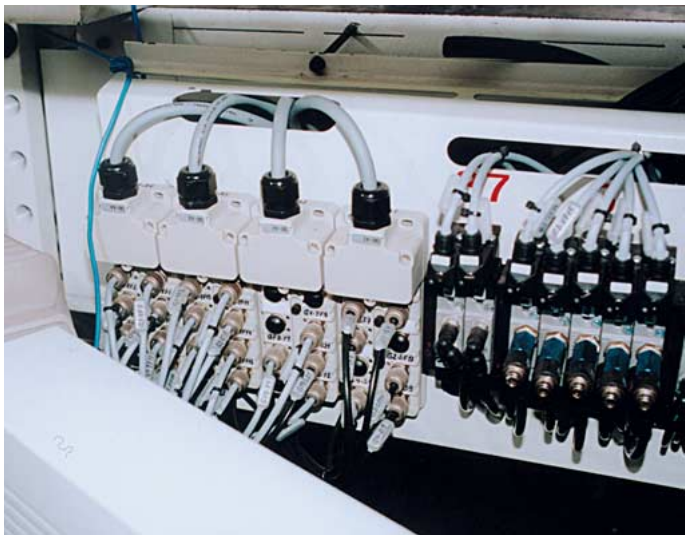
- Special lengths of common cable (e.g. more than 20 m)
- No waste from termination
- No storage of different cable lengths needed
- The SAI distributor is available with 4, 6 and 8-channels, as well as 4 or 5-pole, with M 12 connection or Harax quick-fit connection.
- As accessory:
  Twin connector with two cables entries for self-assembly.

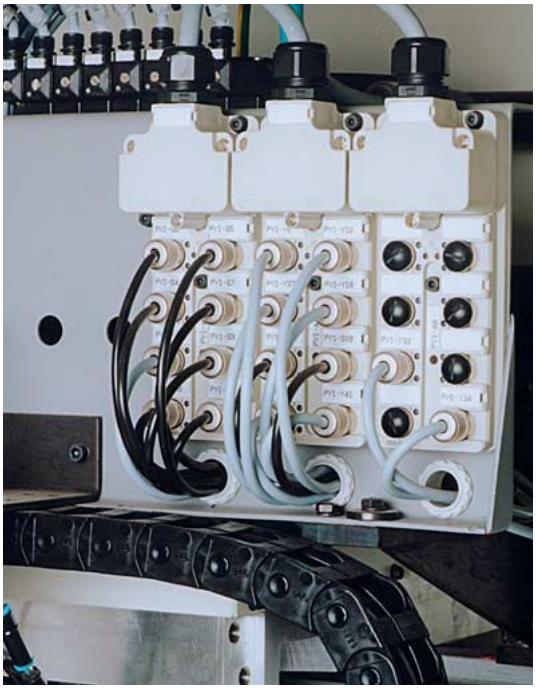
Common cable, distributor

Type	Cat. No	Qty.
SAIH-SLL-3 x 0.75 mm^2		
-16 x 0.34 mm^2	**9457560000**	1 m

Also available in required lengths.

SAI distributors in the application

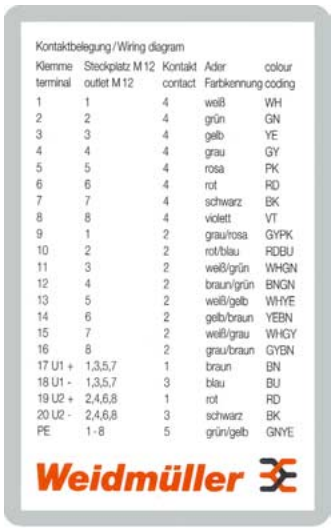




Assignment charts:

Weidmüller service:
cost-free assignment charts for your Weidmüller SAI distributors. These charts are of credit card size and laminated.
The contact assignment in the distributor can thus be easily seen. The allocation of the cable colours on the fixed cable distributors is "market standard".

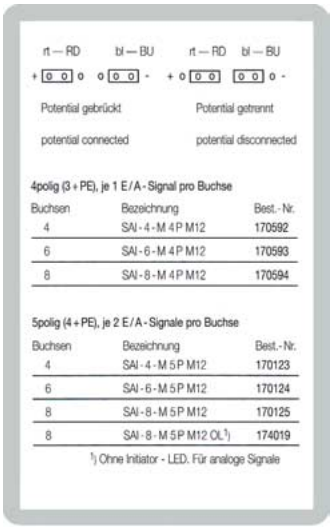
Please contact our sales team.



Kontaktbelegung / Wiring diagram

Klemme terminal	Steckplatz M 12 outlet M 12	Kontakt contact	Ader Farbkennung	colour coding
1	1	4	weiß	WH
2	2	4	grün	GN
3	3	4	gelb	YE
4	4	4	grau	GY
5	5	4	rosa	PK
6	6	4	rot	RD
7	7	4	schwarz	BK
8	8	4	violett	VT
9	1	2	grau/rosa	GYPK
10	2	2	rot/blau	RDBU
11	3	2	weiß/grün	WHGN
12	4	2	braun/grün	BNGN
13	5	2	weiß/gelb	WHYE
14	6	2	gelb/braun	YEBN
15	7	2	weiß/grau	WHGY
16	8	2	grau/braun	GYBN
17 U1 +	1,3,5,7	1	braun	BN
18 U1 -	1,3,5,7	3	blau	BU
19 U2 +	2,4,6,8	1	rot	RD
20 U2 -	2,4,6,8	3	schwarz	BK
PE	1 - 8	5	grün/gelb	GNYE

Weidmüller



rt — RD bl — BU rt — RD bl — BU

Potential gebrückt / potential connected

Potential getrennt / potential disconnected

4polig (3 + PE), je 1 E / A - Signal pro Buchse

Buchsen	Bezeichnung	Best.-Nr.
4	SAI - 4 - M 4 P M12	170592
6	SAI - 6 - M 4 P M12	170593
8	SAI - 8 - M 4 P M12	170594

5polig (4 + PE), je 2 E / A - Signale pro Buchse

Buchsen	Bezeichnung	Best.-Nr.
4	SAI - 4 - M 5 P M12	170123
6	SAI - 6 - M 5 P M12	170124
8	SAI - 8 - M 5 P M12	170125
8	SAI - 8 - M 5 P M12 OL[1])	174019

[1]) Ohne Initiator - LED. Für analoge Signale

Sensor-Actuator-Interface

Technical notes on the initiator cables

SAI M12 distributors:

The distributors are available in 4 and 5-pole versions. With the 4-pole distributors Pin 2 is not used for cost reasons.

The designation is as follows:
Pin 1 = +
Pin 2 = normally closed
Pin 3 = -
Pin 4 = normally open
Pin 5 = PE

If a 4-pole SAI distributor is used, and a normally closed contact is required in the plant, a cable must be used to bridge between pins 2 and 4 in the socket. In this case the connection makes the use of changeover contacts useless as they are short-circuited.

M8 cables:

With M8 cables there are two different locking systems:

- The screw lock
  This locking mechanism comes from the M12 world. Advantage is that the cables are held fast, disadvantage is that the assembly via the knurled nut is more involved.
- The snap-on lock
  provides a fast connection, as a knurled nut is not used.
  The disadvantage is that the plug can be mistakenly pulled out, as it is not securely locked.

M8 cables are available only in 3 and 4-pole versions. Note that the 3-pole cables are not pin compatible with the 4-pole version.

Twin cables:

It is basically possible to connect two sensor cables through one M12 plug to the distributor. For cost, logistics and visibility reasons, this is not advised. Necessary components for this are, however, available from us. This application in machine manufacture is a rare exception.

4-pole:

The 4-pole socket of the **SAI distributor** is equipped with pins: 1, 3, 4, 5.
The 4-pole **SAI plugs** are fitted with pins: 1, 2, 3, 4.
This is the market standard.
Particular attention should therefore be paid to the connections on 4-pole plugs or distributors.

Initiator cables with LEDs:

As a basis, yellow and green LEDs are used. The green LED shows status and the yellow LED, power supply. Red LEDs are hardly ever used in this position.

Self-assembly plug-in connectors:

These plugs are available from stock in many versions. In most cases, the 5-pole straight version is used.

Actuator cables:

There are five different valve plugs to choose from:

- Version A
  Contact distance 18 mm
- Version B industrial
  Contact distance 11 mm
- Version B DIN
  Contact distance 10 mm
- Version C industrial
  Contact distance 9.4 mm
- Version C DIN
  Contact distance 8.0 mm

In addition the exit direction is important. 0 degree versions are available from us. This means that the cable exit direction is by the PE contact.

Connections:
As standard, actuator cables are equipped with a free-wheeling diode and a status LED.

Application of M8 distributors:

M8 distributors offer advantages due to their small dimensions. However, the following conditions must be taken into account:
On M8 connectors there is no PE according to the standards. For this reason special PE precautions are to be made in the machine on the usage of actuators with PE. 3 and 4-pole M8 connectors are not pin compatible.
The 3-pole M8 corresponds to the 4-pole M12 distributor in terms of its applications.
For the usage of M8 distributors and active distributors, we recommend our SAI Combi.
See page 24.

SAI-M8 distributor

- Small size,
  easily accessible M8 connections

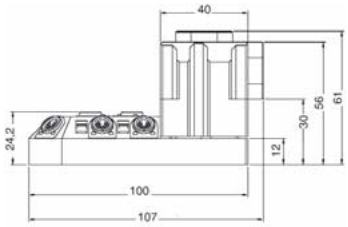
M8-SAI distributors from Weidmüller are distinguished by being **easy to use** and their small size.
This has been achieved by patent protected design and construction.
It is still the only distributor on the market that is equipped with tension clamp connection. This is why it is easy to work with on site.

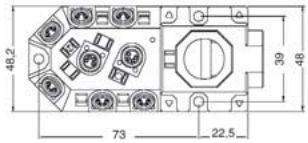
- Easily accessible M8 connections.
- With hood version, M23/M16 version or as fixed cable variant.
- Pre-drilled mounting holes identical to the M12 distributors. (industry standard)
- Plugable design of the common cable with choice of two exit directions.
- M12 version available with 4 and 8-channels.
- 3 and 4-pole version available.

Technical data

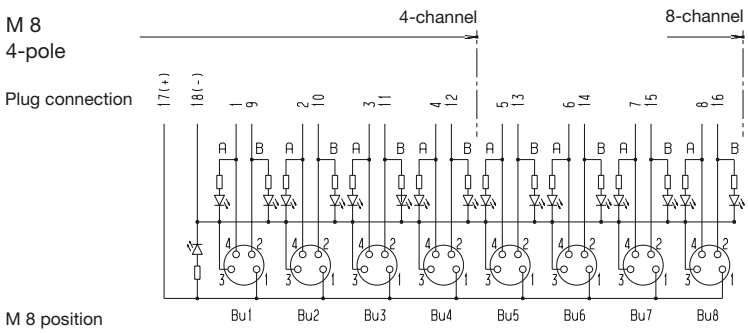
Insulating material:		Pocan
Flammability class:		UL 94 V0
Temperature range:		-20...90°C
Colour:	Enclosure	RAL 7032
	M 20 and contact carrier:	black
Current carrying capacity:		2A per contact
Protection class:		IP 67(IP 68)
Possible insulation outside diameter on tension clamp variant (M20):		10-14mm
Function indicators	Operating voltage:	green
	Initiator function:	yellow

SAI M8 M





Block diagram for SAI-4/8-M 4P M8 (4-pole)

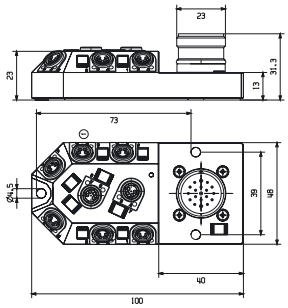


Ordering information

Type	Cat. No.
3-pole	
SAI-4-M 3P M8	**1784680000**
SAI-8-M 3P M8	**1784670000**
4-pole	
SAI-4-M 4P M8	**1784700000**
SAI-8-M 4P M8	**1784690000**

Sensor-Actuator-Interface PASSIVE

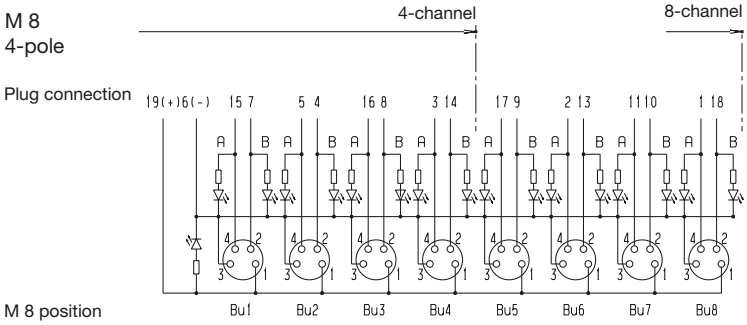
SAI M8 M23



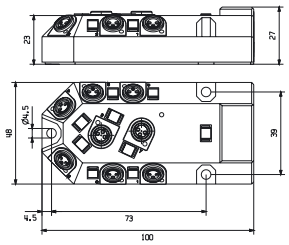
Ordering information

Type	Cat. No.
4-pole	
SAI-4-M23 4P M8	**1784660000**
SAI-8-M23 4P M8	**1784650000**

Block diagram for SAI-4/8-M23 4P M8 (4-pole)



SAI M8 F



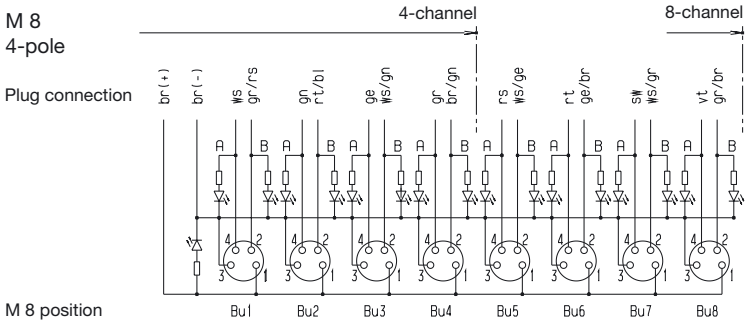
Ordering information

Type	Cat. No.
3-pole	
SAI-4-F 3P M8 PUR 5M	**1784640000**
SAI-4-F 3P M8 PUR 10M	**1784630000**
SAI-8-F 3P M8 PUR 5M	**1784620000**
SAI-8-F 3P M8 PUR 10M	**1784610000**

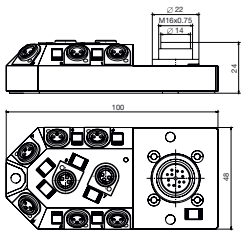
Ordering information

Type	Cat. No.
4-pole	
SAI-4-F 4P M8 PUR 5M	**1784600000**
SAI-4-F 4P M8 PUR 10M	**1784590000**
SAI-8-F 4P M8 PUR 5M	**1784580000**
SAI-8-F 4P M8 PUR 10M	**1784570000**

Block diagram for SAI-4/8-F 4P M8 (4-pole)



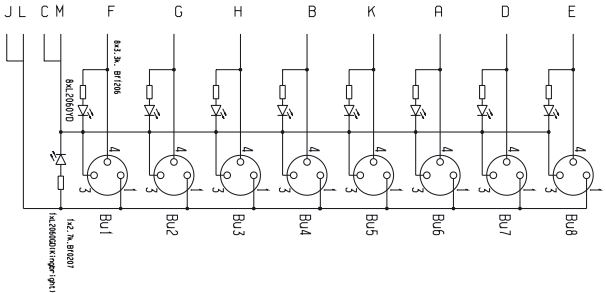
SAI-M8 with M16 exit 8-channel, 3-pole



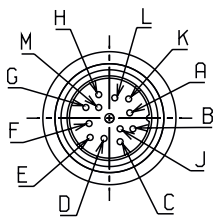
Ordering information

Type	Cat. No.
3-pole	
SAI-8-M16 3P M8	**1795900000**

Block diagram for SAI-8-M16 3P M8

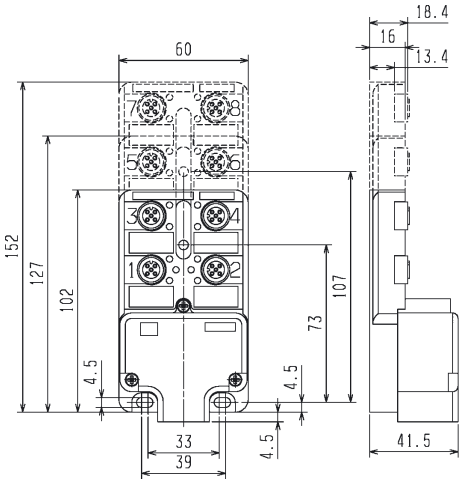


Flange connector



SAI-4/6/8-M M12-circular connectors

Graphic:
without hood



SAI-M M12 circular connectors:

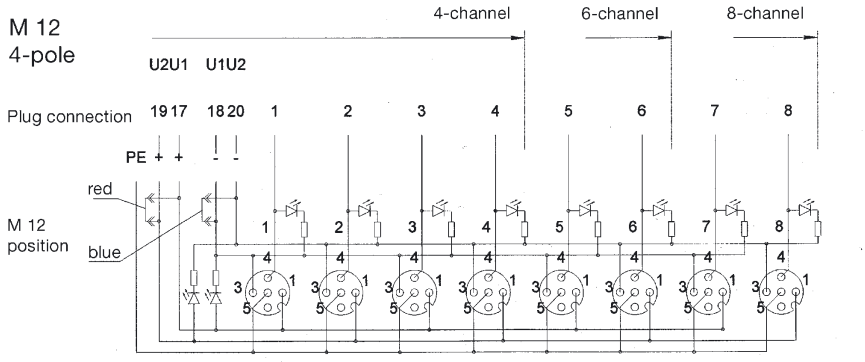
- Plugable connection module for common cables provides greater user flexibility in the field
- Three sizes for 4, 6 and 8 connector positions
- 4-pole (3+PE) version with 1 I/O signal per connector position, and 5-pole (4+PE) version with 2 I/O signals per connector position
- Optional base (UT) and mounting hood (MH) individually available
- 4- and 5-pole versions
- Standardised connectors and pin assignment
- Minimises installation work and wiring mistakes by using pre-assembled sensor/actuator cables
- Protection class IP 68 compliant
- UL and CSA approved

Factory setting
(see connection diagram)
Potential bridged

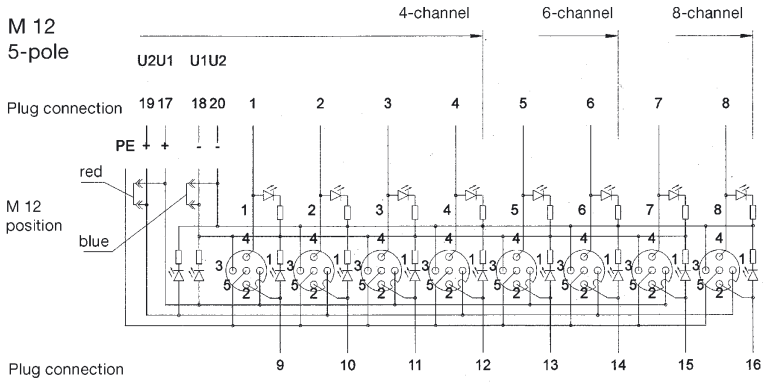
Potential isolated

Block diagram for SAI-M

SAI-4/6/8-M 4P (4-pole)



SAI-4/6/8-M 5P (5-pole)



Ordering information

4-pole

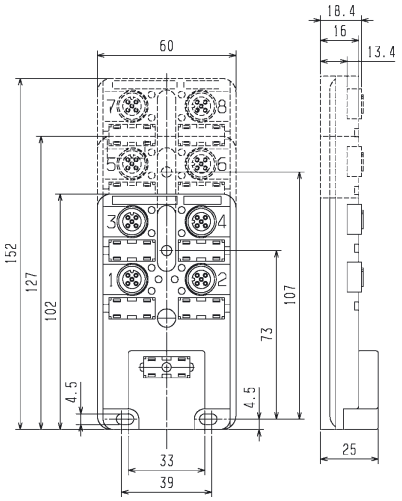
Designation	Cat. No.	Connector pos.	Qty
Complete modules			
SAI-4-M 4P M12	**1705920000**	4	1
SAI-6-M 4P M12	**1705930000**	6	1
SAI-8-M 4P M12	**1705940000**	8	1
Bases			
SAI-4-M 4P M12 UT	**1705921000**	4	1
SAI-6-M 4P M12 UT	**1705931000**	6	1
SAI-8-M 4P M12 UT	**1705941000**	8	1
Mounting hood			
SAI-4/6/8-MH BL 3,5	**1724750000**	-	1
SAI-4/6/8-MH BLZF 3,5	**1752080000**	-	1

5-pole

Designation	Cat. No.	Connector pos.	Qty
Complete modules			
SAI-4-M 5P M12	**1701230000**	4	1
SAI-6-M 5P M12	**1701240000**	6	1
SAI-8-M 5P M12	**1701250000**	8	1
Without initiator LED. For analogue signals.			
SAI-4-M 5P M12 OL	**1800000000**	4	1
SAI-8-M 5P M12 OL	**1740190000**	8	1
Tension clamp connection			
SAI-8-M 5P M12 SK3 ZF	**1767880000**	8	1
Bases			
SAI-4-M 5P M12 UT	**1701231000**	4	1
SAI-6-M 5P M12 UT	**1701241000**	6	1
SAI-8-M 5P M12 UT	**1701251000**	8	1
Without initiator LED. For analogue signals.			
SAI-8-M 5P M12 OL UT	**1740191000**	8	1
Compact modules NPN-switched			
SAI-8-M 5P NPN	**1781060000**	8	1

Sensor-Actuator-Interface PASSIVE

SAI-4/6/8-F M12-circular connectors

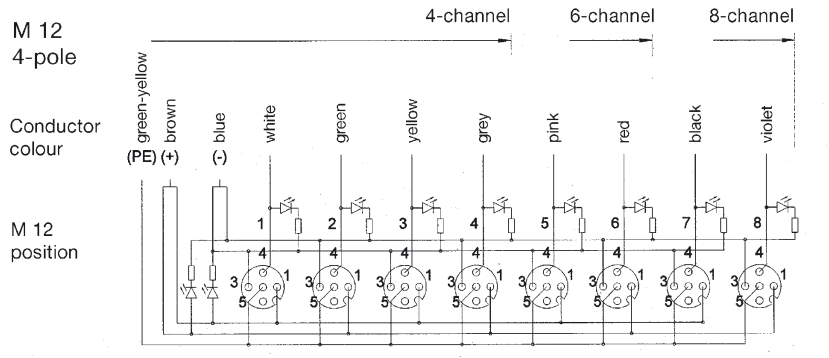


SAI-M M12 circular connectors:

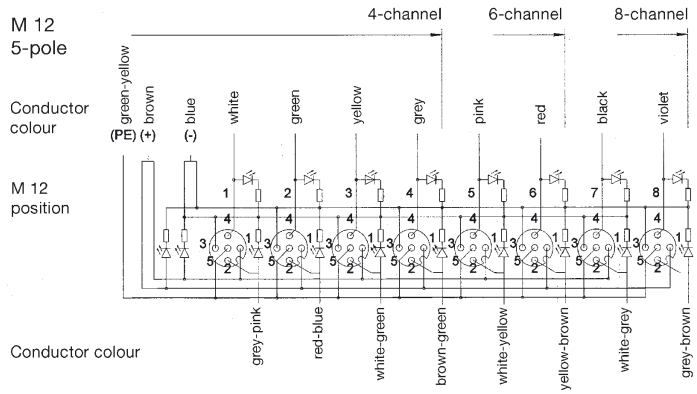
- Minimises installation work and wiring mistakes by using pre-assembled common cables
- Three sizes for 4, 6 and 8 connector positions
- Extremely flexible, drag chain suitable common cable with polyurethane (PUR/PVC) outside insulation 3 x 0.75 mm^2/ n x 0.34 mm^2
- 4-pole (3+PE) version with 1 I/O signal per connector position, and 5-pole (4+PE) version with 2 I/O signals per connector position
- 4- and 5-pole versions
- Standardised connectors and pin assignment
- Minimises installation work and wiring mistakes by using pre-assembled sensor/actuator cables
- Protection class IP 68 compliant
- UL and CSA approved

Block diagram for SAI-F M12

SAI-4/6/8-F 4P (4-pole)



SAI-4/6/8-F 5P (5-pole)



Note:
Colour coding
see page 23

Ordering information

4-pole

Designation	Cat. No.	Connector pos.	Qty
SAI-4-F 4P PUR 3M	**9456180000**	4	5
SAI-4-F 4P PUR 5M	**9456190000**	4	4
SAI-4-F 4P PUR 10M	**9456200000**	4	3
SAI-4-F 4P PUR 15M	**9456210000**	4	2
SAI-4-F 4P PUR 20M	**9456230000**	4	1
SAI-6-F 4P PUR 3M	**9456460000**	6	5
SAI-6-F 4P PUR 5M	**9456470000**	6	4
SAI-6-F 4P PUR 10M	**9456480000**	6	3
SAI-6-F 4P PUR 15M	**9456490000**	6	2
SAI-6-F 4P PUR 20M	**9456510000**	6	1
SAI-8-F 4P PUR 3M	**9456740000**	8	5
SAI-8-F 4P PUR 5M	**9456750000**	8	4
SAI-8-F 4P PUR 10M	**9456760000**	8	3
SAI-8-F 4P PUR 15M	**9456770000**	8	2
SAI-8-F 4P PUR 20M	**9456790000**	8	1

5-pole

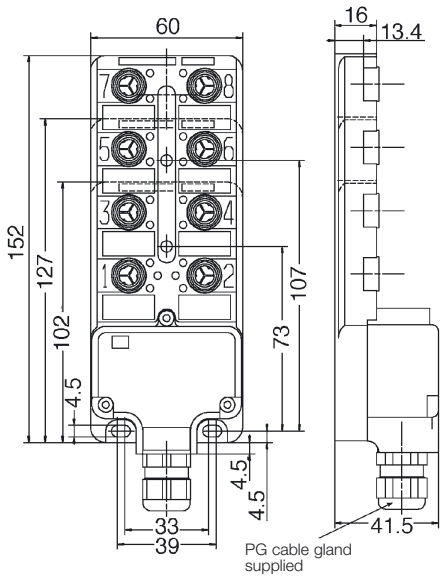
Designation	Cat. No.	Connector pos.	Qty
SAI-4-F 5P PUR 3M	**9456320000**	4	5
SAI-4-F 5P PUR 5M	**9456330000**	4	4
SAI-4-F 5P PUR 10M	**9456340000**	4	3
SAI-4-F 5P PUR 15M	**9456350000**	4	2
SAI-4-F 5P PUR 20M	**9456370000**	4	1
SAI-6-F 5P PUR 3M	**9456600000**	6	5
SAI-6-F 5P PUR 5M	**9456610000**	6	4
SAI-6-F 5P PUR 10M	**9456620000**	6	3
SAI-6-F 5P PUR 15M	**9456630000**	6	2
SAI-6-F 5P PUR 20M	**9456650000**	6	1
SAI-8-F 5P PUR 3M	**9456880000**	8	5
SAI-8-F 5P PUR 5M	**9456890000**	8	4
SAI-8-F 5P PUR 10M	**9456900000**	8	3
SAI-8-F 5P PUR 15M	**9456910000**	8	2
SAI-8-F 5P PUR 20M	**9456930000**	8	1
SAI-8-F 5 P-PUR 0,5/1,0 2M	**7915030000** 1)	8	4
SAI-8-F 5 P-PUR 0,5/1,0 5M	**9457590000** 1)	8	4
SAI-8-F 5 P-PUR 0,5/1,0 10M	**9457600000** 1)	8	4
SAI-8-F 5 P-PUR 0,5/1,0 15M	**1784510000** 1)	8	4
SAI-8-F 5 P-PUR 0,5/1,0 20M	**1784500000** 1)	8	4

other lengths and cable structures on request

1) With strengthened cable 16 x 0.5 mm^2 + 3 x 1 mm^2

SAI-4/6/8-M HARAX® IDC quick-fit connector

Graphic:
without hood



SAI-M HARAX® IDC quick-fit connector:

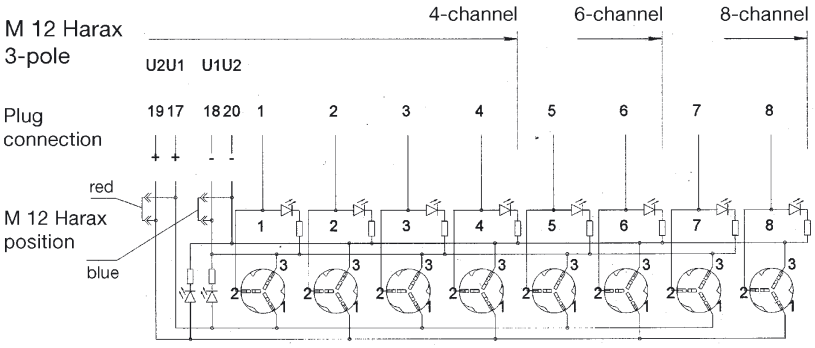
- Plugable connection module for common cables provides greater user flexibility in the field
- Three sizes for 4, 6 and 8 connector positions
- 3-pole version with 1 I/O signal per connector position, and 4-pole version with 2 I/O signals per connector position
- 3- and 4-pole versions
- Individual assembly of sensor/actuator cables in the field
- Safe and fast connections with HARAX® connection elements
- Protection class IP 67 compliant

Factory setting
(see connection diagram)
Potential bridged

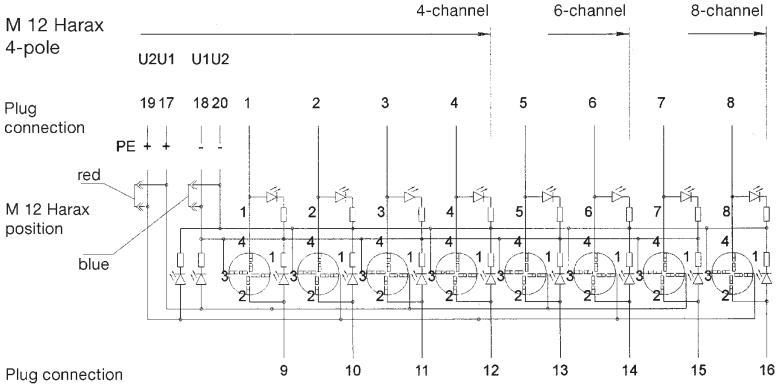
Potential isolated

Block diagram for SAI-M IDC

SAI-4/6/8-M 3P (3-pole)



SAI-4/6/8-M 4P (4-pole)



Ordering information

Complete modules 3-pole

Designation	Cat. No.	Connector pos.	Qty
SAI-4-M 3P IDC	**1760040000**	4	1
SAI-6-M 3P IDC	**1760050000**	6	1
SAI-8-M 3P IDC	**1760060000**	8	1

Bases

Designation	Cat. No.	Connector pos.	Qty
SAI-4-M 3P IDC UT	**1760041000**	4	1
SAI-6-M 3P IDC UT	**1760051000**	6	1
SAI-8-M 3P IDC UT	**1760061000**	8	1

Complete modules 4-pole

Designation	Cat. No.	Connector pos.	Qty
SAI-4-M 4P IDC	**1766780000**	4	1
SAI-6-M 4P IDC	**1766790000**	6	1
SAI-8-M 4P IDC	**1766800000**	8	1

Bases

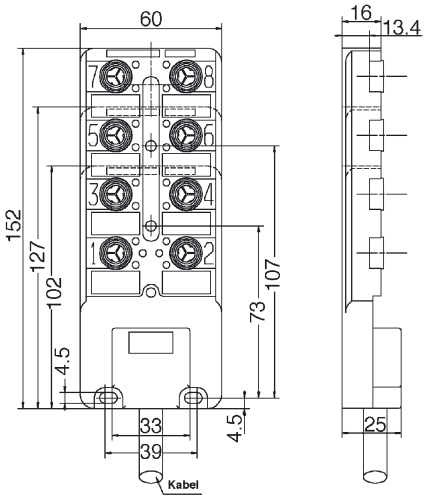
Designation	Cat. No.	Connector pos.	Qty
SAI-4-M 4P IDC UT	**1766781000**	4	1
SAI-6-M 4P IDC UT	**1766791000**	6	1
SAI-8-M 4P IDC UT	**1766801000**	8	1

Complete modules 4-pole with PE (3 + PE)

Designation	Cat. No.	Connector pos.	Qty
SAI-8-M 4P IDC PE	**1804540000**	8	1

Sensor-Actuator-Interface PASSIVE

SAI-4/6/8-F HARAX® IDC quick-fit connector



SAI-F:

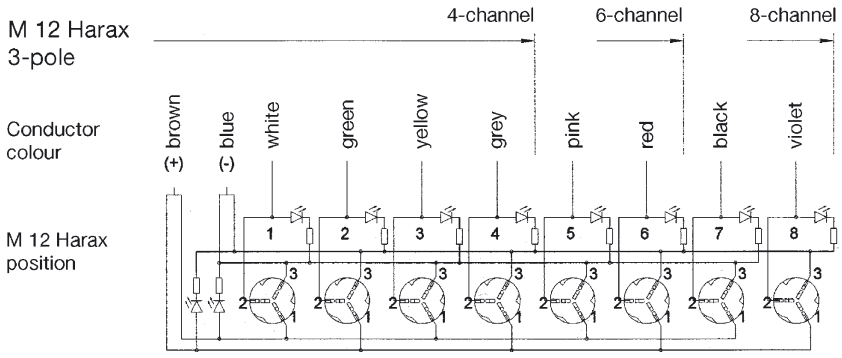
- Minimises installation work and wiring mistakes by using pre-assembled common cables
- Three sizes for 4, 6 and 8 connector positions
- Extremely flexible, drag chain suitable common cable with polyurethane (PUR/PVC) outside insulation
  2 x 0.75 mm^2/ n x 0.34 mm^2
- 3-pole version with 1 I/O signal per connector position, and 4-pole version with 2 I/O signals per connector position

IDC HARAX® quick-fit connector:

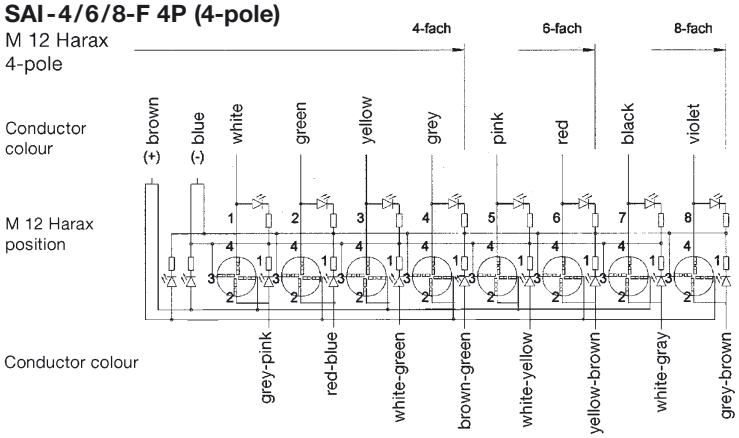
- 3- and 4-pole versions
- Individual assembly of sensor/actuator cables in the field
- Safe and fast connections with HARAX® connection elements
- Protection class IP 67 compliant

Block diagram for SAI-F IDC

SAI-4/6/8-F 3P (3-pole)



SAI-4/6/8-F 4P (4-pole)



Note:
Colour coding
see page 23

Ordering information

3-pole

Designation	Cat. No.	Connector pos.	Qty
SAI-4-F 3P IDC PUR 5M	**1766720000**	4	4
SAI-4-F 3P IDC PUR 10M	**1766730000**	4	3
SAI-6-F 3P IDC PUR 5M	**1766740000**	6	4
SAI-6-F 3P IDC PUR 10M	**1766750000**	6	3
SAI-8-F 3P IDC PUR 5M	**1766760000**	8	4
SAI-8-F 3P IDC PUR 10M	**1766770000**	8	3

4-pole

Designation	Cat. No.	Connector pos.	Qty
SAI-4-F 4P IDC PUR 5M	**1766660000**	4	4
SAI-4-F 4P IDC PUR 10M	**1766670000**	4	3
SAI-6-F 4P IDC PUR 5M	**1766680000**	6	4
SAI-6-F 4P IDC PUR 10M	**1766690000**	6	3
SAI-8-F 4P IDC PUR 5M	**1766700000**	8	4
SAI-8-F 4P IDC PUR 10M	**1766710000**	8	3

other lengths and cable structures on demand

Sensor-Actuator-Interface for Special Applications

Screened cable, e.g. for analogue initiators

With certain applications it is necessary to have a continuous screen from the sensor to the control level. Using SAI distributors in such applications, it is necessary to ensure continuation of the screen from the M12 initiator cable to the screened common cable. This condition is satisfied by the use of the metal SAI distributor. Included with the distributors are EMC cable glands. LEDs are not incorporated.

Especially thick common cable

In certain cases it is useful to utilise a common cable that is the standard by the machine manufacturer. This cable has a relatively large outside diameter. Furthermore, this type of cable requires a large area.
Of particular importance is the possibility here to exit through an existing top cable exit.

SAI-4/6/8 MMS SAI-4/6/8 MM

SAI-4/6/8 MMS with EMC cable gland in metal enclosure

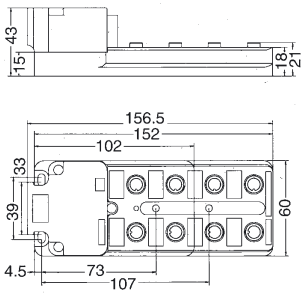
Designation	Cat. No.
4-pole	
SAI-4-MMS 4P M12	**1783540000**
SAI-8-MMS 4P M12	**1783530000**
5-pole	
SAI-4-MMS 5P M12	**1783520000**
SAI-8-MMS 5P M12	**1783510000**

Especially tough environments, where plastic is non-preferred:

In certain cases it makes sense to avoid the use of plastics. In these cases, a distributor made completely from metal is required that can be connected to others using metal cable glands, without additional connection of the screen.

SAI-4/6/8 MM with standard cable gland in metal enclosure

Designation	Cat. No.
4-pole	
SAI-4-MM 5P M12	**1783500000**
SAI-8-MM 5P M12	**1783490000**



SAI-4/6/8 MH

Cable gland: M20

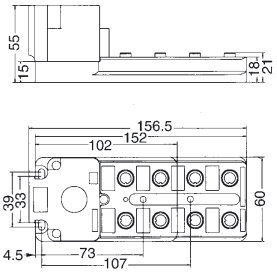
For cables with outside insulation diameter from 10 mm to 14 mm

Ordering information

Designation	Cat. No.
4-pole	
SAI-4-MH 4P M12	**1705922000**
SAI-6-MH 4P M12	**1705932000**
SAI-8-MH 4P M12	**1705942000**
5-pole	
SAI-4-MH 5P M12	**1701232000**
SAI-6-MH 5P M12	**1701242000**
SAI-8-MH 5P M12	**1701252000**

The SAI distributor with M20 cable gland is suitable for, among others, the following types of cable:

- 14 x 0.5 mm^2 to 16 x 0.5 mm^2
- 8 x 0.75 mm^2 to 15 x 0.75 mm^2
- 8 x 1 mm^2 to 10 x 1 mm^2
- 5 x 1.5 mm^2 to 7 x 1.5 mm^2



SAI-4/6/8 MHD

Cable gland: M25

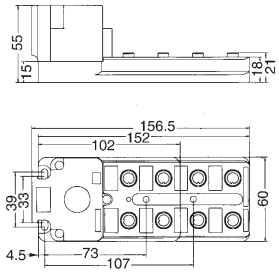
For cables with outside insulation diameter from 13 mm to 18 mm

Ordering information

Designation	Cat. No.
4-pole	
SAI-4-MHD 4P M12	**1705923000**
SAI-6-MHD 4P M12	**1705933000**
SAI-8-MHD 4P M12	**1705943000**
5-pole	
SAI-4-MHD 5P M12	**1701233000**
SAI-6-MHD 5P M12	**1701243000**
SAI-8-MHD 5P M12	**1701253000**

The SAI distributor with M25 cable gland is suitable for, among others, the following types of cable:

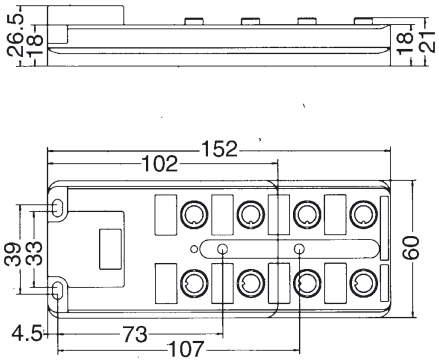
- 21 x 0.5 mm^2
- 18 x 0.75 mm^2 to 21 x 0.75 mm^2
- 14 x 1 mm^2 to 20 x 1 mm^2
- 8 x 1.5 mm^2 to 16 x 1.5 mm^2



Sensor-Actuator-Interface PASSIVE – Metal Version –

Fixed cable distributor in metal

SAI-4/8-FMM M12



Fixed cable distributor in metal

Metal distributors from Weidmüller are of proven performance in various applications and very tough environments. They are available in 4- and 8-channel M12 as well as with cable lengths of 5 or 10 m.

ESD also requires metal distributors. Here the conducting metallic surface is of crucial importance, this means: the surface resistance is very low.

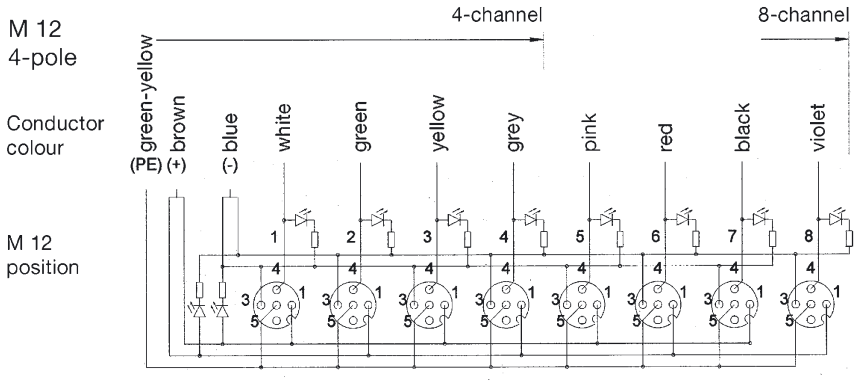
The common cable on the SAI distributors listed is the same as on the plastic distributors.

Advantages:

- no ESD problems
- high resistance to chemicals or mechanical loading
- Standard mounting dimensions

Block diagram for SAI-FMM M12

SAI-4/8-FMM 4P (4-pole)



Ordering information

Type	Cat. No.	Length
4-channel, 4-pole		
SAI-4-FMM-4P M12 5M	**9456190002**	5 m
SAI-4-FMM-4P M12 10M	**9456200002**	10 m
8-channel, 4-pole		
SAI-8-FMM-4P M12 5M	**9456750002**	5 m
SAI-8-FMM-4P M12 10M	**9456760002**	10 m

Code clarification

Examples

SAI-MMS 4P M12
MMS stands for: **M**odular, **M**etal, **S**creen
SAI-MH 4P M12
MH stands for: **M**odular, **H**igh
SAI-MHD 4P M12
MHD stands for: **M**odular, **H**igh, **D**ense (high cable density)
SAI-MM 5P M12
MM stands for: **M**odular, **M**etal
SAI-8-FMM-4P M12
FMM stands for: **F**ixed cable **M**odular, **M**etal

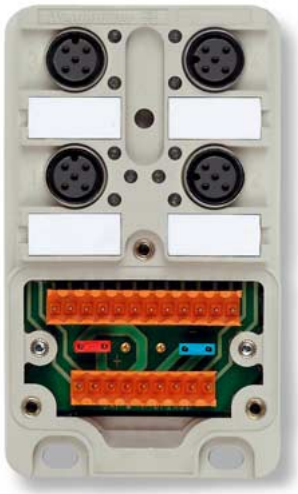
Note:
The cable outside diameter can vary from manufacturer to manufacturer. It is therefore possible that the cable glands hold other cables firmly that have different cable strand combinations. In each case, it is best to first measure the cable diameter and then choose the distributor.

Overview of metal distributors

			M12						
Cat. No. WM	**Type**	**SAI-UT**	**sockets**	**Poles**	**Hood**	**Design**	**Cable gland**	**Version**	**Length**
1705922000	SAI-4-MH-4P M12	PBT	4	4	Zn-G	high	M20	Plastic	
1705932000	SAI-6-MH-4P M12	PBT	6	4	Zn-G	high	M20	Plastic	
1705942000	SAI-8-MH-4P M12	PBT	8	4	Zn-G	high	M20	Plastic	
1701232000	SAI-4-MH-5P M12	PBT	4	5	Zn-G	high	M20	Plastic	
1701242000	SAI-6-MH-5P M12	PBT	6	5	Zn-G	high	M20	Plastic	
1701252000	SAI-8-MH-5P M12	PBT	8	5	Zn-G	high	M20	Plastic	
1701233000	SAI-4-MHD-5P M12	PBT	4	5	Zn-G	high	M25	Plastic	
1701243000	SAI-6-MHD-5P M12	PBT	6	5	Zn-G	high	M25	Plastic	
1701253000	SAI-8-MHD-5P M12	PBT	8	5	Zn-G	high	M25	Plastic	
1705923000	SAI-4-MHD-4P M12	PBT	4	4	Zn-G	high	M25	Plastic	
1705933000	SAI-6-MHD-4P M12	PBT	6	4	Zn-G	high	M25	Plastic	
1705943000	SAI-8-MHD-4P M12	PBT	8	4	Zn-G	high	M25	Plastic	
1783540000	SAI-4-MMS-4P M12	Zn-G	4	4	Zn-G	low	M20	EMC	
1783530000	SAI-8-MMS-4P M12	Zn-G	8	4	Zn-G	low	M20	EMC	
1783520000	SAI-4-MMS-5P M12	Zn-G	4	5	Zn-G	low	M20	EMC	
1783510000	SAI-8-MMS-5P M12	Zn-G	8	5	Zn-G	low	M20	EMC	
1783500000	SAI-4-MM-5P M12	Zn-G	4	5	Zn-G	low	M20	Brass	
1783490000	SAI-8-MM-5P M12	Zn-G	8	5	Zn-G	low	M20	Brass	
1724752000	SAI-4/6/8 MH-MH BL 3.5				Zn-G	high	M20	Plastic	
1724753000	SAI-4/6/8 MH-MHD BL 3.5				Zn-G	high	M25	Plastic	
1782760000	SAI-8-MH-5P M12 ZF III	PBT	8	5	Zn-G	high	M20	Plastic	
1782740000	SAI-8-MMS-5P M12 ZF III	Zn-G	8	5	Zn-G	high	M20	Plastic	
1782750000	SAI-4/6/8 MH-MH BL-ZF 3.5				Zn-G	high	M20	Plastic	
9456190002	SAI-4-FMM-4P M12 5M	Zn-G	4	4					5 m
9456200002	SAI-4-FMM-4P M12 10M	Zn-G	4	4					10 m
9456750002	SAI-8-FMM-4P M12 5M	Zn-G	8	4					5 m
9456760002	SAI-8-FMM-4P M12 10M	Zn-G	8	4					10 m

Notes

SAI Passive 1:1
SAI – For circuits with 1 to 5 floating contacts in an M12



Emergency stop wiring

In certain area of machine manufacture there exists the requirement to integrate more than 2 floating contacts in an M12 connector. This is the case, for example, in the wiring for some emergency stop functions.

The SAI distributor 1:1 was developed for this application.

This distributor integrates 4 M12 connectors with 5 floating contacts in one connector socket. The distributor is supplied complete with hood.

Using this module it is possible to implement this application very easily.

Can also be used for PT100 3 and 4 cable initiators

Ordering information

Type	Cat. No.
SAI-4-M 5P M12 1:1	**1806010000**

Technical data:

Current per channel:	2A
Total current:	8A
LEDs:	No LEDs are incorporated.

Block diagram

Socket	Contact	BL3.5 contact
1	1	1
1	2	2
1	3	3
1	4	4
1	5	5
2	1	6
2	2	7
2	3	8
2	4	9
2	5	10
3	1	11
3	2	12
3	3	13
3	4	14
3	5	15
4	1	16
4	2	17
4	3	18
4	4	19
4	5	20
-	-	21

If you need other configurations, please contact us.
Note:
This distributor cannot be used as a base element for the active bus distributor.

Sensor-Actuator-Interface PASSIVE – Custom –

The custom specialist

Weidmüller offers a large number of distributor solutions on the market. Many of these are unique on the market and are only available from Weidmüller. A large number have already become the market standard.

However, there are still cases in which the customer requires custom solutions.

Especially with the fixed cable versions, it is desirable that the open end is supplied already pre-assembled.
A further customer request: the distributor is supplied with pre-wired connection hood and common cable attached.

These are only a few examples.

Talk to us.
We look forward to receiving your inquiry.

Assembled hood versions

In some case it makes sense to obtain the hoods pre-assembled.

SAI distributors with hood, complete with standard common cable

Ordering information for SAI distributors with hood with cable already connected

Type	Cat. No.	Length
4-channel, 5-pole		
SAI-4-MF 5P PUR 5M	**1804600000**	5 m
SAI-4-MF 5P PUR 10M	**1804580000**	10 m
8-channel, 5-pole		
SAI-8-MF 5P PUR 5M	**1804590000**	5 m
SAI-8-MF 5P PUR 10M	**9457430000**	10 m
8-channel, 5-pole		
SAI-8-MF 4P PUR 5M	**1799960000**	5 m
SAI-8-MF 4P PUR 10M	**1789190000**	10 m
without Ini LED 8-channel, 5-pole		
SAI-8-MF 4P PUR 10M M12	**9457350000**	5 m

Ordering information for hood, 5-pole fitted, cable numbered

Type	Cat. No.	Length
Hood, 5-pole fitted		
SAI-4/6/8-MH-PUR-10M	**1782680000**	10 m

Suitable base element

Type	Cat. No.
SAI-8-M 5P M12 UT	**1701251000**

Ordering information for SAI distributor cable exit from the base

Type	Cat. No.	Length
8-channel, 4-pole		
SAI-8-FB 4P PUR 2M	**1790070000**	2 m

Colour of plastic: blue

Notes

Sensor-Actuator-Interface PASSIVE – Electronic –

SAI-E

Distributor with pre-processing electronics

With this SAI-E, signal processing is performed in the area of the sensors. These products are currently available for the logic functions AND, OR, NAND and NOR. Other functions are in preparation. Four inputs are connected to one output using logic. Realising the processing of signals in the field brings many advantages.

In this way it is possible to avoid the use of a cable with a large number of poles. This saves time and material costs. In addition, input cards in the PLC are saved.

For example, only one input is used instead of four.

- Cost saving
  Material costs:
  Usage of cables with less conductors
  - Fewer input ports necessary on the PLC
  - Fewer cables need to be connected
  - Reduction in errors
- The hoods are simply placed on the standard base element
- Patented protected solution

If you have not used an input, you can set the input active using the simulation plug.

Hood pin assignments:

Pin	Signal name	Significance
1	+ 24V DC	Power supply for logic and sensors
2	+ 0V	Reference potential for logic and sensors
3	PE	Protective conductor
4	Output 1 + 24V	Logic output 1
5	Output 2 + 24V	Logic output 2

Ordering information

Electronic hood:

Type	Cat. No.	
SAI-EH-8E/2A-Logik-UND	**1805420000**	1
SAI-EH-8E/2A-Logik-ODER	In preparation	1
SAI-EH-8E/2A-Logik-NAND	In preparation	1
SAI-EH-8E/2A-Logik-NOR	In preparation	1

Base element

Type	Cat. No.	Qty
for 8 inputs		
SAI-8 4P M12 UT	**1701594000**	1
for 4 inputs		
SAI-4 4P M12 UT	**1705921000**	1

Simulation plug

Type	Cat. No.	Qty
SAIS-T-2/1-K	**8569100000**	1

Technical data

Material data			M8	M12	IDC
Insulating material	Enclosure		PBT (UL 94 V0)	PBT (UL 94 V0)	PBT (UL 94 V0)
	Contact carrier		PBT (UL 94 V0)	PBT (UL 94 V0)	PBT (UL 94 V0)
Basic material	Contact		CuZn, nickel and gold plated	CuZn, nickel and gold plated	CuZn, nickel and gold plated
	Screw socket		CuZn, nickel plated	CuZn, nickel plated	CuZn, nickel plated
Temperature range	°C		-20…+90	-20…+90	-20…+90
Colour	Enclosure		grey, RAL 7032	grey, RAL 7032	grey, RAL 7032
	PG and contact carrier		black	black	black
Cable outside insulation			PUR	PUR	PUR
O-ring			Viton	Viton	Viton
Enclosure seal			VITON	PUR, foamed	PUR, foamed
Type of connection, hood version			Tension clamp	Screw / tension clamp	Screw / tension clamp
Clamping area		mm^2	0.08…1.0	0.08…1.5	0.08…1.5
AWG No.			28…18	22…14	22…14
Insulation stripping length, hood version		mm	100	100	100
Insulation stripping length, screw version		mm	-	7	7
Insulation stripping length, tension clamp version		mm	7	10	10
Contact surface BL3,5 / B2L			tinned	tinned	tinned
Contact base material BL3,5 / B2L			CU alloy	CU alloy	CU alloy
Torques					
Hoods		Nm	0.8	0.8	0.8
Dummy caps		Nm	0.5	0.5	0.5
Mechanical data					
Protection class*		IP	68 (M16/M23 IP67)	68	67
Suitability for drag chain		Cycles at 15d	1 million	1 million	1 million
HARAX® connection					
Max. connection frequency of a cable of the same cross-section				-	10
Outside insulation stripping length		mm			15…20
Conductor cross-section (flexible)		mm^2		-	0.25…0.5
Smallest strand diameter		mm		-	0.1
Conductor insulation material				-	PVC/PE/PUR
Conductor outside diameter		mm		-	1.2…1.6
Conductor outside diameter		mm		-	3.5…5.0
Pin assignments				-	see page 23
Electrical data according to VDE 110/4.97					
Operating voltage		V-	10…30	10…30	10…30
Max. current carrying capacity per I/O signal		A	2 (derating)	2 (derating)	2 (derating)
- total with single supply		A	8	10 (9 A on F version)	10 (9 A on F version)
- total with dual supply		A	-	2 x 8 = 16	2 x 8 = 16
Rated voltage		V_{eff}	32	32	32
Test voltage		kV_{eff}	1.0	1.0	1.0
Degree of pollution			3	3	2
Insulation resistance		Ω	> 10^9	> 10^9	> 10^9
Other data					
Dimensions	See drawings on page		8 and 9	10 and 11	12 and 13
Mounting holes	See drawings on page		8 and 9	10 and 11	12 and 13
Function indicators					
for operating voltage			1 x LED, green	2 x LED, green	2 x LED, green
for I/O function			1 x LED, yellow (per function)	1 x LED, yellow (per function)	1 x LED, yellow (per function)
Potential isolation (SAI-…-M)			-	via 2 jumpers (see diagram)	via 2 jumpers (see diagram)
Cable strain relief (SAI-…-M)			M20	M20	M20
Max. cable diameter (SAI-…-M)		mm	10-14	6-12	6-12

* only when plugged in and secured

HARAX® is a registered trademark of Harting KGaA

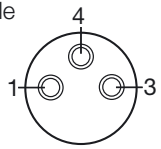
Sensor-Actuator-Interface PASSIVE

Contact assignment

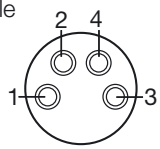
SAI-M/SAI-F

M8 connector position (on socket)

3-pole

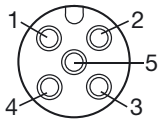


4-pole

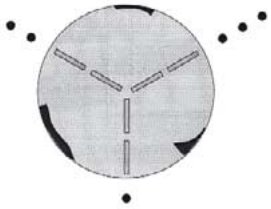


M12 connector position (on socket)

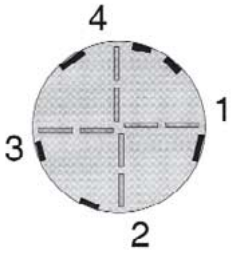
5-pole



IDC HARAX® 3-pole



IDC HARAX® 4-pole



Pole		Assignment
1	=	+ 24 V dc
2	=	input/output 2 *
3	=	0 V dc
4	=	input/output 1
5	=	PE

*) = only 5-pole version

Pole		Assignment
●	=	+ 24 V dc
●●	=	Input/output
●●●	=	0 V dc

Pole	Colour coding	Assignment
1	brown	+ 24 V dc
2	no colour	input/output 1
3	blue	0 V dc
4	black	input/output 2

Connection plan

Conductor colour

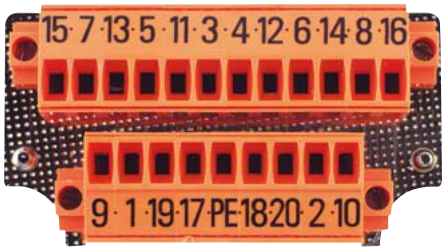
Terminal Connection No.		Connector position	M8 contact 3-pole	M8 contact 4-pole	M12 Contact	HARAX® contact 3-pole	HARAX® contact 4-pole	Potential	Conductor colour coding	Colour code
1	=	1	4	4	4	2	4	I/O 1-1	white	WH
2	=	2	4	4	4	2	4	I/O 2-1	green	GN
3	=	3	4	4	4	2	4	I/O 3-1	yellow	YE
4	=	4	4	4	4	2	4	I/O 4-1	grey	GY
5	=	5	4	4	4	2	4	I/O 5-1	pink	PK
6	=	6	4	4	4	2	4	I/O 6-1	red	RD
7	=	7	4	4	4	2	4	I/O 7-1	black	BK
8	=	8	4	4	4	2	4	I/O 8-1	violet	VT
9	=	1	–	2	2*		2	I/O 1-2	grey/pink	GYPK
10	=	2	–	2	2*		2	I/O 2-2	red/blue	RDBL
11	=	3	–	2	2*		2	I/O 3-2	white/green	WHGN
12	=	4	–	2	2*		2	I/O 4-2	brown/green	BNGN
13	=	5	–	2	2*		2	I/O 5-2	white/yellow	WHYE
14	=	6	–	2	2*		2	I/O 6-2	yellow/brown	YEBN
15	=	7	–	2	2*		2	I/O 7-2	white/grey	WHGY
16	=	8	–	2	2*		2	I/O 8-2	grey/brown	GYBN
17	=	1, 3, 5, 7	1	1	1	1	1	U1 + (24 V dc)	brown	BN
18	=	1, 3, 5, 7	3	3	3	3	3	U1 - (0 V)	blue	BU
19	=	2, 4, 6, 8	–	–	1	1	1	U2 + (24 V dc)	red*	RD*
20	=	2, 4, 6, 8	–	–	3	3	3	U2 - (0 V)	black*	BK*
21	=	1, 2, 3, 4, 5, 6, 7, 8	–	–	5	-	-	PE	green-yellow	GNYE

* Contact used only in the 5-pole version

Note:

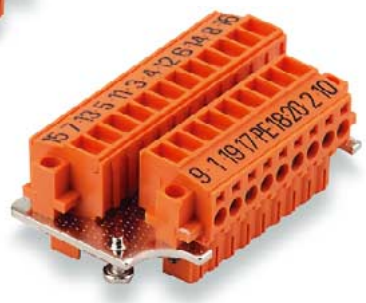
SAI distributors with fixed cable have a single supply conductor as standard.
The voltage U1 is supplied to all the sockets.
An SAI distributor with fixed cable but with separate supply voltage is available on request.

Connector assignment



Tension clamp connection

Screw connection



New I/O wiring concepts

Special applications – problematic available space – require the usage of an SAI-M8 distributor.

Machine manufacturers who use the bus systems need distributors with M8 and bus electronics. These M8 distributors with integrated electronics would be too large and heavy.

Weidmüller solves this problem with a combination of modules.

SAI Combi

The advantages in detail:

- Small flexible units, purely passive
- Only one sensor per socket, T-pieces are not needed
- Plugable electronics still possible, Can be mounted where there is space
- No bus distributor on moving parts, No dragged bus cable
- No electronics on moving parts

The solution is protected by Weidmüller.

Ordering information

Type	Cat. No.
SAI-8-M16 3P M8	**1795900000**

Ordering information

Type	Cat. No.
SAI-HP-DP-16DI	**8516980177**
SAI-HS-DP-16DI	**8516980181**
SAI-HP-CAN-16DI	**8516980185**
SAI-HS-CAN-16DI	**8516980189**

You will find other variants (e.g. 8DI/8DO, DeviceNet or Interbus) on pages 28-32.

SAI-2-M-12P M16 UT	**1802330000**

Connection cable	
SAIL-M16W-M16W 12P 2,0U	**1805650000**

Compensating plate for difference in height:	
SAI active distance plate	**1805430000**

Connection plan for Profibus distributor with 2 off M16 12-pole on SAI-M8 3-pole on M16 12-pole

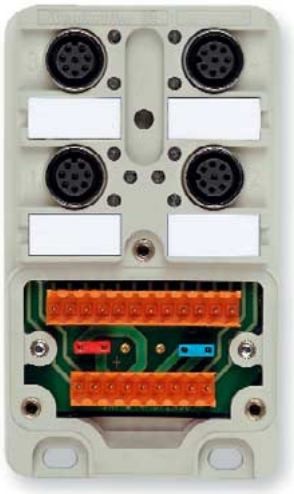
Cat. No.: **1802330000**

SL 3,5 Connection	Bit	16DI	8DI / 8DO	M16 12 pole "1"	M16 12 pole "2"	M8 contact 4
1	0.0	E0	E0	F		Bu1
2	1.0	E4	A0	K		Bu5
3	0.1	E1	E1	G		Bu2
4	1.1	E5	A1	A		Bu6
5	0.2	E2	E2	H		Bu3
6	1.2	E6	A2	D		Bu7
7	0.3	E3	E3	B		Bu4
8	1.3	E7	A3	E		Bu8
9	0.0	E8	E4		F	Bu1
10	1.0	E12	–		K	Bu5
11	0.1	E9	E5		G	Bu2
12	1.1	E13	–		A	Bu6
13	0.2	E10	E6		H	Bu3
14	1.2	E14	–		D	Bu7
15	0.3	E11	E7		B	Bu4
16	1.3	E15	–		E	Bu8
17 (LED)		+24 V		J + L		
18		0 V		C + M		
19		+24 V			J + L	
20		0 V			C + M	
21	Enclosure	PE				

Note:
To compensate for the difference in height between the active hood and the base, a distance plate is to be fitted.

Sensor-Actuator-Interface PASSIVE – Combi –

SAI distributor 4 8P M12
with 4 sockets and 8 poles per M12



Application:

This distributor can be used both as a base element for the satellite solution (SAI-Combi), as well as for the connection of sensors/equipment with more than two contacts.

SAI Combi:

In conjunction with the SAI active bus hood, a sub-distributor can be used on every M12 with the aid of the SAI-4-M-8P. This SAI should then be 4-channel distributor with one channel per connector position.
Particularly suitable here is the
SAI-4-M 4P M12
Catalogue number: **1705920000**.

Sensors, equipment with more than two signals in a cable

As one connector position in this module contains 4 signal paths, and also twice +, twice – and once PE, it is also possible to connect components with more than two signal cables to this module.
8-pole connecting cables on request.

Ordering information

Type	Cat. No.	Qty
Complete module:		
SAI-4-M 8P M12	**1807640000**	1
Single base:		
SAI-4-M M12 UT	**1807641000**	1
Suitable hood – passive:		
SAI-4/6/8-MH-BL3.5	**1724750000**	1

Technical note:

No signal LEDs are incorporated into the distributor.
The supply LEDs and potential isolation are incorporated.

Connections

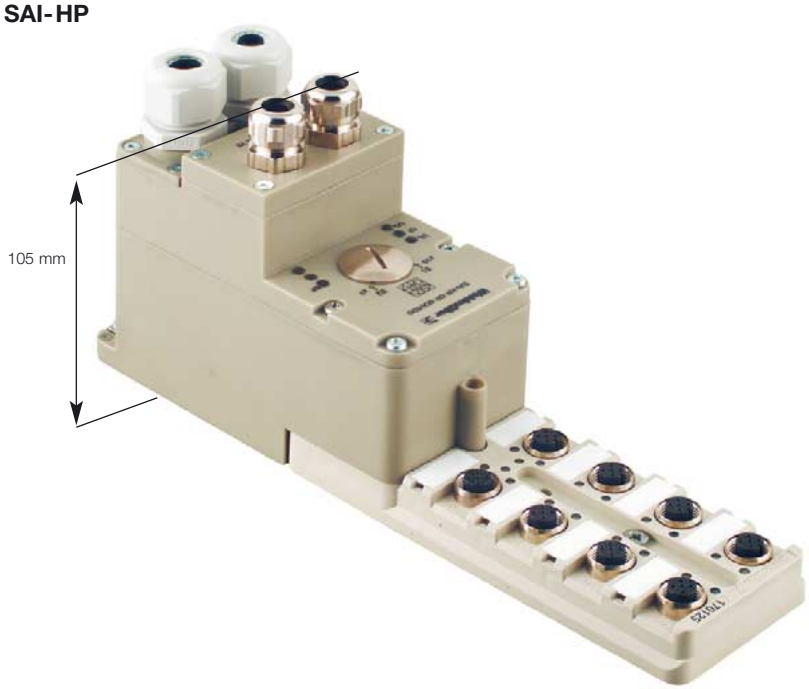
M12 socket:	M12 contact:	BL 3,5 connection:	PLC input:	Supply:
1	1	1	E0.0	
1	2	3	E0.1	
1	3	5	E0.2	
1	4	7	E0.3	
2	1	2	E0.4	
2	2	4	E0.5	
2	3	6	E0.6	
2	4	8	E0.7	
3	1	9	E1.0	
3	2	11	E1.1	
3	3	13	E1.2	
3	4	15	E1.3	
4	1	10	E1.4	
4	2	12	E1.5	
4	3	14	E1.6	
4	4	16	E1.7	
1/3	5	17		24V
2/4	5	19		24V
1/3	6/7	18		0V
2/4	6/7	20		0V
1/2/3/4	8	PE		PE

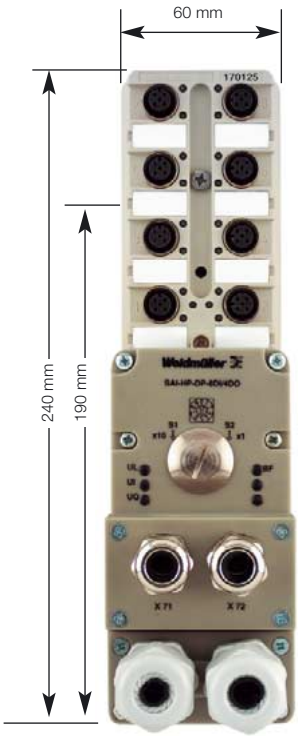
Using the bridges in the distributor the potentials from 17 and 19 and from 18 and 20 can be bridged.
The contacts 6 and 7 are bridged in the 8-pole M12 to increase the current carrying capacity.
Total current per M12: 2 A
Signal current per pin: 1 A

SAI active distributors for Profibus-DP, CAN, DeviceNet or Interbus.
Self-assembly or with circular connectors
for "BUS" and operating voltage

SAI-HS

SAI-HP





Sensor-Actuator-Interface ACTIVE

Sensor-Actuator-Interface active distributor

SAI-active distributor

The active SAI family encompasses fieldbus components for Profibus-DP, CANopen, DeviceNet, Interbus and AS-Interface.
Input and/or output devices should be introduced into the process directly on the spot to make full use of the cost-saving effects of fieldbus networked I/O systems.

Modules of protection class IP 67 should be used if the environment is polluted and/or particularly damp.

Weidmüller's range of IP 67- SAI active distributors offers a number of new solutions for just such conditions.
The modules comprise the passive SAI-(UT) distributors, already successful for a number of years, and a plugable electronics module. These electronics modules are available for Profibus-DP, CANopen, DeviceNet and Interbus.
The big advantage of the modular design is to be found in the pre-wiring of the passive SAI modules by means of M12 or HARAX® IDC. The decision in favour of a particular fieldbus can be made independent of the wiring of the passive SAI modules.

The fieldbus can be changed later without affecting the wiring.
The wiring can be carried out by means of the following modules:

- 8-channel M12 4- or 5-pole
- 4-channel M12 5-pole
- 8-channel IDC 3- or 4-pole
- 4-channel IDC 4-pole
- 2-channel M16 12-pole
- 4-channel M12 8-pole

Once the two units have been mounted and labelled accordingly, it is impossible when replacing or carrying out maintenance work to incorrectly connect the units.
It is possible with the cable gland module to daisy-chain the operating voltage and the bus from module to module. Here the maximum possible current carrying capacity must be observed.

SAI active distributor ASi

As a further addition to the SAI range, the distributors are available with ASi electronics.

The advantages of these distributors are:

- Modular, low height design
- Plugable electronics
- Pre-drilled mounting holes compatible with passive distributors
- AS-i cables can be routed from both sides
- Infrared addressing diode

Technical notes:

By separating the electronics from the sensor/actuator connection level, it has become possible for the user to choose the most favourable connection solution. Should, for example, exclusive-OR sensors be used in the machine, then they are easily connected via a 5-pole/ 4-channel base, because the distributor connector positions have already been fitted with two signal paths. It is also possible to use a 4-channel base in confined spaces.

Choice of connection:

The choice of connection technology for the initiators is open. You can choose to work with either the well-known M12 circular connector or with the insulation displacement technology. In the 4-pole version, the M12 technology consists of signal, +, - and PE wire. A further signal wire is available in the 5-pole version. The PE wire has been left out of the IDC connections. This means that the 3-pole IDC connection is comparable with the 4-pole M12 connector position, and the 4-pole IDC connection with the 5-pole M12 connection.

Choice of bus and power connections:

As diverse as the machine manufacturers are, so varied are the demands on the connection technology for the bus and external power supply.
Weidmüller SAI active distributors offer the choice between cable glands or metric cable glands with M23 (Interbus) and M12 (coded B, Profibus-DP) (coded A, CAN and DNet) connectors.
The variant with cable glands is suitable for installations where the distance to the next station is not known and the wiring must be field connected.
If "Plug and Play" is required, in connection with pre-assembled cables, use of the distributor with metric connectors to the bus and power supply is recommended.
Machines can be pre-wired in the sensor/actuator area. It can then be decided later which active head is to be fitted.
There is also a cost advantage in the inventory.

6 pole power plug M23

identical for all bus systems

Pin	Signal name	Significance
1	PE (front contact)	Protective conductor
2	+ 24V	Voltage supply, load (actuators)
3	0 Volt	Reference potential load
4	+ 24V	Power supply for logic and sensors
5	0 Volt	Reference potential for logic and sensors
6	Not used	

Pin assignment SAI distributor

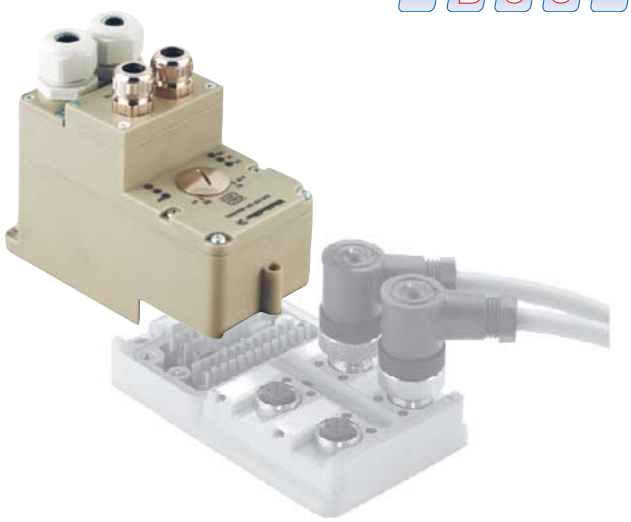
BL 3,5	M12/IDC	M12	IDC	IDC	I/O availability				
Connection	Position		3P	4P					
SL3,5 (BL) Connection	Socket No.	Contact	Contact	Contact	8DI / 4DO	8DI / 8DO	8DO	8DI	16DI
1	1 (0.0)	4	2	4	E0	E0	A0	E0	E0
2	2 (1.0)	4	2	4	A0	A0	A4	E4	E4
3	3 (0.1)	4	2	4	E1	E1	A1	E1	E1
4	4 (1.1)	4	2	4	A1	A1	A5	E5	E5
5	5 (0.2)	4	2	4	E2	E2	A2	E2	E2
6	6 (1.2)	4	2	4	A2	A2	A6	E6	E6
7	7 (0.3)	4	2	4	E3	E3	A3	E3	E3
8	8 (1.3)	4	2	4	A3	A3	A7	E7	E7
9	1 (0.0)	2*	-	2	E4	E4	A2	E2	E8
10	2 (1.0)	2*	-	2	-	A4	A6	E6	E12
11	3 (0.1)	2*	-	2	E5	E5	A3	E3	E9
12	4 (1.1)	2*	-	2	-	A5	A7	E7	E13
13	5 (0.2)	2*	-	2	E6	E6	-	-	E10
14	6 (1.2)	2*	-	2	-	A6	-	-	E14
15	7 (0.3)	2*	-	2	E7	E7	-	-	E11
16	8 (1.3)	2*	-	2	-	A7	-	-	E15
17 (Circuit 1)	1, 3, 5, 7	1	1	1	24 V	24 V		24 V	24 V
18 (Circuit 1)	1, 3, 5, 7	3	3	3	0 V	0 V	0 V	0 V	0 V
19 (Circuit 2)	2, 4, 6, 8	1	1	1	24 V	24 V		24 V	24 V
20 (Circuit 2)	2, 4, 6, 8	3	3	3	0 V	0 V	0 V	0 V	0 V
21	1,... ..., 8	5			PE	PE	PE	PE	PE

* Contact contained only with M12 5-pole

Sensor-Actuator-Interface ACTIVE

SAI-HS PROFIBUS-DP plug-on module with circular connectors IP67

SAI-HP PROFIBUS-DP plug-on module self-assembly IP68



Ordering information

Self-assembly	**Profibus**	
Designation	Cat. No.	
SAI-HP-DP-8DI	**8516980176**	
SAI-HP-DP-8DO	**8516980178**	
SAI-HP-DP-8DI/4DO	**8516980179**	
SAI-HP-DP-16DI	**8516980177**	
SAI-HP-DP-8DI/8DO	**8516980208**	
With circular connectors	**Profibus**	
Designation	Cat. No.	
SAI-HS-DP-8DI	**8516980180**	
SAI-HS-DP-8DO	**8516980182**	
SAI-HS-DP-8DI/4DO	**8516980183**	
SAI-HS-DP-16DI	**8516980181**	
SAI-HS-DP-8DI/8DO	**8516980211**	
Connectable passive SAI distributors (UT), codeable		
Designation	Cat. No.	Poles
SAI-8-M 5P M12 UT	**1701251000**	5
SAI-8-M 4P M12 UT	**1705941000**	4
SAI-4-M 5P M12 UT	**1701231000***	5
SAI-8-M 4P IDC UT	**1766801000**	4
SAI-8-M 3P IDC UT	**1760061000**	3
SAI-4-M 4P IDC UT	**1766781000***	4

Technical data

General technical data, electronic module	
Insulating material Enclosure	PBT
Flammability class	UL 94 V0
Operating temperature	0 ... 55 C°
Storage temperature	-25 .. +70 °C
Protection class	IP 67 (IP68)

Electrical data, electronic module	
Operating voltage	24 Vdc (20.4 ... 28 V)
(Display via) U_L	LED green
Max. current carrying capacity per output signal	2 A (derating)
Output stages	short-circuit proof
Max. total current	2 x 8 A
Digital inputs	type 1 acc. to EN61131-2
Input current when "0"	< 1.5 mA
Input current when "1"	> 2 mA
Operating point	approx. 9 V
I/O function indicator	red/green (Uq)
Sensor voltage indicator	red/green (Ui)

Mechanical data, cable gland version	
Diameter supply cable	6 ... 12 mm
Conductor cross-section (maximum)	2.5 mm^2 AWG 12
Diameter bus cable	5.5 ... 9 mm
Dimensions see page 26	
Cable gland pre-assembled	

Technical data on the bus system (Profibus)	
PROFIBUS-DP	according to EN 50170 Part 2 (DP)
Bus station	Slave
Transmission rate	max. 12 MBaud
Diagnostic indicator	red (Bf)
Fieldbus interface	RS 485
Potential isolation	given
Station address rotary switches	1-99
Baudrate	setting via bus

For further technical data, see manual.

SAI active manual		
SAI-aktiv Handbuch	German	**5617870000**
SAI-activ Manual	English	**5619160000**

Accessories

Designation	Cat. No.
SAIEND PB M12 5P B-COD	**1784770000**
Terminating connector PB in M12 **plug**	
SAIBM 5/8 S M12 5P B-COD	**1784780000**
Metal connector, **socket** M12, 5-pole, screen coded B	
SAISM 5/8 S M12 5P B-COD	**1784790000**
Metal connector, **male** M12, 5-pole, screen coded B	
SAIBWM6/14 M23 6P	**1789950000**
Power supply connector for SAI-HS, socket, M23, 6-pole, **angled**	
SAI-BGM6/14 M23 6P	**1799260000**
Power supply connector for SAI-HS, socket, M23, 6-pole, **straight**	

Applications table

Hood type	**8 DI**	**8 DO**	**8 DI/4 DO**	**16 DI**	**8 DI/8 DO**
Cat. No.	**8516980176**	**8516980178**	**8516980179**	**8516980177**	**8516980208**
Cat. No.	**8516980180**	**8516980182**	**8516980183**	**8516980181**	**8516980211**
Distributor bases UT					
Standard M12 (8-channel)	**1705941000**	**1705941000**	**1701251000**	**1701251000**	**1701251000**
Shortened design 4-channel/5-pole M12	**1701231000**	**1701231000**			
Standard HARAX®	**1760061000**	**1760061000**	**1766801000**	**1766801000**	**1766801000**
Shortened design 4-channel/4-pole	**1766781000**	**1766781000**			

GSD files

Type	**File name**
8DI	WI004350.GSD
16DI	WI004351.GSD
8DO	WI004354.GSD
8DI / 4DO	WI004355.GSD
8DI / 8DO	WI004355.GSD

Profibus-DP (M12 coded B)

The 5-pole bus plug and the 5-pole socket have the following pin assignments:

Pin	**Sig.name IN**	**Sig.name OUT**	**Significance**
	Plug X71	**Socket X72**	
1	VP	VP	Supply voltage (plus 5V) (for bus connection)
2	RxD/TxD-N	RxD/TxD-N	Receive/transmit data N, A cable
3	DGND	DGND	Data transmission potential (reference to VP)
4	RxD/TxD-P	RxD/TxD-P	Receive/transmit data P, B cable
5	Screen	Screen	Screen protective earth
Enclosure	Screen	Screen	Screen protective earth

Our Profibus-DP distributors are certified by the Profibus user organisation.
You will find the appropriate GSD files on our web site **www.weidmueller.com**

SAI-HS CANopen plug-on module with circular connectors IP67

SAI-HP CAN open plug-on module self-assembly IP68

Ordering information

Self-assembly	CAN open	
Designation	Cat. No.	
SAI-HP-CAN-8DI	**8516980184**	
SAI-HP-CAN-8DO	**8516980186**	
SAI-HP-CAN-8DI/4DO	**8516980187**	
SAI-HP-CAN-16DI	**8516980185**	
SAI-HP-CAN-8DI/8DO	**8516980341**	
With circular connectors	**CAN open**	
Designation	Cat. No.	
SAI-HS-CAN-8DI	**8516980188**	
SAI-HS-CAN-8DO	**8516980190**	
SAI-HS-CAN-8DI/4DO	**8516980191**	
SAI-HS-CAN-16DI	**8516980189**	
SAI-HS-CAN-8DI/8DO	**8516980344**	
Connectable passive SAI distributors (UT), codeable		
Designation	Cat. No.	Poles
SAI-8-M 5P M12 UT	**1701251000**	5
SAI-8-M 4P M12 UT	**1705941000**	4
SAI-4-M 5P M12 UT	**1701231000***	5
SAI-8-M 4P IDC UT	**1766801000**	4
SAI-8-M 3P IDC UT	**1760061000**	3
SAI-4-M 4P IDC UT	**1766781000***	4

Technical data

General technical data, electronic module	
Insulating material Enclosure	PBT
Flammability class	UL 94 V0
Operating temperature	0 ... 55 C°
Storage temperature	-25 .. +70 °C
Protection class	IP 67 (IP68)

Electrical data, electronic module	
Operating voltage	24 Vdc (20.4 ... 28 V)
(Display via U_L	LED green
Max. current carrying capacity per output signal	2 A (derating)
Output stages	short-circuit proof
Max. total current	2 x 8 A
Digital inputs	type 1 acc. to EN61131-2
Input current when "0"	< 1.5 mA
Input current when "1"	> 2 mA
Operating point	approx. 9 V
I/O function indicator	red/green (Uq)
Sensor voltage indicator	red/green (U

Mechanical data, cable gland version	
Diameter supply cable	6 ... 12 mm
Conductor cross-section (maximum)	2.5 mm^2 AWG 12
Diameter bus cable	5.5 ... 9 mm
Dimensions see page 26	

Technical data on the bus system (CAN)	
Transmission rate	max. 1 MBaud
Diagnostic indicator	red (Bf)
Fieldbus interface	RS 485
Station address	2 rotary switches 1…125
Baudrate	1 rotary switch 10K…1 MBaud

For further technical data, see manual.

SAI active manual		
SAI-aktiv Handbuch	German	**5617870000**
SAI-activ Manual	English	**5619160000**

Accessories

Designation	Cat. No.
SAISM 5/8 S M12 5P A-COD	**1784740000**
Metal connector, **male** M12, 5-pole, screen coded A	
SAIBM 5/8 S M12 5P A-COD	**1784750000**
Metal connector, **socket** M12, 5-pole, screen coded A	
SAIEND CAN M 12 4P A-COD	**1784760000**
Terminating resistor for CAN in M12 plug	
SAIBWM6/14 M23 6P	**1789950000**
Power supply connector for SAI-HS, socket, M23, 6-pole, **angled**	
SAI-BGM6/14 M23 6P	**1799260000**
Power supply connector for SAI-HS, socket, M23, 6-pole, **straight**	

Applications table

Hood type	8 DI	8 DO	8 DI/4 DO	16 DI	8 DI/8 DO
Cat. No.	**8516980184**	**8516980186**	**8516980187**	**8516980185**	**8516980341**
Cat. No.	**8516980188**	**8516980190**	**8516980191**	**8516980189**	**8516980344**
Distributor bases UT					
Standard M12 (8-channel)	**1705941000**	**1705941000**	**1701251000**	**1701251000**	**1701251000**
Shortened design 4-channel/5-pole M12	**1701231000**	**1701231000**			
Standard HARAX®	**1760061000**	**1760061000**	**1766801000**	**1766801000**	**1766801000**
Shortened design 4-channel/4-pole	**1766781000**	**1766781000**			

EDS files

Type	File name
8DI	WI00BD00.GSD
16DI	WI00BD01.GSD
8DO	WI00BD04.GSD
8DI / 4DO	WI00BD05.GSD
8DI / 8DO	WI00BD45.GSD

CAN (M12 coded A)

Pin	Plug (x71) socket (x72)	Cable
1	Screen optional	–
2	Not used	–
3	CAN-GND	X
4	CAN-H	X
5	CAN-L	X
Enclosure	Screen	Screen

You will find the appropriate EDS files on our web site **www.weidmueller.com**

Sensor-Actuator-Interface ACTIVE

SAI-HS DeviceNet plug-on module with circular connectors IP67

SAI-HP DeviceNet plug-on module self-assembly IP68

DeviceNet™

Ordering information

Self-assembly	**DeviceNet**	
Designation	Cat. No.	
SAI-HP-DEV-8DI	**8516980192**	
SAI-HP-DEV-8DO	**8516980194**	
SAI-HP-DEV-8DI/4DO	**8516980195**	
SAI-HP-DEV-16DI	**8516980193**	
SAI-HP-DEV-8DI/8DO	**8516980342**	
With circular connectors	**DeviceNet**	
Designation	Cat. No.	
SAI-HS-DEV-8DI	**8516980196**	
SAI-HS-DEV-8DO	**8516980198**	
SAI-HS-DEV-8DI/4DO	**8516980199**	
SAI-HS-DEV-16DI	**8516980197**	
SAI-HS-DEV-8DI/8DO	**8516980212**	
Connectable passive SAI distributors (UT), codeable		
Designation	Cat. No.	Poles
SAI-8-M 5P M12 UT	**1701251000**	5
SAI-8-M 4P M12 UT	**1705941000**	4
SAI-4-M 5P M12 UT	**1701231000***	5
SAI-8-M 4P IDC UT	**1766801000**	4
SAI-8-M 3P IDC UT	**1760061000**	3
SAI-4-M 4P IDC UT	**1766781000***	4

Accessories

Designation	Cat. No.
SAISM 5/8 S M12 5P A-COD	**1784740000**
Metal connector, **male** M12, 5-pole, screen coded A	
SAIBM 5/8 S M12 5P A-COD	**1784750000**
Metal connector, **socket** M12, 5-pole, screen coded A	
SAIEND CAN M 12 4P A-COD	**1784760000**
Terminating resistor for CAN in M12 plug	
SAIBWM6/14 M23 6P	**1789950000**
Power supply connector for SAI-HS, socket, M23, 6-pole, **angled**	
SAI-BGM6/14 M23 6P	**1799260000**
Power supply connector for SAI-HS, socket, M23, 6-pole, **straight**	

DeviceNet (M12 coded A)

Pin	Plug (x71) socket (x72)	Cable
1	Screen optional	–
2	Not used	–
3	CAN-GND	X
4	CAN-H	X
5	CAN-L	X
Enclosure	Screen	Screen

Technical data

General technical data, electronic module	
Insulating material Enclosure	PBT
Flammability class	UL 94 V0
Operating temperature	0 ... 55 C°
Storage temperature	-25 .. +70 °C
Protection class	IP 67 (IP68)

Electrical data, electronic module	
Operating voltage	24 Vdc (20.4 ... 28 V)
(Display via) U_L	LED green
Max. current carrying capacity per output signal	2 A (derating)
Output stages	short-circuit proof
Max. total current	2 x 8 A
Digital inputs	type 1 acc. to EN61131-2
Input current when "0"	< 1,5 mA
Input current when "1"	> 2 mA
Operating point	approx. 9 V
I/O function indicator	red/green (Uq)
Sensor voltage indicator	red/green (Ui)

Mechanical data, cable gland version	
Diameter supply cable	6 ... 12 mm
Conductor cross-section (max.)	2.5 mm^2 AWG 12
Diameter bus cable	5.5 ... 9 mm
Dimensions see page 26	

Technical data on the bus system (DeviceNet)	
Data transmission rate	Max. cable length
500 KBaud	100 m
250 KBaud	200 m
125 KBaud	500 m
Topology:	line structure with branches
Station address:	63 via 2 rotary switches
Module addressing:	on the unit via rotary switch
Terminating resistor:	on HP variant in the unit
	on HS variant with M12 terminating plug
Communication modes:	polled I/O message connection
	explicit message connection
	bit strobe I/O message connection
	change of state/cyclic message connection

For further technical data, see manual.

SAI active manual		
SAI-aktiv Handbuch	German	**5617870000**
SAI-activ Manual	English	**5619160000**

Applications table

Hood type	**8 DI**	**8 DO**	**8 DI/4 DO**	**16 DI**	**8 DI/8 DO**
Cat. No.	**8516980192**	**8516980194**	**8516980195**	**8516980193**	**8516980342**
Cat. No.	**8516980196**	**8516980198**	**8516980199**	**8516980197**	**8516980212**
Distributor bases UT					
Standard M12 (8-channel)	**1705941000**	**1705941000**	**1701251000**	**1701251000**	**1701251000**
Shortened design 4-channel/5-pole M12	**1701231000**	**1701231000**			
Standard HARAX®	**1760061000**	**1760061000**	**1766801000**	**1766801000**	**1766801000**
Shortened design 4-channel/4-pole	**1766781000**	**1766781000**			

You will find the appropriate EDS files on our web site **www.weidmueller.com**

SAI-HS Interbus plug-on module with circular connectors IP67

Ordering information

Self-assembly **Interbus**

Designation	Cat. No.
SAI-HS-IBUS-8DI	**8516980204**
SAI-HS-IBUS-8DO	**8516980206**
SAI-HS-IBUS-8DI/4DO	**8516980207**
SAI-HS-IBUS-16DI	**8516980205**
SAI-HS-IBUS-8DI/8DO	**8516980345**

Connectable passive SAI distributors (UT), codeable

Designation	Cat. No.	Poles
SAI-8-M 5P M12 UT	**1701251000**	5
SAI-8-M 4P M12 UT	**1705941000**	4
SAI-4-M 5P M12 UT	**1701231000***	5
SAI-8-M 4P IDC UT	**1766801000**	4
SAI-8-M 3P IDC UT	**1760061000**	3
SAI-4-M 4P IDC UT	**1766781000***	4

Technical data

General technical data, electronic module		
Insulating material	Enclosure	PBT
Flammability class		UL 94 V0
Operating temperature		0 ... 55 C°
Storage temperature		-25 .. +70 °C
Protection class		IP 67

Electrical data, electronic module	
Operating voltage	24 Vdc (20.4 ... 28 V)
(Display via) U_L	LED green
Max. current carrying capacity per output signal	2 A (derating)
Output stages	short-circuit proof
Max. total current	2 x 8 A
Digital inputs	type 1 acc. to EN61131-2
Input current when "0"	< 1,5 mA
Input current when "1"	> 2 mA
Operating point	approx. 9 V
I/O function indicator	red/green (Uq)
Sensor voltage indicator	red/green (U

Mechanical data, Verschraubungsversion	
Diameter supply cable	6 ... 12 mm
Conductor cross-section (max.)	2.5 mm^2 AWG 12
Diameter bus cable	5.5 ... 9 mm
Dimensions see page 26	

Technical data on the bus system (Interbus)	
Max. bus cable length:	12.8 km
Topology:	ring
Data transmission rate:	500 kBaud
max. number of slave:	256 bus stations
Module addressing:	Automatic addressing from the central master
Terminating resistor:	not required
Communication methods:	Master-slave method

For further technical data, see manual.

SAI active manual

SAI-aktiv Handbuch	German	**5617870000**
SAI-activ Manual	English	**5619160000**

Accessories

Designation	Cat. No.
SAISGM6/14 M23 9P bus connector M23, 9-pole, **plug, straight**	**1807660000**
SAISGM6/14 M23 9P bus connector M23, 9-pole, **plug, angled**	**1807650000**
SAIBWM6/14 M23 9P bus connector M23, 9-pole, **socket, straight**	**1807670000**
SAIBWM6/14 M23 9P bus connector M23, 9-pole, **socket, angled**	**1807680000**
SAIBWM6/14 M23 6P Power supply connector for SAI-HS, socket, M23, 6-pole, **angled**	**1789950000**
SAI-BGM6/14 M23 6P Power supply connector for SAI-HS, socket, M23, 6-pole, **straight**	**1799260000**

Applications table

Hood type	8 DI	8 DO	8 DI/4 DO	16 DI	8 DI/8 DO
Cat. No.	**8516980204**	**8516980206**	**8516980207**	**8516980205**	**8516980345**
Distributor bases UT					
Standard M12 (8-channel)	**1705941000**	**1705941000**	**1701251000**	**1701251000**	**1701251000**
Shortened design 4-channel/5-pole M12	**1701231000***	**1701231000***			
Standard HARAX®	**1760061000**	**1760061000**	**1766801000**	**1766801000**	**1766801000**
Shortened design 4-channel/4-pole	**1766781000***	**1766781000***			

Pin assignments, bus X71(IN) / X72(OUT)

M23 9-pole:

Pin	Signal name IN	Signal name OUT	Significance
	Plug X71	Socket X72	
1	DO1	DO2	Transmit data
2	DO1	DO2	Transmit data
3	DI1	DI2	Receive data
4	DI1	DI2	Receive data
5	COM_ISO (GND_ISO)	COM (GND)	Ground reference
6	PE*	PE*	Protective conductor
7	L24V*	L24V*	Logic voltage supply on bus supply
8	LGND	LGND*	Logic voltage supply on bus supply
9		RBST	Detection: further BTN connected
Enclosure	Screen_IN**	Screen_OUT**	

* = These connections are only daisy-chained and are not used for the module (remote installation bus is not supported).
** = The incoming and the outgoing screen are connected to the internal screen using 1 MOhm and 15nF.

Sensor-Actuator-Interface ACTIVE – Combi –

New I/O wiring concepts

Special applications – problematic available space – require the usage of an SAI-M8 distributor.

Machine manufacturers who use the bus systems need distributors with M8 and bus electronics. These M8 distributors with integrated electronics would be too large and heavy.

Weidmüller solves this problem with a combination of modules.

SAI Combi

The advantages in detail:

- Small flexible units, purely passive
- Only one sensor per socket, T-pieces are not needed
- Plugable electronics still possible, Can be placed where there is space
- No bus distributor on moving parts, No dragged bus cable
- No I/O on moving parts

The solution is protected by Weidmüller.

Ordering information

Type	Cat. No.
SAI-8-M16 3P M8	**1795900000**

Ordering information

Type	Cat. No.
SAI-HP-DP-16DI	**8516980177**
SAI-HS-DP-16DI	**8516980181**
SAI-HP-CAN-16DI	**8516980185**
SAI-HS-CAN-16DI	**8516980189**

You will find other variants (e.g. 8DI/8DO, DeviceNet or Interbus) on pages 28-32.

SAI-2-M-12P M16 UT	**1802330000**

Connection cable
SAIL-M16W-M16W 12P 2,0U **1805650000**

Compensating plate for difference in height:
SAI active distance plate **1805430000**

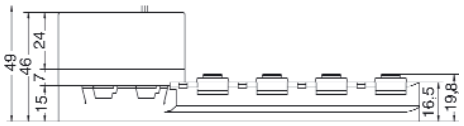
Connection plan for Profibus distributor with 2 off M16 12-pole on SAI-M8 3-pole on M16 12-pole

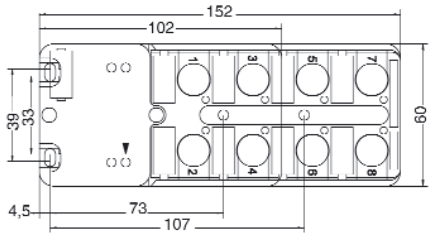
Cat. No.: **1802330000**

SL 3,5 Connection	Bit	16DI	8DI / 8DO	M16 12 pole "1"	M16 12 pole "2"	M8 contact 4
1	0.0	E0	E0	F		Bu1
2	1.0	E4	A0	K		Bu5
3	0.1	E1	E1	G		Bu2
4	1.1	E5	A1	A		Bu6
5	0.2	E2	E2	H		Bu3
6	1.2	E6	A2	D		Bu7
7	0.3	E3	E3	B		Bu4
8	1.3	E7	A3	E		Bu8
9	0.0	E8	E4		F	Bu1
10	1.0	E12	–		K	Bu5
11	0.1	E9	E5		G	Bu2
12	1.1	E13	–		A	Bu6
13	0.2	E10	E6		H	Bu3
14	1.2	E14	–		D	Bu7
15	0.3	E11	E7		B	Bu4
16	1.3	E15	–		E	Bu8
17 (LED)		+24 V		J + L		
18		0 V		C + M		
19		+24 V			J + L	
20		0 V			C + M	
21	Enclosure	PE				

Note:
To compensate for the difference in height between the active hood and the base, a distance plate is to be fitted.

SAI-ASi modules





Ordering information

	Designation	Cat. No.	Qty
Distributor IP68 for lines with 31 slaves			
Electronics hood			
4 inputs	SAI-ASI-S H 4E	**7902090000**	1
4 outputs	SAI-ASI-S H 4A	**1799270000**	1
2 inputs / 2 outputs	SAI-ASI-S H 2E/2A	**1799280000**	1
4 inputs / 4 outputs	SAI-ASI-S H 4E/4A	**7902100000**	1
Bases			
4E, 4A and 2E/2A	SAI-ASI 4E W BOTTOM	**1762470000**	1
4E/4A	SAI-ASI 4E/4A W BOTTOM	**1762290000**	1

Connection cables (accessories)
see page 40 and 41

Technical data:

Flammability class	UL 94 V0
Ambient temperature	-25…+70 °C
Storage temperature	-40…+85 °C
O-ring	Viton
Enclosure seal	PUR foamed
Electrical data according to VDE 110/1.89	
Protection class	IP 68
Max. current carrying capacity per output signal	2 A (derating)
Max. current carrying capacity per module	2 A (derating)
Operating voltage	10-27.6 Vdc
Other data	
Function data:	
for operating voltage	1 x LED green
for I/O function	1 x LED yellow per function

Sensor-Actuator-Interface ACTIVE

SAI-ASi system accessories

Power supply unit AS-PU 28

Gateway PB-DP

Ordering information

	Designation	Cat. No.	Qty
Power supply max. 85 W	AS-PU 28	**9455090000**	1
Power supply max. 240 W	AS-PU 28	**9455100000**	1

Ordering information

	Designation	Cat. No.	Qty
Gateway PB-DP, 12 Mbits	Gateway AS-i PBDP	**9455490000**	1

Power supply unit AS-PU 28	
Connections:	
Supply:	Screw terminals
ASI	Screw terminals
Input voltage	AC 88 V... 132 V/187 V ... 264 V
Output voltage	30.55 V / 2.8 A
Power	85 W
Ambient temperature	-10 ... +70 °C
Storage temperature	-20 ... +100 °C 50 x 134 x 120mm
Dimensions W x H x D	50 x 134 x 120 mm
Characteristic	AS interface data coupling
Protection class	IP20

Technical data for Gateways 945549	
Connections:	
Profibus-DP	Sub-D 9-pole
AS-i	Screw terminals
Transmission rate:	
Profibus	Adjustable up to 12MBits/s
AS-i	166 KBits/s fixed
Ambient temperature	0...+50 °C
Storage temperature	-15...+75 °C
Dimensions	75 x 100 x 110 mm
Protection class	IP20

Power supply unit AS-PU 28/6	
Connections:	
Supply	Screw terminals
AS-i	Screw terminals
Input voltage	AC 88 V... 132 V/187 V ... 264 V
Output voltage	30.55 V/2.8 A
	26 V/6 A
Power	240 W
Ambient temperature	-10 ... +70 °C
Storage temperature	-20 ... +100 °C
Dimensions w x h x d	120 x 134 x 120 mm
Characteristic	AS interface data coupling
Protection class	IP20

System accessories

	Designation	Cat. No.	Qty
Flat cable yellow	AS-KG-ge	**9455110000**	100 m
Flat cable black	AS-KG-sw	**9455120000**	100 m

Address programming unit

Ordering information

Designation	Cat. No.	Qty
SAI-ASI handheld	**1805410000**	1

Infrared programming adapter

Ordering information

Designation	Cat. No.	Qty
SAI-ASI IR adapter	**1804500000**	1

Connector M8 self-assembly with screw connection

Ordering information

Type	Cat. No.
Male 3-pole	
SAIS-M8-3P	**1803860000**
Male 4-pole	
SAIS-M8-4P	**1803850000**

Type	Cat. No.
Socket 3-pole	
SAIB-M8-3P	**1803870000**
Socket 4-pole	
SAIB-M8-4P	**1803880000**

Connector M8 self-assembly with insulation displacement connection

Ordering information

Type	Cat. No.
3-pole	
SAIS-3-IDC-M8	**1784040000**

Type	Cat. No.
4-pole	
SAIS-4-IDC-M8	**1784060000**

Angled metal connector M12 self-assembly for screened cables

Ordering information

Type	Cat. No.
SAIBW-M-4/8 M12	**1803910000**
SAIBW-M-5/8 M12	**1803920000**

Type	Cat. No.
SAISW-M-4/8 M12	**1803930000**
SAISW-M-5/8 M12	**1803940000**

M12 protective cap

Ordering information

Type	Cat. No.	Qty
SAI-SK	**9456050000**	**30**

M8 protective cap

Ordering information

Type	Cat. No.
SAI-SK-M8	**1802760000**

M12 metal protective cap

Type	Cat. No.
SAI-SK-M12-M	**1802750000**

Protecting hood for M12 distributor

Ordering information

Type	Cat. No.	Qty
SAI-4/6/8 empty	**1783460000**	**1**

Sensor-Actuator-Interface – cables, connectors, and accessories –

Miniature circular connector straight

Ordering information

Male

	Type	Cat. No.	Qty
M12 male straight 4-pole	SAIS-4/7	**9457550000**	1
M12 male straight 5-pole	SAIS-5/7	**9456940000**	1
M12 male straight 4-pole	SAIS-4/9	**1807340000**	1
M12 male straight 5-pole	SAIS-5/9	**1807350000**	1

Socket

	Type	Cat. No.	Qty
M12 socket straight 4-pole	SAIB-4/7	**9457240000**	1
M12 socket straight 5-pole	SAIB-5/7	**9457250000**	1
M12 socket straight 4-pole	SAIB-4/9	**1807230000**	1
M12 socket straight 5-pole	SAIB-5/9	**1807250000**	1

Miniature circular connector angled

Ordering information

Male

	Type	Cat. No.	Qty
M12 male angled 4-pole	SAISW-4/7	**9457290000**	1
M12 male angled 5-pole	SAISW-5/7	**9456950000**	1
M12 male angled 4-pole	SAISW-4/9	**1870360000**	1
M12 male angled 5-pole	SAISW-5/9	**1807370000**	1

Socket

	Type	Cat. No.	Qty
M12 socket angled 4-pole	SAIBW-4/7	**9457700000**	1
M12 socket angled 5-pole	SAIBW-5/7	**9457260000**	1
M12 socket angled 4-pole	SAIBW-4/9	**1807240000**	1
M12 socket angled 5-pole	SAIBW-5/9	**1807330000**	1

Adapter M12 on IDC

Ordering information

Male 4-pole

Type	Cat. No.	Qty
SAI S-4-IDC M12	**1781550000**	1

Socket 4-pole

Type	Cat. No.	Qty
SAI B-4-IDC M12	**1781540000**	1

SAIS EMC version

Ordering information

Plug

Type	Cat. No.	Qty
Male straight 4-pole		
FBCon M12 4P M EMC	**9455640000**	1
Male straight 5-pole		
SAISM 5/8S M12 5P A	**1784740000**	1

Socket

Type	Cat. No.	Qty
Socket straight 4-pole		
FBCon M12 4P FM EMC	**8426220000**	1

Miniature twin plug

Ordering information

M12 / 5-pole standard

Type	Cat. No.	Qty
Twin plug M12		
SAIS-ZW-S	**9457540000**	1

Accessories for SAI-M

Ordering information

Coding BL 3.5

Type	Cat. No.	Qty
BL/SL 3.5 KO SW	**1610100000**	100

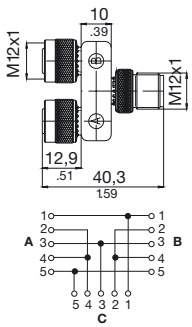
Common cable

Type	Cat. No.	Qty
SAIH-SLL- 3 x 0.75 mm^2		
-16 x 0.34 mm^2	**9457560000**	1 m

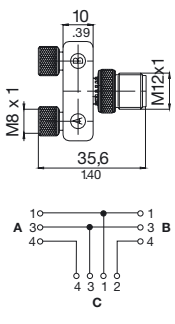
Twin-plugs Y-Plugs

Ordering information

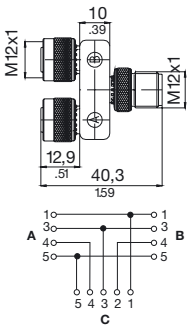
Type	Cat. No.	Qty
Distribution, pin 2 + 4 bridged		
SAI-Y-5S B2-4 M12/M12	**1783410000**	1



Type	Cat. No.	Qty
Single distribution		
SAI-Y-4-4/2-4 M12/M8	**1783420000**	1



Type	Cat. No.	Qty
Parallel distribution		
SAI-Y-5S PARA M12/M12	**1783430000**	1



M12 circular connector accessories for SAI-M/SAI-F HARAX® IDC quick fit connecting element

Ordering information

IDC HARAX®-quick fit connecting element

Type	Cat. No.	Qty
SAI-SA-3-IDC	**9457720000**	4
SAI-SA-4-IDC	**1766810000**	4

Ordering information

Label

Type	Cat. No.	Qty
ESG 9/20 MC neutral	**1609940000**	200

Ordering information

Protecting cap M12

Type	Cat. No.	Qty
SAI-SK-Harax IDC	**1794850000**	10

Technical data see page 22.

New: The IDC tool

Its advantages:

- Easy to use
- Very small, for confined assembly situations
- Protected solutions
- Metal design

Ordering information

Type	Cat. No.	Qty
SAI-IDC tool	**1795020000**	1

The installation displacement connections on the Weidmüller SAI distributor are currently the smallest and, at the same time, the most robust connecting elements on the market. Due to their very small size, the related distributors are available in same size in M12 or IDC versions. For large production runs in which, for example, more than 100 modules are used per year, it is recommendable to use a tool. This guarantees problem-free handling of the cables connected. The tool is not imperative. The connecting elements can be tightened by hand without problems.

Ordering information system

Weidmüller offers a range of cables, listed in the following.

Typical cable lengths are:

- 0.3 m
- 0.6 m
- 0.9 m
- 1.2 m
- 1.5 m
- 2.0 m
- 2.5 m
- 3.0 m
- 5.0 m
- 10.0 m

From practice – for practice

Weidmüller is the only manufacturer to use so-called **"talking article numbers"**. This innovative numbering system enables the comprehensive range of cables with its different lengths to be listed on only three pages. Competitors need approx. 30 pages for this list. Customers rapidly become familiar with Weidmüller's products and can select and order the cable for "their" application accurately and without problems.
For this purpose the article numbers are coded in the following manner: after the first six numbers, these are defined by Weidmüller, the customer adds "his/her" four numbers for the length of the cable.

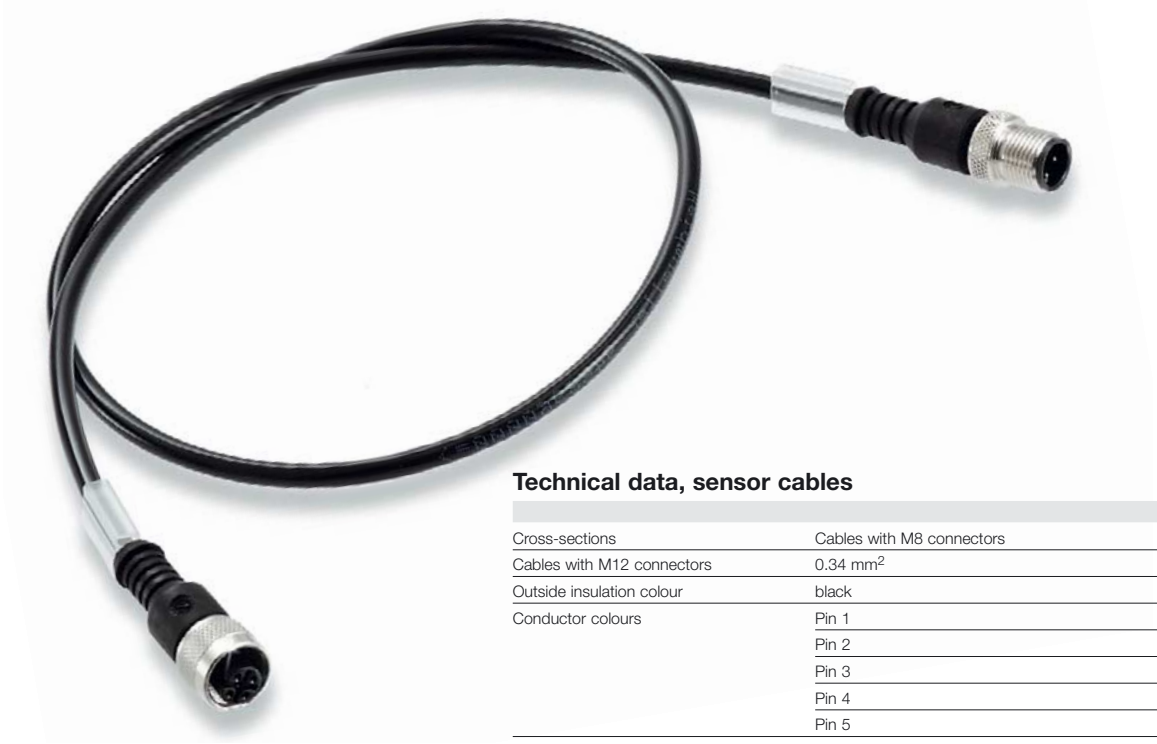
Example:

Ordering data for a typical cable
SAIL-M12G-M12G-5-**x,x**U = 945734**xxxx**

The placeholder "**x**" is replaced by the cable length. The example listed below is for a cable 1.2 m long.

SAIL-M12G-M12G-5-**1,2**U = 945734**0120**

In the case of connecting cables with two connectors, the male end is always given at the front and the socket side at the end.



Technical data, sensor cables

Cross-sections	Cables with M8 connectors	0.25 mm^2
Cables with M12 connectors	0.34 mm^2	
Outside insulation colour	black	
Conductor colours	Pin 1	brown
	Pin 2	white
	Pin 3	blue
	Pin 4	black
	Pin 5	grey
Material	Outside insulation	PUR
	Internal conductors	PVC
Conductor configuration	0.1 mm conductors	
Properties	Drag chain compatible / 1 million cycles 15 D, oil-resistant	
Protection class	M12	IP 68
	M 8 Snap In	IP 65
	M 8 Screw	IP 67
Contact surface	Gold plated	
Contact material	Spring	Cu Sn
	Male	CU Zn
Temperature resistance		-25 °C ... 85 °C
Current carrying capacity	3 and 4-pole	4 A
according to IEC 512 part 3	5-pole	3 A
Nominal voltage according to	3 and 4-pole	250 V AC/300 V DC
VDE standard 0110 ISO group C	5-pole	30 V AC/ 36 V DC
Special:	The M12 cables include a mechanical self-locking mechanism	

Technical data, actuator cables

Nominal voltage according to VDE standard 0110 ISO group III	24 V DC

All actuator cables given include a free-wheeling diode

Sensor cables
with a plug and an open cable end

Type	Cat. No.	Length
M12 male		
M12 straight male 3-pole	SAIL-M12G-3-x,xPUR	**945781xxxx**
M12 straight male 4-pole	SAIL-M12G-4-x,xPUR	**on request**
M12 straight male 5-pole	SAIL-M12G-5-x,xPUR	**945761xxxx**
M12 angled male 3-pole	SAIL-M12W-3-x,xPUR	**on request**
M12 angled male 4-pole	SAIL-M12W-4-x,xPUR	**on request**
M12 angled male 5-pole	SAIL-M12W-5-x,xPUR	**945767xxxx**
M12 socket		
M12 straight socket 3-pole	SAIL-M12BG-3-x,xPUR	**945782xxxx**
M12 straight socket 4-pole	SAIL-M12BG-4-x,xPUR	**945773xxxx**
M12 straight socket 5-pole	SAIL-M12BG-5-x,xPUR	**945791xxxx**
M12 angled socket 3-pole	SAIL-M12BW-3-x,xPUR	**945732xxxx**
M12 angled socket 4-pole	SAIL-M12BW-4-x,xPUR	**945774xxxx**
M12 angled socket 5-pole	SAIL-M12BW-5-x,xPUR	**945769xxxx**

Type	Cat. No.	Length
M8 male		
M8 male straight screw lock 3-pole	SAIL-M8GS-3-x,xU	**on request**
M8 male straight screw lock 4-pole	SAIL-M8GS-4-x,xU	**on request**
M8 male straight snap-on lock 3-pole	SAIL-M8GR-3-x,xU	**on request**
M8 male straight snap-on lock 4-pole	SAIL-M8GS-4-x,xU	**on request**
M8 male angled screw lock 3-pole	SAIL-M8WS-3-x,xU	**on request**
M8 male angled screw lock 4-pole	SAIL-M8WS-4-x,xU	**on request**
M8 male angled snap-on lock 3-pole	SAIL-M8WR-3-x,xU	**on request**
M8 male angled snap-on lock 4-pole	SAIL-M8WR-4-x,xU	**on request**
M8 socket		
M8 socket straight screw lock 3-pole	SAIL-M8GBS-3-x,xU	**945745xxxx**
M8 socket straight screw lock 4-pole	SAIL-M8GBS-4-x,xU	**945785xxxx**
M8 socket straight snap-on lock 3-pole	SAIL-M8GBR-3-x,xU	**on request**
M8 socket straight snap-on lock 4-pole	SAIL-M8GBR-4-x,xU	**on request**
M8 socket angled screw lock 3-pole	SAIL-M8WBS-3-x,xU	**945738xxxx**
M8 socket angled screw lock 4-pole	SAIL-M8WBS-4-x,xU	**945615xxxx**
M8 socket angled snap-on lock 3-pole	SAIL-M8WBR-3-x,xU	**on request**
M8 socket angled snap-on lock 4-pole	SAIL-M8WBR-4-x,xU	**on request**

SAIL connector
with LED

Ordering information

SAIL with LED

Type	Cat. No.	Qty
SAIL-M12BW(GN/GE)-3-0,3U	**9457800030**	1
SAIL-M12BW(GN/GE)-3-0,6U	**9457800060**	1
SAIL-M12BW(GN/GE)-3-0,9U	**9457800090**	1
SAIL-M12BW(GN/GE)-3-1,2U	**9457800120**	1
SAIL-M12BW(GN/GE)-3-1,5U	**9457800150**	1
SAIL-M12BW(GN/GE)-3-2,5U	**9457800250**	1
SAIL-M12BW(GN/GE)-3-3,0U	**9457800300**	1
SAIL-M12BW(GN/GE)-5-3,0U	**9457800500**	1
SAIL-M12BW(GN/GE)-10-3,0U	**9457801000**	1

Ordering information system

Example:

Ordering data for a typical cable
SAIL-M12G-M12G-5-**x,x**U = 945734**xxxx**

The placeholder "**x**" is replaced by the cable length. The example listed below is for a cable 1.2 m long.

SAIL-M12G-M12G-5-**1,2**U = 945734**0120**

In the case of connecting cables with two connectors, the male end is always given at the front and the socket side at the end.

Sensor cables with two connectors

Sensor cable	Type	Cat. No.
M12 straight to M12 straight		
M12 male straight to M12 socket straight 3-pole	SAIL-M12G-M12G-3-x,xU	**9457230000**
M12 male straight to M12 socket straight 3-pole	SAIL-M12G-M12G-2/4-0,3U	**9457140000**
with bridge in the socket between pin 2 and 4	SAIL-M12G-M12G-2/4-0,6U	**9456960000**
	SAIL-M12G-M12G-2/4-0,9U	**9456970000**
	SAIL-M12G-M12G-2/4-1,2U	**9456980000**
	SAIL-M12G-M12G-2/4-1,5U	**9456990000**
	SAIL-M12G-M12G-2/4-2,0U	**9457000000**
	SAIL-M12G-M12G-2/4-2,5U	**9457060000**
	SAIL-M12G-M12G-5/4-2,0U	**9457070000**
	SAIL-M12G-M12G-10/4-2,0U	**9457080000**
M12 male straight to M12 socket straight 4-pole	SAIL-M12G-M12G-4-0,3U	**9457150000**
	SAIL-M12G-M12G-4-0,6U	**9457160000**
	SAIL-M12G-M12G-4-0,9U	**9457170000**
	SAIL-M12G-M12G-4-1,2U	**9457180000**
	SAIL-M12G-M12G-4-1,5U	**9457190000**
	SAIL-M12G-M12G-4-2,0U	**9457200000**
	SAIL-M12G-M12G-4-2,5U	**9457090000**
	SAIL-M12G-M12G-4-5,0U	**9457100000**
	SAIL-M12G-M12G-4-10,0U	**9457110000**
M12 male straight to M12 socket straight 5-pin	SAIL-M12G-M12G-5-0,3U	**9457340030**
	SAIL-M12G-M12G-5-0,6U	**9457340060**
	SAIL-M12G-M12G-5-0,9U	**9457340090**
	SAIL-M12G-M12G-5-1,2U	**9457340120**
	SAIL-M12G-M12G-5-1,5U	**9457340150**
	SAIL-M12G-M12G-5-2,0U	**9457340200**
	SAIL-M12G-M12G-5-2,5U	**9457340250**
	SAIL-M12G-M12G-5-5,0U	**9457340500**
	SAIL-M12G-M12G-5-10,0U	**9457341000**

Sensor cable	Type	Cat. No.
M12 straight to M12 angled		
M12 male straight to M12 socket angled		
3-pole	SAIL-M12G-M12W-3-x,xU	**945739xxxx**
4-pole	SAIL-M12G-M12W-4-x,xU	**945731xxxx**
5-pole	SAIL-M12G-M12W-5-x,xU	**945727xxxx**
3-pole with bridges between pin 2 and 4	SAIL-M12G-M12W-4/2-x,xU	**945789xxxx**
M12 angled to M12 angled		
M12 male angled to M12 socket angled		
3-pole	SAIL-M12W-M12W-3-x,xU	**on request**
4-pole	SAIL-M12W-M12W-4-x,xU	**on request**
5-pole	SAIL-M12W-M12W-5-x,xU	**945790xxxx**
3-pole with bridges between pin 2 and 4	SAIL-M12W-M12W-4/2-x,xU	**945765xxxx**
M12 straight to M8 straight		
M12 male straight to M8 socket straight snap-on lock		
3-pole	SAIL-M12G-M8GBR-3-x,xU	**on request**
4-pole	SAIL-M12G-M8GBR-4-x,xU	**on request**
M12 male straight to M8 socket straight screw lock		
3-pole	SAIL-M12G-M8GBS-3-x,xU	**945777xxxx**
4-pole	SAIL-M12G-M8GBS-4-x,xU	**on request**
M12 straight to M8 angled		
M12 male straight to M8 socket angled snap-on lock		
3-pole	SAIL-M12G-M8WBR-3-x,xU	**945757xxxx**
4-pole	SAIL-M12G-M8WBR-4-x,xU	**on request**
M12 male straight to M8 socket angled screw lock		
3-pole	SAIL-M12G-M8WBS-3-x,xU	**945798xxxx**
3-pole with 2 LEDs	SAIL-M12G-M8W(GN/GE)-3-x,xU	**945776xxxx**
4-pole	SAIL-M12G-M8WBS-4-x,xU	**on request**

Sensor cable with three connectors twin cables

Sensor cable	Type	Cat. No.
M12 male to 2x M8 socket straight		
3-pole	SAIL-ZW-M8GB-3-x,xU:	**9457490000**
	SAIL-ZW-M8GB-3-0,3U	**9457490030**
	SAIL-ZW-M8GB-3-0,6U	**9457490060**
	SAIL-ZW-M8GB-3-0,9U	**9457490090**
	SAIL-ZW-M8GB-3-1,2U	**9457490120**
	SAIL-ZW-M8GB-3-1,5U	**9457490150**
	SAIL-ZW-M8GB-3-2,0U	**9457490200**
	SAIL-ZW-M8GB-3-2,5U	**9457490250**
	SAIL-ZW-M8GB-3-5,0U	**9457490500**
	SAIL-ZW-M8GB-3-10,0U	**9457491000**
M12 male to 2x M8 socket angled 3-pole	SAIL-ZW-M8GW-3-x,xU:	**on request**
M12 male to 2x M8 socket angled with LED 3-pole	SAIL-ZW-M8GW-(LD)-3-x,xU:	**9457410000**
M12 male to 2x M12 socket straight with LED 3-pole	SAIL-ZW-M12W(GN/GE)-4-2,0U	**on request**
	SAIL-ZW-M12W(GN/GE)-4-1,5U	**on request**
	SAIL-ZW-M12W(GN/GE)-4-1,0U	**on request**
	SAIL-ZW-M12W(GN/GE)-4-0,6U	**on request**

Valve connector cables / valve connector cables

Self-assembly connectors

Valve connector cable	Type	Cat. No.
Valve connector cable with M12 straight / M12 angled		
Version A with safety switching and LED to M12 straight	SAI-VSA-M12G-x,xU	
	SAI-VSA-M12G-0,6U	**9457010000**
	SAI-VSA-M12G-0,9U	**9457020000**
	SAI-VSA-M12G-1,2U	**9457030000**
	SAI-VSA-M12G-1,5U	**9457040000**
	SAI-VSA-M12G-2,0U	**9457050000**
	SAI-VSA-M12G-3,0U	**9457830000**
Version B according to industry standard with safety switching and LED to M12 straight	SAI-VSB-M12G-x,xU	**945768xxxx**
Version B according to DIN with safety circuit and LED to M12 straight	SAI-VSBD-M12G-x,xU	**945778xxxx**
Version C according to industry standard with safety switching and LED to M12 straight	SAI-VSC-M12G-x,xU	**945740xxxx**
Version C according to DIN with safety switching and LED to M12 straight	SAI-VSCD-M12G-x,xU	**945617xxxx**

Valve connector cable	Type	Cat. No.
Valve connector cables with open cable end		
Version A with safety switching and LED	SAI-VSA-x,xU	**945771xxxx**
Version B according to industry standard with safety switching and LED	SAI-VSB-x,xU	**945793xxxx**
Version B according to DIN with safety switching and LED	SAI-VSBD-x,xU	**945607xxxx**
Version C according to industry standard with safety switching and LED	SAI-VSC-x,xU	**945792xxxx**
Version C according to DIN with safety switching and LED	SAI-VSCDx,xU	**945624xxxx**

Self-assembly connectors	Type	Cat. No.
M12 male straight 5-pole	SAIS-5/7	**9456940000**
M12 male straight 4-pole	SAIS-4/7	**9457550000**
M12 socket straight 5-pole	SAIB-5/7	**9457250000**
M12 socket straight 4-pole	SAIB-4/7	**9457240000**
M12 male angled 5-pole	SAISW-5/7	**9456950000**
M12 male angled 4-pole	SAISW-4/7	**9457290000**
M12 socket angled 5-pole	SAIBW-5/7	**9457260000**
M12 socket angled 4-pole	SAIBW-4/7	**9457700000**
Twin connector M12	SAIS-ZW	**9457540000**

Ordering information system

Example:

Ordering data for a typical cable
SAIL-M12G-M12G-5-**x,x**U = 945734**xxxx**

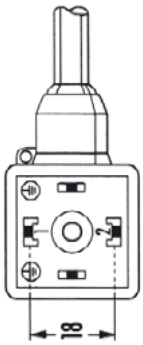
The placeholder "**x**" is replaced by the cable length. The example listed below is for a cable 1.2 m long.

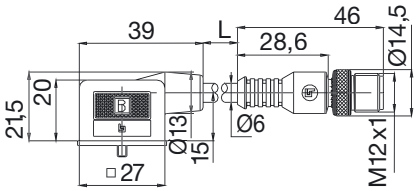
SAIL-M12G-M12G-5-**1,2**U = 945734**0120**

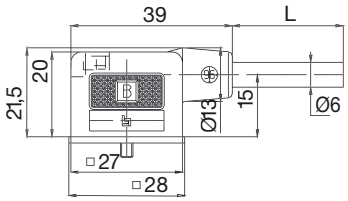
In the case of connecting cables with two connectors, the male end is always given at the front and the socket side at the end.

Sensor-Actuator-Interface – cables, connectors, and accessories –

Valve connector version A



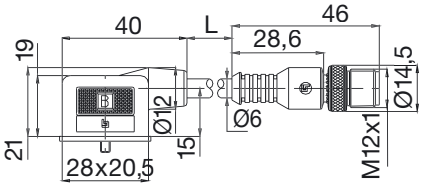


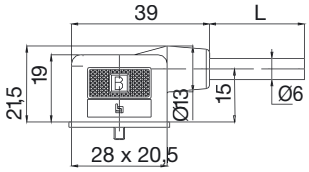


Contact distance 18 mm

Type: VSA

Valve connector version B





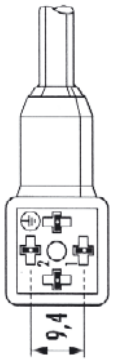
Contact distance 11 mm
Industry standard

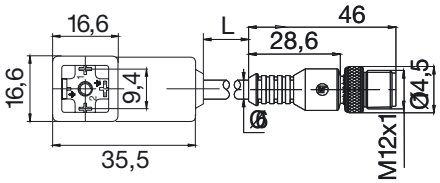
Type: VSB

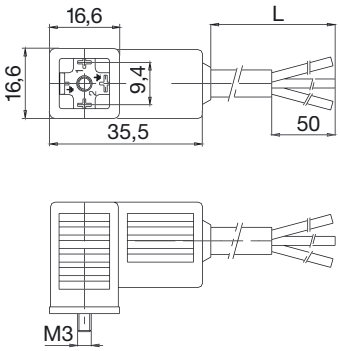
Contact distance 10 mm
Acc. to DIN 43650 (ISO 6952)

Type: VSBD

Valve connector version C







Contact distance 9,4 mm
Industry standard

Type: VSC

Contact distance 8 mm
Acc. to DIN 43650 (ISO 6952)

Type: VSCD

Chemical resistance of nickel

The statements on the resistance of nickel to chemicals only apply on the pre-condition that the coating is undamaged and is not subject to any mechanical loading. These statements are based on a literature search, here it is to be noted that pure nickel is not considered in the literature, but only alloyed nickel steels.

In the list on page 45 there are only 6 materials for which the usage of nickel is questionable.

The questionable materials are:

Chlorobenzine	1
Chloroform	1
Chromic acid hydride	1
Acetic acid	1
Fluohydric acid	2
Concentrated hydrochloric acid	2

The materials marked with 1 are not necessarily to be considered critical, but are not described in the literature.
The materials marked with 2 are to be considered questionable.

A further advantage of nickel is the temperature resistance. The resistance will not change up to a temperature of 120 °C.

Pure nickel:
Corrosion properties are determined by the resistance of the passive layer.

Good resistance in:
– water containing oxygen
– flowing sea water
– very good resistance in alkalis even at high temperatures and high concentrations
– neutral and alkaline salt solution (carbonate, phosphate, sulphate, chloride and nitrate) even at high concentrations and temperatures

Known problems:
– corrosion attack in heavily oxidizing acids and solutions containing chlorides
– in inorganic and organic acids only resistant in diluted solutions and at low temperatures
– coating is not toxic (formation of deposits by micro-organisms can lead to destruction of the passive coating)

Chemical resistance of Pocan® (PBT)

Pocan offers good resistance to chemicals. Organic solvents, such as aliphatic hydrocarbons, alcohols, ether, long-chain ester as well as fats, oils, and perchlorinated hydrocarbons do not corrode Pocan.
This also applies for water and aqueous solutions, neutral and acid salts, as well as diluted acids.
On the other hand it is susceptible to alkalis, oxidising acids, ketones, and phenols.

An increasing susceptibility towards universal alcohols, aromatics, and ketones occurs with rising ambient temperatures (from approx. 60 °C).

In the presence of water and aqueous solutions, hydrolytic degradation at higher temperatures leads increasingly to a decline in stability.

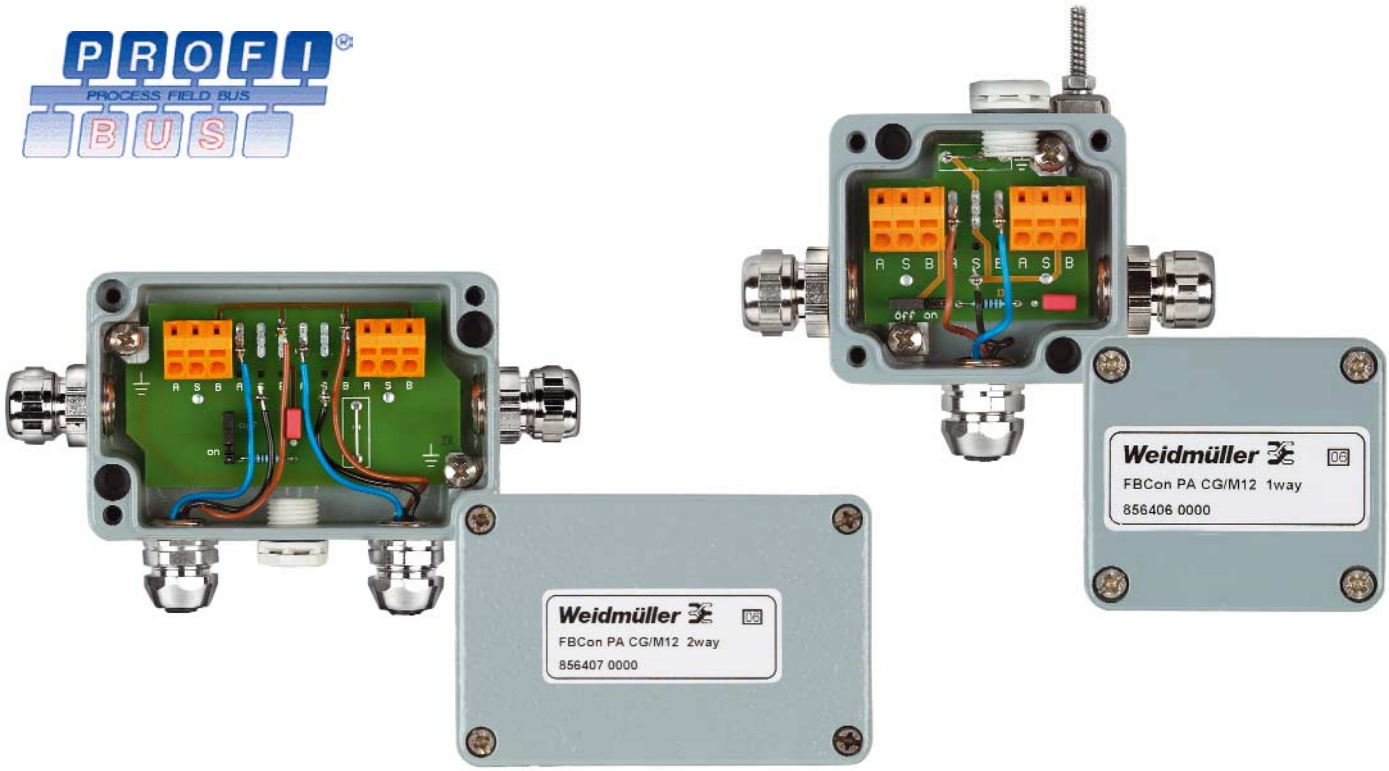
Substances like motor and transformer oils, petrols, brake fluids do not corrode Pocan, even at higher temperatures.

Medium	23 °C	60 °C
Acetic acid 10 %	±	±
Acetic acid	-	-
Acetone	+	-
Ammonia 10 %	+	-
Benzene	+	-
Brake fluid	+	+
Butane	+	+
Butanol	+	±
Butyl acetate	+	+
Calcium chloride 10 %	+	+
Carbon disulfide	+	±
Carbon tetrachloride	+	±
Chlorobenzine	-	-
Chloroform	-	-
Chromic acid hydride 10 %	+	+
Citric acid 10 %	+	±
Concentrated ammonia	±	-
Concentrated hydrochloric acid	-	-
Concentrated nitric acid	-	-
Concentrated sulfuric acid	-	-
Curd soap	+	+
Detergent	+	+
Dibutylphthalat	+	±
Diesel oil	+	+
Diethyl ether	+	±
Dioxan	+	-
Ethanol	+	+
Ethyl acetate	±	-
Ethyl dichloride	-	-
Ethyl glycol	+	±
Fluohydric acid 10 %	+	+
Formic acid 10 %	+	±
Freon 11	+	+
Frigen 113	+	+
Glycerin	+	+
Heptane	+	+
Hexane	+	+
Hydraulic oil	+	+
Hydrochloric acid 10 %	+	-
Hydrogen peroxide 20 %	+	±
Isopropanol	+	±

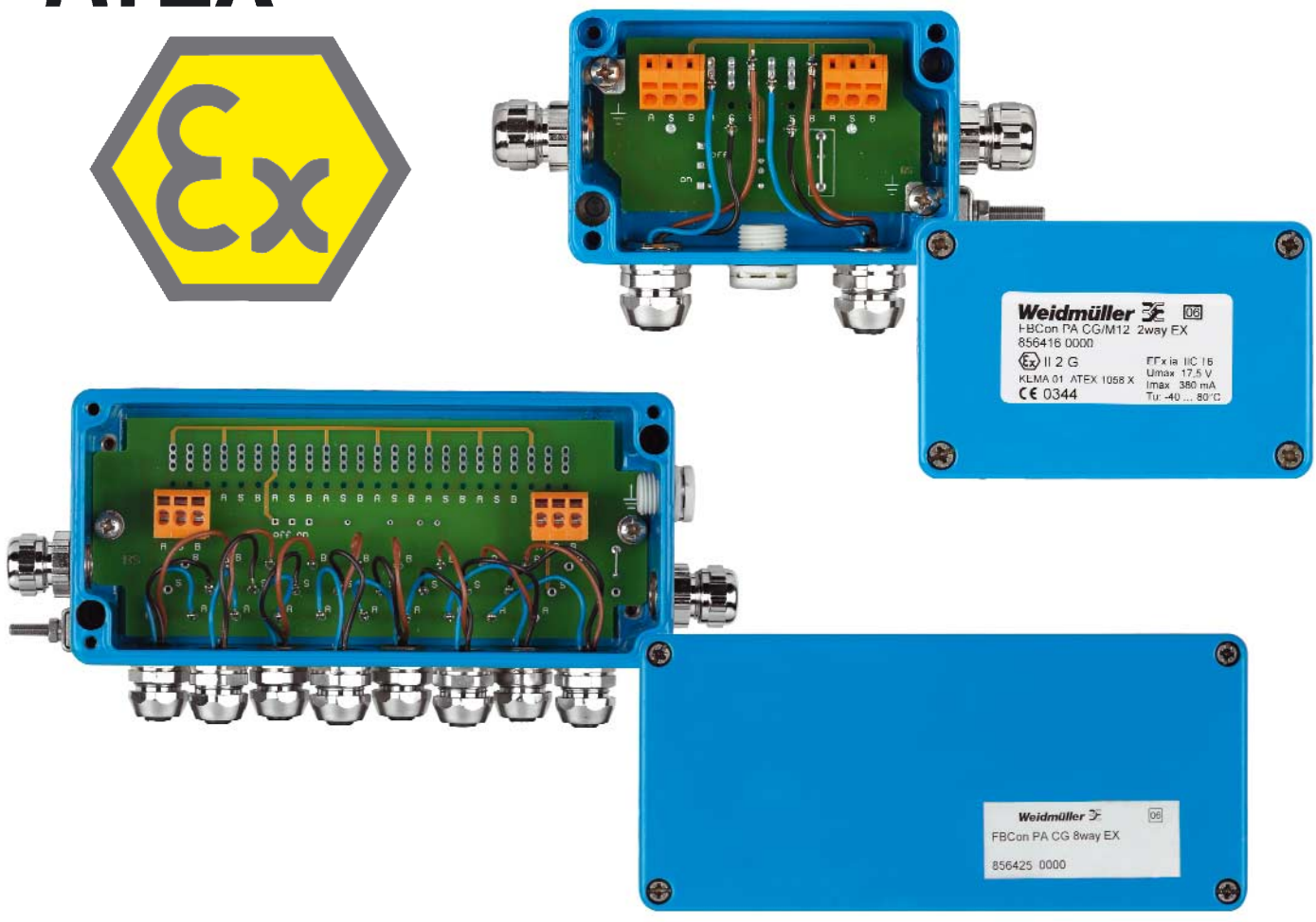
Medium	23 °C	60 °C
Linseed oil	+	+
Lubricating grease	+	+
Methanol	+	±
Methylene chloride	-	-
Methyl-ether-ketone	+	±
Mineral oils	+	+
Motor oils	+	+
Nitric acid 10 %	+	±
Octan	+	+
Olive oil	+	+
Paraffin oil	+	+
Perchlorethylene	±	-
Petrol, normal and lead-free	+	+
Petrol, super	+	+
Petrol/methanol 85/15	+	+
Petroleum	+	+
Phenol 10 %	-	-
Phosphoric acid 20 %	+	±
Potassium chloride 10 %	+	+
Potassium dichromate 10 %	+	+
Potassium hydroxide 10 %	-	-
Potassium permanganate 10 %	+	±
Saponated lye 10 %	+	±
Sodium carbonate 10 %	+	+
Sodium chloride 10 %	+	+
Sodium hydroxide 10 %	-	-
Sodium sulfite 10 %	+	+
Sulfuric acid 10 %	+	±
Tetrahydrofuran	-	-
Toluene	±	-
Transformer oil	+	+
Trichlorine enthylene/chloroform 1/1	±	-
Turpentine oil	+	+
Vegetable oils	+	+
Washing powder, synthetic	+	+
Water	+	+
Xylol	±	-

The values are to be understood as for guidance. A definite statement can only be made when based on the respective case in question.

\+ = resistant
\- = not resistant
± = partly resistant


Weidmüller
FBCon PA CG/M12 1way
856406 0000
Weidmüller
FBCon PA CG/M12 2way
856407 0000

ATEX


Weidmüller
FBCon PA CG/M12 2way EX
856416 0000
II 2 G
KEMA 01 ATEX 1058 X
0344
Weidmüller
FBCon PA CG 8way EX
856425 0000

The PROFIBUS-PA

is an open field-bus standard (EN 50 170, IEC 1158-2, DIN 19 245). It was specifically developed for the requirements of the Process Industry technology, in particular remote supply and intrinsic safety. PROFIBUS-PA permits several sensors and actuators to be operated on one common bus.
The devices are supplied with power via 2-wire technology with the process data communication being executed digitally.

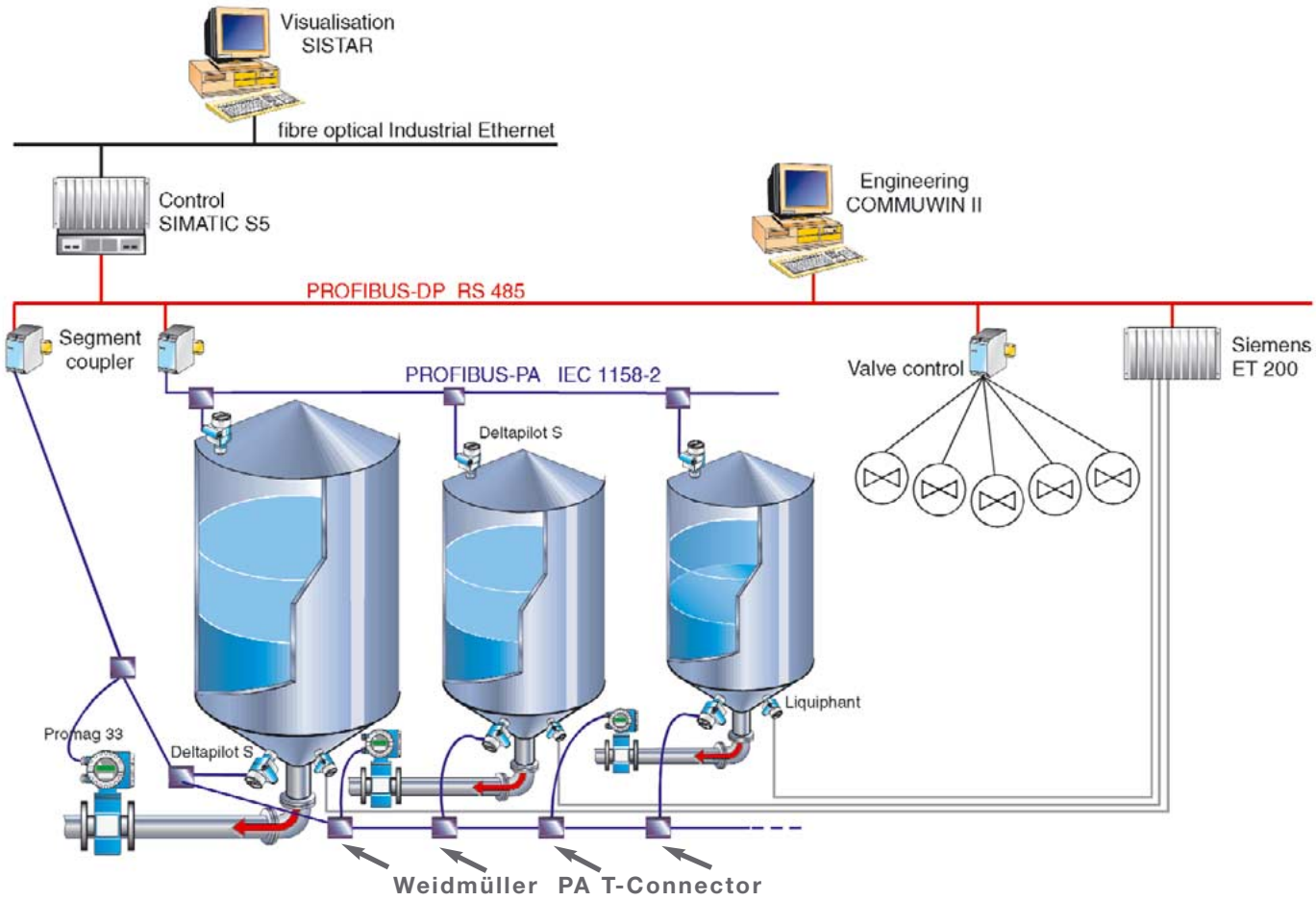
Integration into the PROFIBUS-DP network is carried out by means of a Segment Coupler.

Specific advantages of PROFIBUS-PA:

- Reduced wiring costs
- Minimised design costs of the process control system
- Remote interrogation and programming of field devices
- Intrinsically safe version for applications in potentially explosive atmospheres.
- Continuing development and support through PROFIBUS User and Trade Organisation (PNO)

Weidmüller offers here the PROFIBUS-PA T-Connector.
In the event of service or plant modification, the PROFIBUS-PA T-Connector from Weidmüller permits the connection or replacement of field devices without interrupting the bus system.

Typical PROFIBUS System Layout



When accurate measuring of a tank level within a hazardous area at a paint producer in South Africa was required, PROFIBUS-PA using T-Connectors from Weidmüller provided the solution.

Using intrinsically safe circuits, the expense of providing Ex barriers was avoided.

Remote interrogation and programming of devices meant that personnel access into the hazardous area could be kept to a minimum.

"ADLER-Werk Lackfabrik" has developed over more that 6 decades to become one of Austria's largest producers of paints and coatings. For ADLER, the PROFIBUS-PA system offers, in comparison to the previous mix of process technologies, several advantages, from reduced wiring to considerably more efficient operation. The Weidmüller PA-T-Connector was used here in connection with flow measuring systems.

Changing over from traditional 4-20 mA technology to Profibus PA meant that the Bitburger Brewery in Germany was able to see significant cost savings in cabling and operation and allowed an easy integration of existing parts of the plant with new systems.

Here, T-Connectors from Weidmüller were used for the connection of the hydrostatic level and pressure transmitters.

Under the motto “the communication system must be economical to run” PROFIBUS PA was implemented at Wacker Chemie in Cologne, Germany.

Due to the fact that when chemicals and process materials are manufactured, potentially explosive atmospheres can result, intrinsically safe circuits were required, into which the T-Connector from Weidmüller found its natural position.

The result: increased operability together with total system cost savings.

PROFIBUS PA T-Connector

- **For industrial application**
- **Standard**

The **PROFIBUS-PA** installation products are increasingly found in the

- Food industries
- Fine and speciality chemicals
- Bulk chemicals industry

The range is designed to accommodate a wide range of customer requirements in the harshest of environments.

These include Standard and Hazardous Area Versions with either single or multiple quick-connection variants with M12 connector or cable gland.

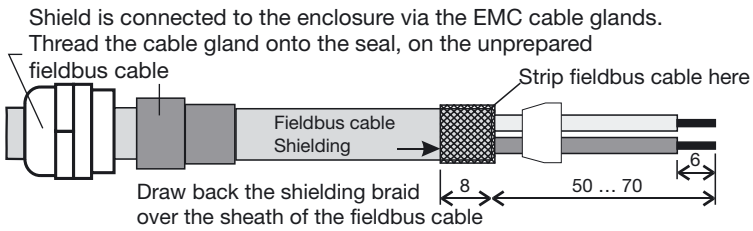
Weidmüller offers, for almost every application, a solution. In the case you don't see your solution here, please contact your local sales office.

PROFIBUS-PA T-Connector standard

- 1, 2, 4, 8-way with EMC gland industrial + EX / ATEX
- Overvoltage protection optional

The **PROFIBUS-PA T-Connector** is intended for the coupling of sensors, actuators and measuring instruments.

- Type of protection IP 66
- Modular design
- Non-interrupted BUS operations, also when being serviced
- Easy to use
- Low installation costs
- External grounding cable
- Pressure-compensation element
- EMC cable gland



Use ferrules!

The PROFIBUS-PA

is an open field-bus standard (EN 50 170, IEC 1158-2, DIN 19 245). It was specifically developed for the requirements of the Process Industry technology, in particular remote supply and intrinsic safety. PROFIBUS-PA permits several PA sensors and actuators to be operated on one common bus. The devices are supplied with power via 2-wire technology with the process data communication being executed digitally.

Integration into the PROFIBUS-DP network is carried out by means of a Segment Coupler. Specific advantages of PROFIBUS-PA :

- Reduced wiring costs
- Minimised design costs of the process control system
- Remote interrogation and programming of field devices
- Continuing development and support through PROFIBUS User and Trade Organisations (PNO)

Weidmüller offers here the PROFIBUS-PA FB Connector. In the event of service or plant modification, the PROFIBUS-PA FB-Connector from Weidmüller permits the connection or replacement of field devices without interrupting the bus system.

Extensive accessories as well as pre-assembled cables and plugs round off the program.

Technical data for pages 52-54

Temperature range	
Operating temperature	from -40 to 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 clamp connection 0.5 - 1.5 mm^2
Cable bushing	Cable gland M16
Clamping area	5.5 - 9.5 mm
Measuring instrument connector M12 x 1 4-pole	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

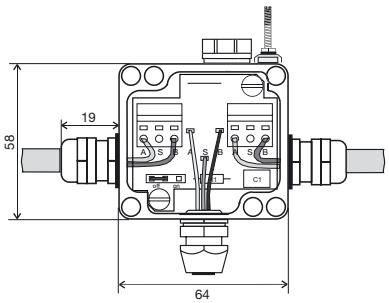
Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 1way	**8564060000**
Profibus PA T distributor type FBCon PA CG/M12 2way	**8564070000**
Profibus PA T distributor type FBCon PA CG/M12 4way	**8564080000**
Profibus PA T distributor type FBCon PA CG/M12 8way	**8564310000**
Profibus PA T distributor type FBCon PA CG 1way	**8564090000**
Profibus PA T distributor type FBCon PA CG 2way	**8564100000**
Profibus PA T distributor type FBCon PA CG 4way	**8564110000**
Profibus PA T distributor type FBCon PA CG 8way	**8564300000**

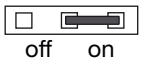
The measuring instruments are connected using an M 12 connection.
The screen is connected to the housing via the EMC cable gland.

PROFIBUS-PA T-Connector standard 1-way

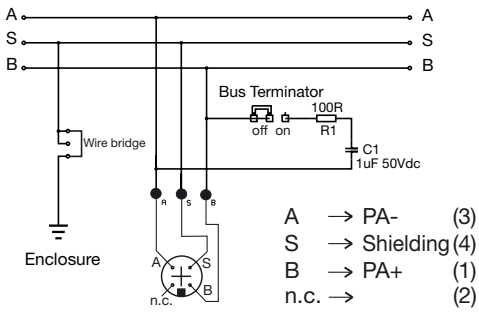
Type FBCon PA CG/M12 1way



Bus terminator:



Circuit diagram

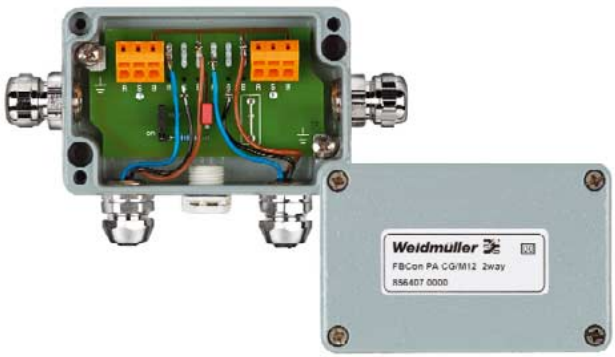


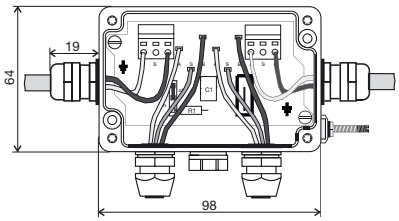
Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 1way	**8564060000**

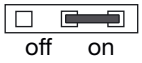
PROFIBUS-PA T-Connector standard 2-way

Type FBCon PA CG/M12 2way

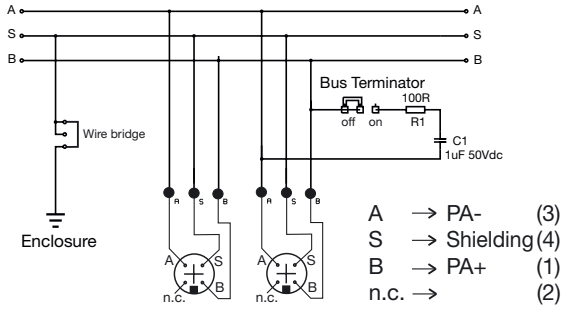




Bus terminator:



Circuit diagram



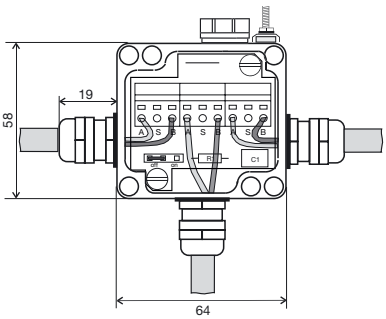
Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 2way	**8564070000**

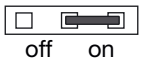
The measuring instruments are connected directly in the distributor via the EMC cable gland.
The screen is connected to the housing via the EMC cable gland.

PROFIBUS-PA T-Connector EMC version 1-way

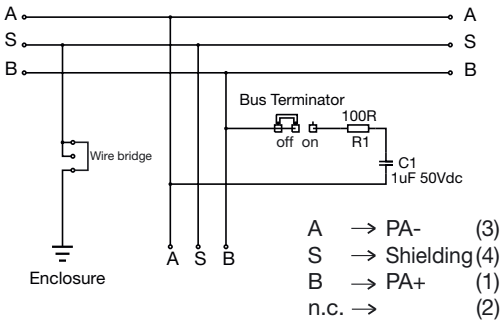
Type FBCon PA CG 1way



Bus terminator:



Circuit diagram

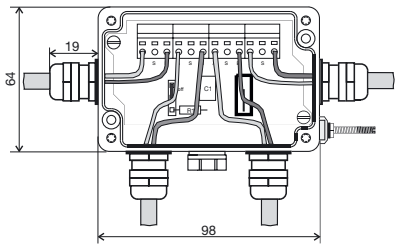


Ordering data

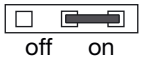
Type	Cat. No.
Profibus PA T distributor type FBCon PA CG 1way	**8564090000**

PROFIBUS-PA T-Connector EMC version 2-way

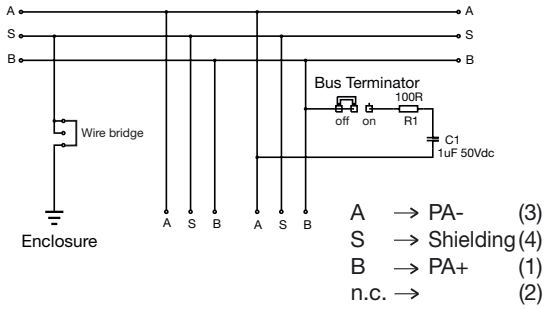
Type FBCon PA CG 2way



Bus terminator:



Circuit diagram



Ordering data

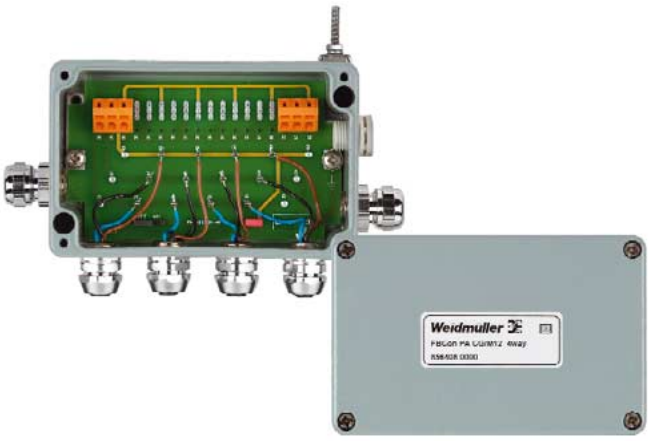
Type	Cat. No.
Profibus PA T distributor type FBCon PA CG 2way	**8564100000**

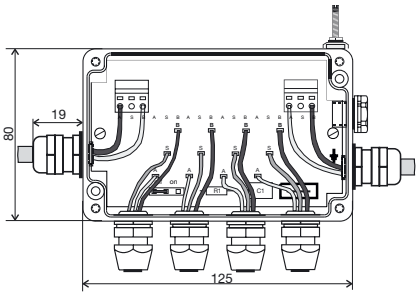
Field-bus components for industrial applications with tension clamp connection

The measuring instruments are connected using an M 12 connection.
The screen is connected to the housing via the EMC cable gland.

PROFIBUS-PA T-Connector standard 4-way

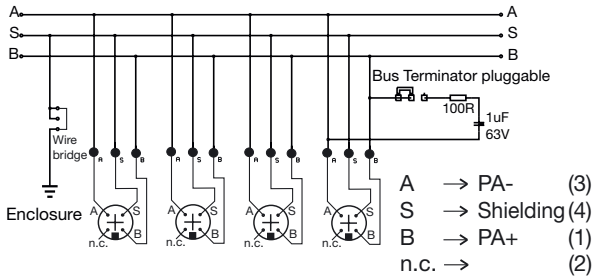
Type FBCon PA CG/M12 4way





Bus terminator:

Circuit diagram

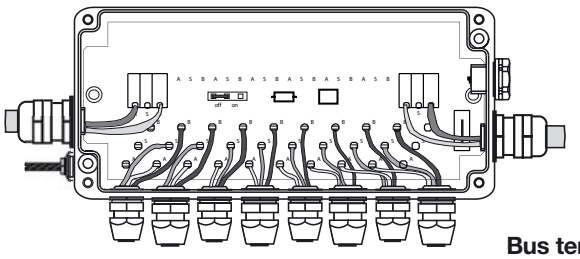


Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 4way	**8564080000**

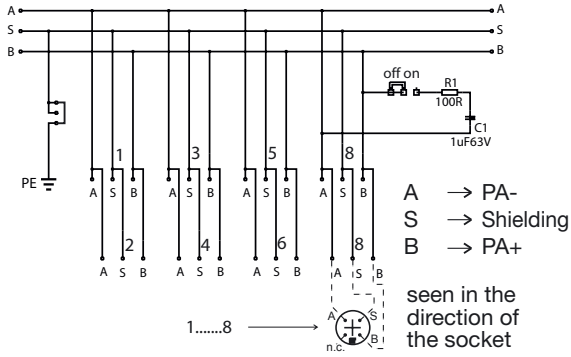
PROFIBUS-PA T-Connector standard 8-way

Type FBCon PA CG/M12 8way



Bus terminator:

Circuit diagram



Ordering data

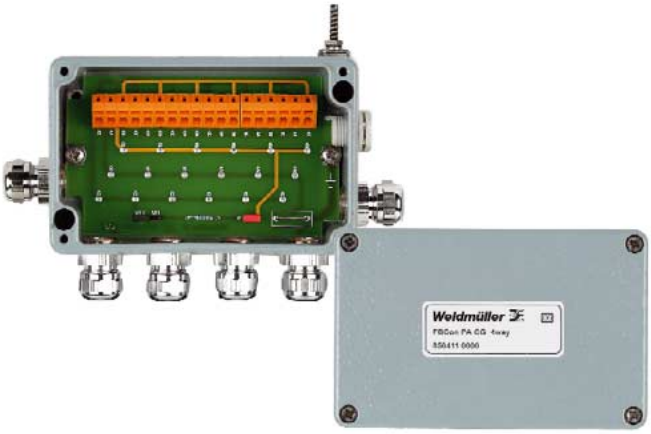
Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 8way	**8564310000**

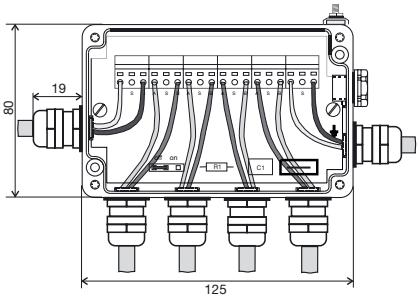
Field-bus components for industrial applications with tension clamp connection

The measuring instruments are connected directly in the distributor via the EMC cable gland.
The screen is connected to the housing via the EMC cable gland.

PROFIBUS-PA T-Connector EMC version 4-way

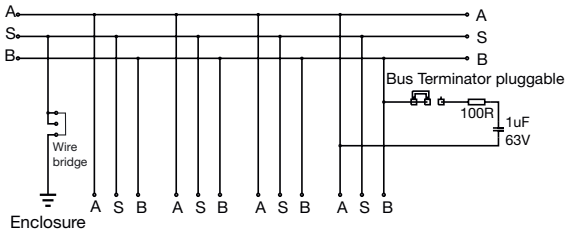
Type FBCon PA CG 4way





Bus terminator:

Circuit diagram



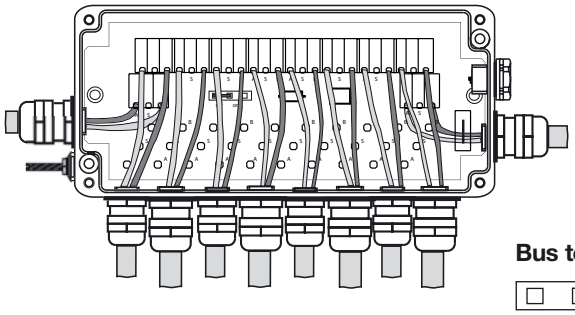
A → PA- (3)
S → Shielding (4)
B → PA+ (1)
n.c. → (2)

Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG 4way	**8564110000**

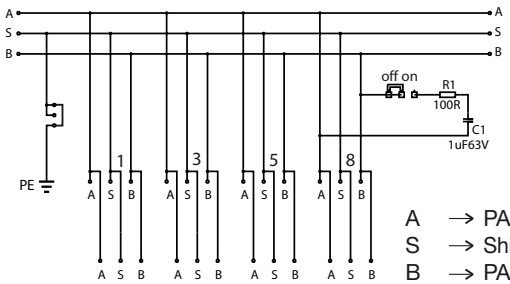
PROFIBUS-PA T-Connector EMC version 8-way

Type FBCon PA CG 8way



Bus terminator:

Circuit diagram



A → PA-
S → Shielding
B → PA+

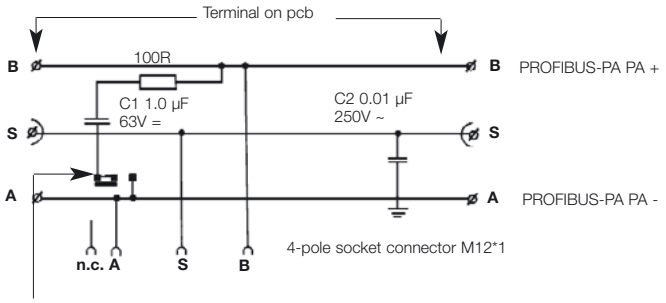
Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG 8way	**8564300000**

PROFIBUS PA distributor with screw connection

PROFIBUS-PA T-Connector standard

Circuit diagram



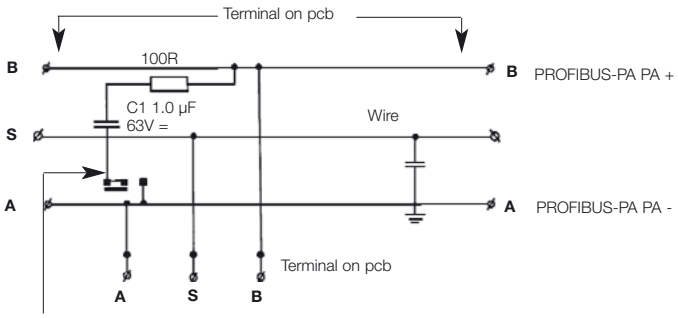
off: no Bus Terminator (delivery status)
on: Bus Terminator active

Ordering data

Type	Cat. No.
PROFIBUS-PA T-Connector standard	**8426000000**

PROFIBUS-PA T-Connector with 3 PG cable glands

Circuit diagram



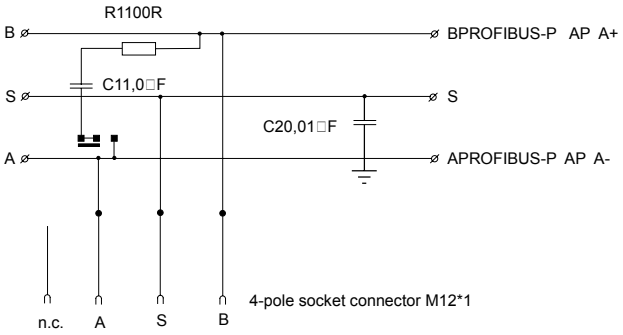
off: no Bus Terminator (delivery status)
on: Bus Terminator active

Ordering data

Type	Cat. No.
PROFIBUS-PA T-Connector with 3 PG cable glands	**9455940000**

PROFIBUS-PA T-Connector with 2 EMC cable glands

Circuit diagram

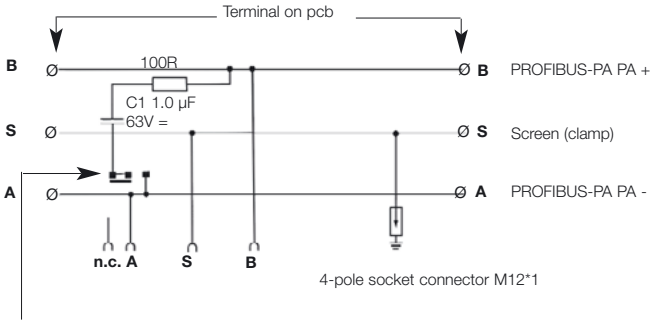


Ordering data

Type	Cat. No.
PROFIBUS-PA T-Connector with 2 EMC cable glands	**8426010000**

PROFIBUS-PA T-Connector with overvoltage protection

Circuit diagram



off: no Bus Terminator (delivery status)
on: Bus Terminator active

Screen is connected with the housing by the cable gland

Ordering data

Type	Cat. No.
PROFIBUS-PA T-Connector with overvoltage protection	**8426020000**

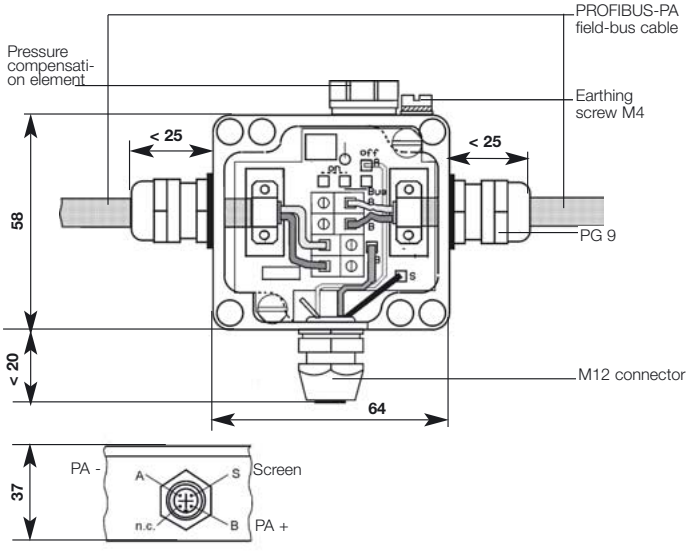
The overvoltage protection ensures safe discharge against earth potential

Technical data

Temperature range	
Operating temperature	- 40 to 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	Screw terminals 0.5 - 1.5 mm² (AWG 26 - 16)
Cable bushing	Cable gland PG 9 / Clamping range 4.0 - 8.0 mm
Measuring instrument connector	Contact brass,
M12 x 1 4-pole	Surface CuZnAu
Voltage arrestor, optional	90 V ignition voltage DC / 700 V at 1 kV/µS
	2.5 KA discharge current 8/20 µs

Installation advice

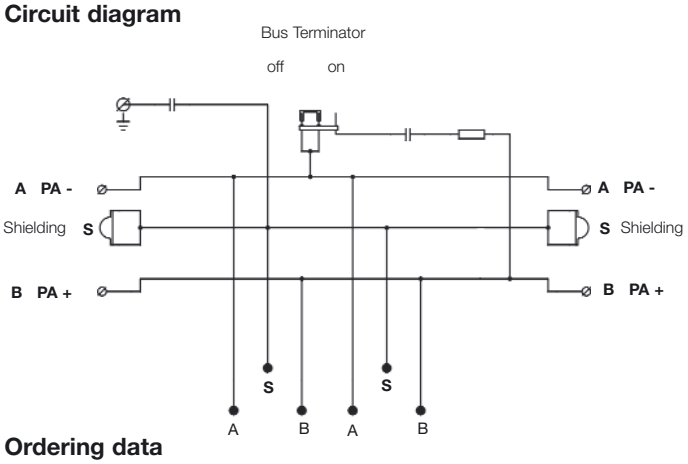
Torques screw terminals	0.4 Nm
Torques cable gland on housing	6.0 Nm
Coupling ring PG cable gland	4.0 Nm
Housing lid	1.8 - 2.0 Nm
Adapter/stub cable	hand-tight
External earthing cable	1.8 - 2.0 Nm
(The use of a cable shoe is recommended)	Connection according to circuit diagram

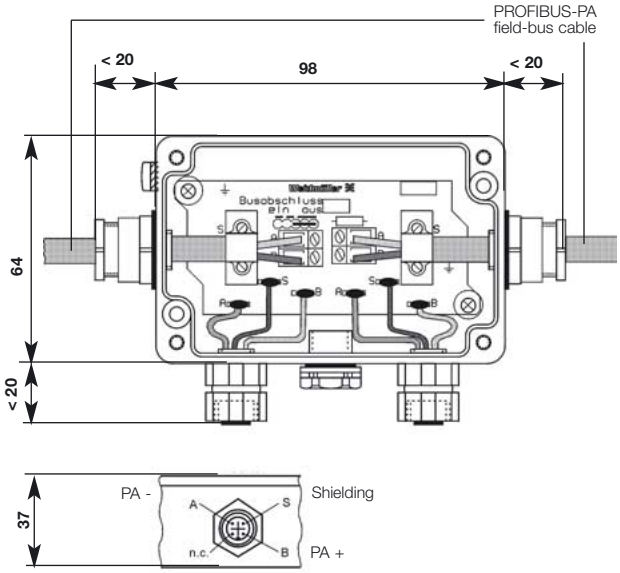


PROFIBUS PA distributor with screw connection

PROFIBUS-PA -Connector 2-way

Circuit diagram



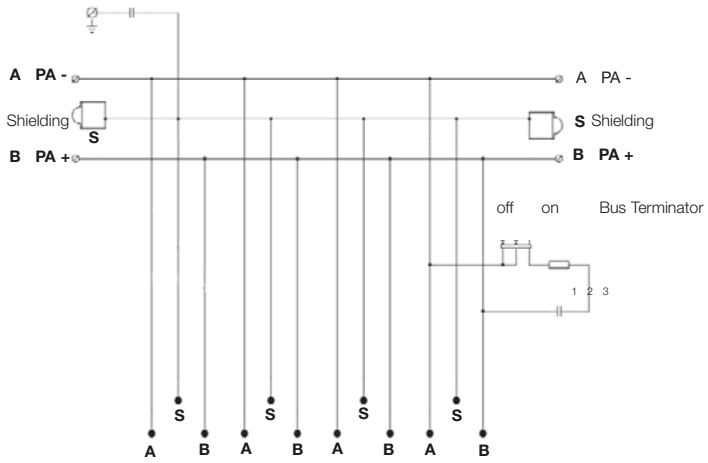


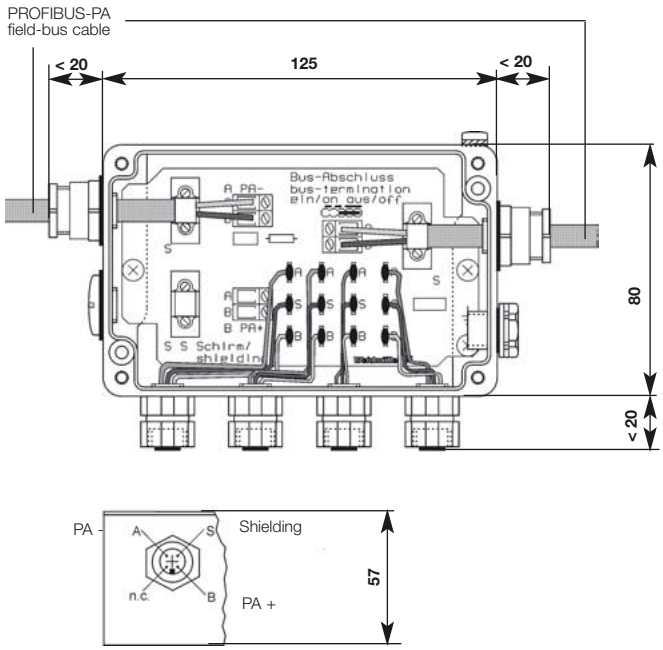
Ordering data

Type	Cat. No.
PROFIBUS-PA 2-WAY Connector	**8491180000**

PROFIBUS-PA -Connector 4-way

Circuit diagram





Ordering data

Type	Cat. No.
PROFIBUS-PA 4-WAY Connector	**8426300000**

Technical data

Temperature range	
Operating temperature	- 40 to 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	Screw terminals 0.5 - 1.5 mm² (AWG 26 - 16)
Cable bushing	Cable gland PG 9 / Clamping range 4.0 - 8.0 mm
Measuring instrument connector M12 x 1 4-pole	Contacts brass, Surface CuZnAu

Installation advice

Torques screw terminals	0.4 Nm
Torques cable gland on housing	6.0 Nm
Coupling ring PG cable gland	4.0 Nm
Housing lid	1.8 - 2.0 Nm
Stub cable	hand-tight
External earthing cable	1.8 - 2.0 Nm
(The use of a cable shoe is recommended) Connection according to circuit diagram	

PROFIBUS PA T-Connector

- **EEx (ia)**

The **PROFIBUS-PA** installation products are increasingly found in the

- Food industries
- Fine and speciality chemicals
- Bulk chemicals industry.

The range is designed to accommodate a wide range of customer requirements in the harshest of environments.

These include Standard and Hazardous Area Versions with either single or multiple quick-connection variants with M12 connector or cable gland.

Weidmüller offers, for almost every application, a solution. In the case you don't see your solution here, please contact your local sales office.

PROFIBUS-PA T-Connector - EEx (ia)

- 1-way
- 2-way
- 4-way
- 8-way

The **PROFIBUS-PA T-Connector EEx (ia)** is intended for the coupling of sensors, actuators and measuring instruments in areas subject to explosion hazards.

- Approval for intrinsically safe usage ATEX approval
- Type of protection IP 66
- Modular design
- Non-interrupted BUS operations, also when being serviced
- Easy to use
- External grounding cable
- External bus terminator

EX AREA – EX AREA – EX AREA – EX AREA – EX AREA – EX

A new concept for explosion protection in Europe

The so-called ATEX directive (from the French “atmosphères explosives”), official number 94/9/EC, was defined in law in 1996 in the member states of CENELEC. Behind the concept of the new directive was the intention of simplifying the previous system where changes in the laws in the member states were regulated by national and international standards. The law was passed under article 95 of the Treaty of Rome (foundation of the European Union). The directive ATEX 95 resulted from this law.

First standards such as the EN50014 series for hazard areas were adopted in the EC directive. As national legal requirements are based on this directive, even minor changes require a standards change in the related directive as well as in national law.

The ATEX directive is not based on a single standard, but specifies a series of essential health and safety requirements. The EN50014 series of ‘harmonised standards’ support the ATEX directive, but no longer stipulates their content. This is termed a ‘new concept’.

Objective of the directive

ATEX 95 is concerned with the continual introduction and commissioning of all products on the market. Primarily, the issue is the free exchange of goods across national borders within the EU and the member states of CENELEC.

Schedule

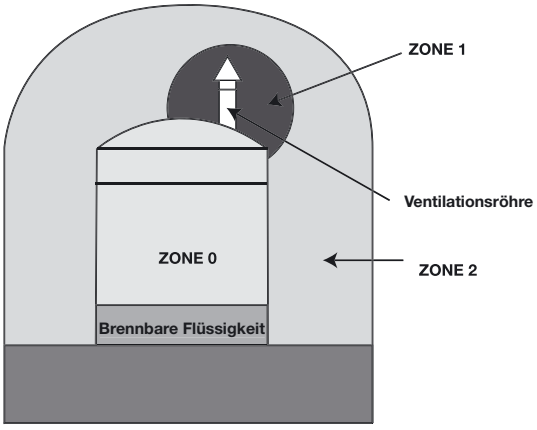
As mentioned above, ATEX has flowed into national law making since 1996. Up until 30.06.2003 ATEX is of equal importance as an option alongside the “old concept”, but it is preferred. From 01.07.2003 only ATEX is applicable.

All products that are to be placed in operation after this date must meet the requirements of the directive.
This also means that for long-term, already ongoing projects, ATEX must be taken into account now.

The difference with ATEX

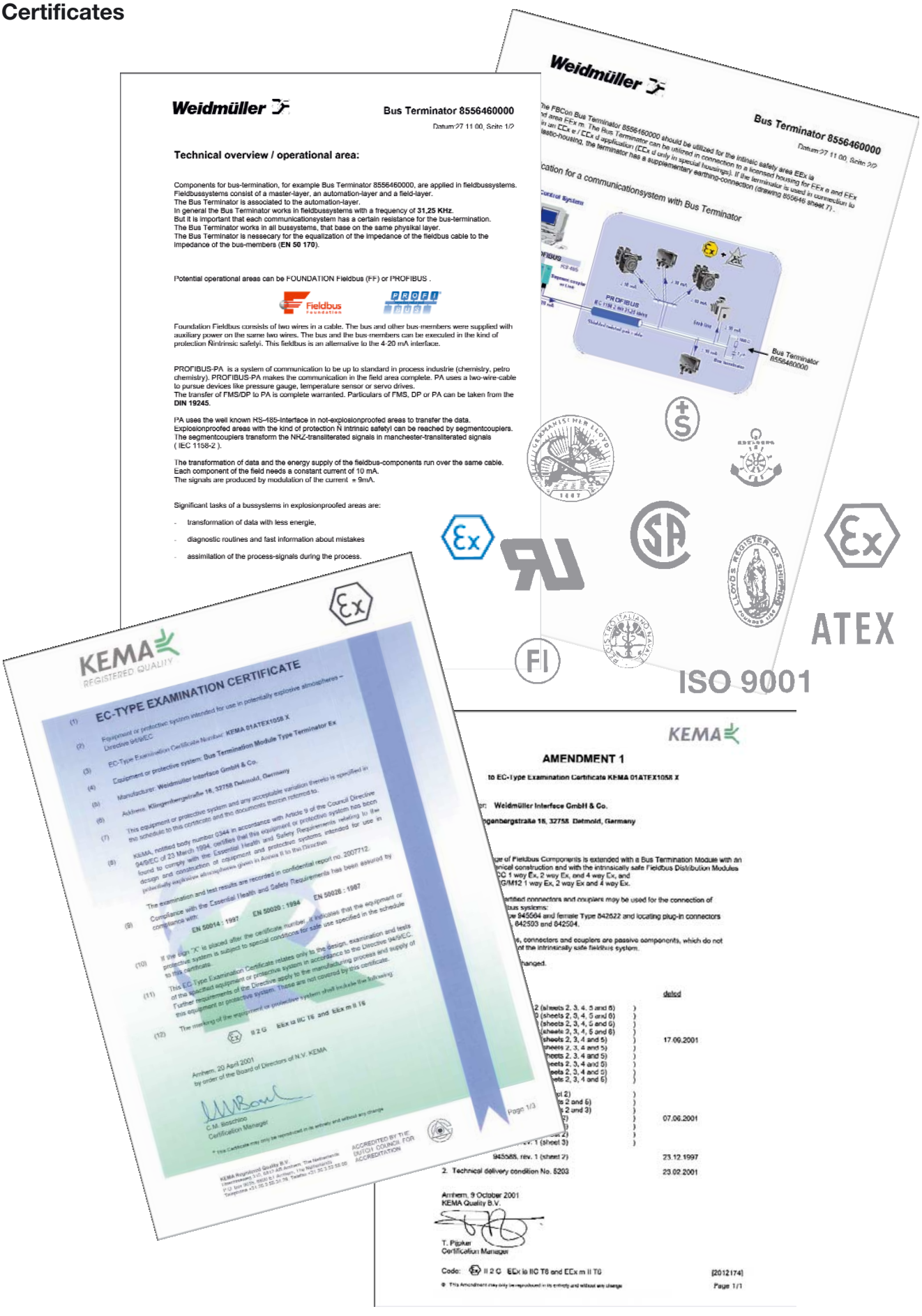
In comparison to the “old concept”, the mechanical components and systems are to be taken into account with ATEX.
This also relates to mining.

The existing definition of the term “area subject to explosion hazards” remains unaffected. This refers to inflammable substances and materials that could deflagrate with air under atmospheric conditions.



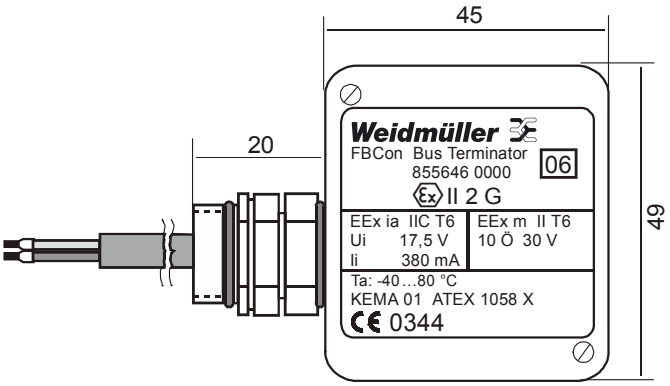
Behälter für brennbare Flüssigkeiten

Certificates

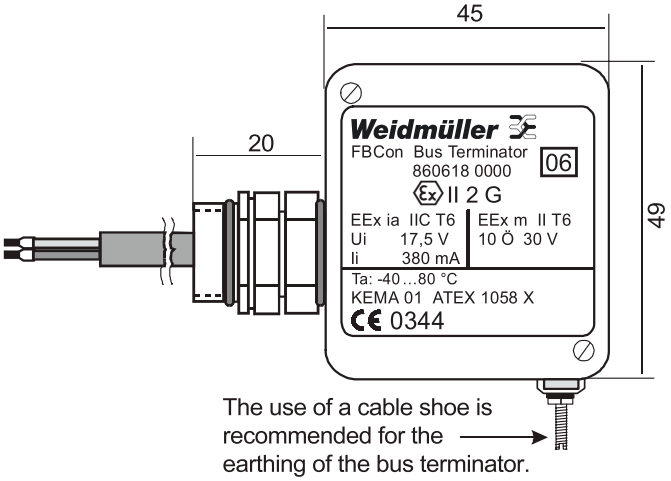


FBCon Bus Terminator

FBCon Bus Terminator without earth connection



FBCon Bus Terminator with earth connection



Ordering data

Type	Cat. No.
FBCon Bus Terminator EEx with locking clip + without earth connection	**8556460000**
FBCon Bus Terminator EEx without locking clip + without earth connection	**8606190000**

Technical data

Temperature range/operating temperature	- 40 to 80 °C
Type of protection	IP 66
Material of housing	high-quality aluminium alloy (AL - Si 12)
Surface	black powder coated
Connecting cable	2x0.14 mm^2
Cable bushing	Bus adapter M16

Installation advice

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

Ordering data

Type	Cat. No.
FBCon Bus Terminator EEx with locking clip + with earth connection	**8606180000**
FBCon Bus Terminator EEx without locking clip + with earth connection	**8606200000**

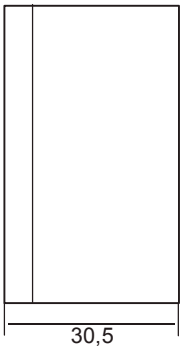
Technical data

Temperature range/operating temperature	- 40 to 80 °C
Type of protection	IP 66
Material of housing	high-quality aluminium alloy (AL - Si 12)
Surface	black powder coated
Connecting cable	2x0.14 mm^2
Cable bushing	Bus adapter M16

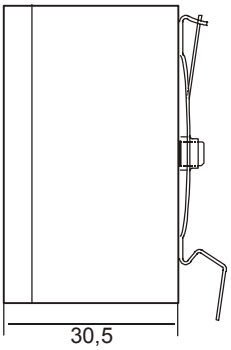
Installation advice

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

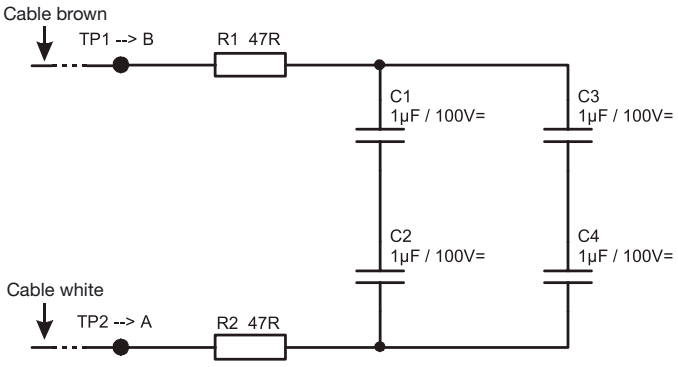
Housing lid without locking clip

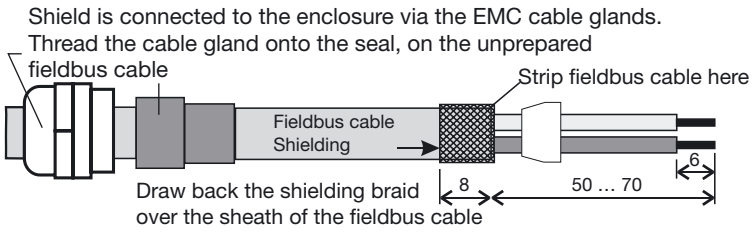


Housing lid with locking clip



Circuit diagram





Use ferrules!

The PROFIBUS-PA

is an open field-bus standard (EN 50 170, IEC 1158-2, DIN 19 245). It was specifically developed for the requirements of the Process Industry technology, in particular remote supply and intrinsic safety. PROFIBUS-PA permits several PA sensors and actuators to be operated on one common bus. The devices are supplied with power via 2-wire technology with the process data communication being executed digitally.

Integration into the PROFIBUS-DP network is carried out by means of a Segment Coupler. Specific advantages of PROFIBUS-PA :

- Reduced wiring costs
- Minimised design costs of the process control system
- Remote interrogation and programming of field devices
- Intrinsically safe version for applications in potentially explosive atmospheres.
- Continuing development and support through the PROFIBUS User and Trade Organisation (PNO)

Technical data for pages 64-67

Temperature range	
Operating temperature	from -40 to 60°C
Type of protection	IP 66
Material of housing	high-quality aluminium alloy (AL - Si 12)
Surface	stove-enamelled RAL 5015
PROFIBUS-PA - Connection	tension clamp connection 0.5 - 1.5 mm^2
Cable bushing	Cable gland M16
Clamping area	5.5 - 9.5 mm
Measuring instrument connector M12 x 1 4-pole	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
Adapter / stub cable	hand-tight
External earthing cable	1.8 - 2.0 Nm

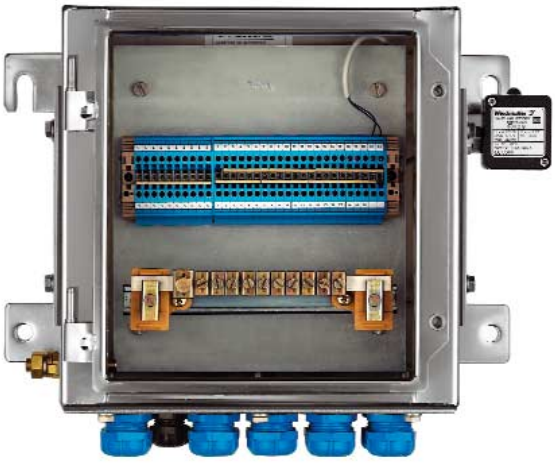
Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 1way EX	**8564150000**
Profibus PA T distributor type FBCon PA CG/M12 2way EX	**8564160000**
Profibus PA T distributor type FBCon PA CG/M12 4way EX	**8564170000**
Profibus PA T distributor type FBCon PA CG/M12 8way EX	**8564250000**
Profibus PA T distributor type FBCon PA CG 1way EX	**8564180000**
Profibus PA T distributor type FBCon PA CG 2way EX	**8564190000**
Profibus PA T distributor type FBCon PA CG 4way EX	**8564200000**
Profibus PA T distributor type FBCon PA CG 8way EX	**8564240000**
Bus terminating resistor see page 62	

With the EEx (ia) version an external bus terminator is necessary at the end of the bus system

Weidmüller offers here the PROFIBUS-PA FB-Connector. In the event of service or plant modification, the PROFIBUS-PA FB-Connector from Weidmüller permits the connection or replacement of field devices without interrupting the bus system. Extensive accessories as well as preassembled cables and plugs round off the program.

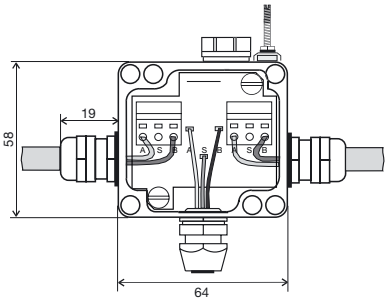
Customer-specific solutions on request



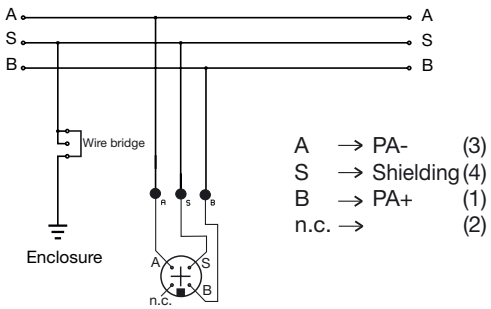
Field-bus components for the area EEx (ia) ATEX with tension clamp connection

The measuring instruments are connected using an M 12 connection.
The screen is connected to the housing via the EMC cable gland.

PROFIBUS-PA T-Connector EEx 1-way
Type FBCon PA CG/M12 1way



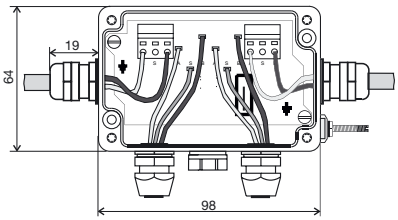
Circuit diagram



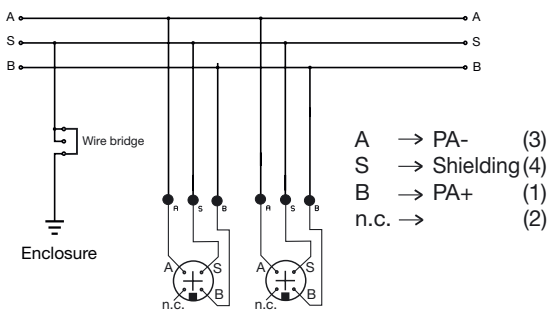
Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 1way EX	**8564150000**

PROFIBUS-PA T-Connector standard EEx 2-way
Type FBCon PA CG/M12 2way



Circuit diagram



Ordering data

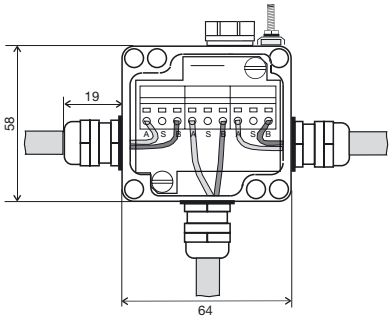
Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 2way EX	**8564160000**

Field-bus components for the area EEx (ia) ATEX with tension clamp connection

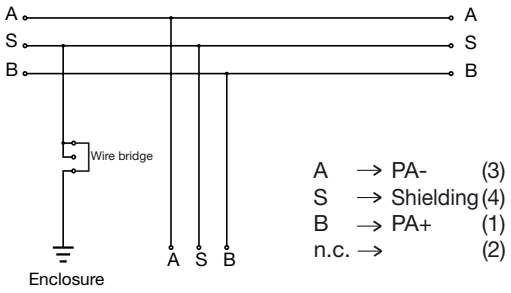
The measuring instruments are connected directly in the distributor via the EMC cable gland.
The screen is connected to the housing via the EMC cable gland.

PROFIBUS-PA T-Connector EEx EMC version 1-way

Type FBCon PA CG 1way



Circuit diagram

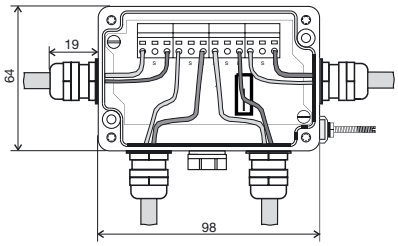


Ordering data

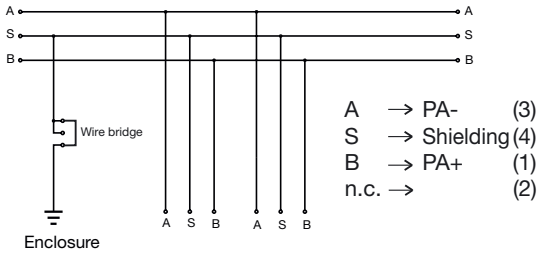
Type	Cat. No.
Profibus PA T distributor type FBCon PA CG 1way EX	**8564180000**

PROFIBUS-PA T-Connector EEx EMC version 2-way

Type FBCon PA CG 2way



Circuit diagram



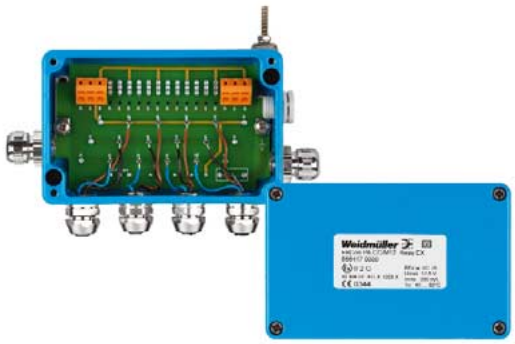
Ordering data

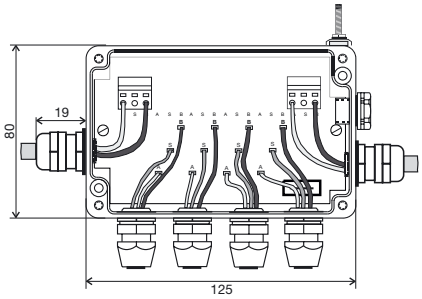
Type	Cat. No.
Profibus PA T distributor type FBCon PA CG 2way EX	**8564190000**

Field-bus components for the Ex area EEx (ia) ATEX with tension clamp connection

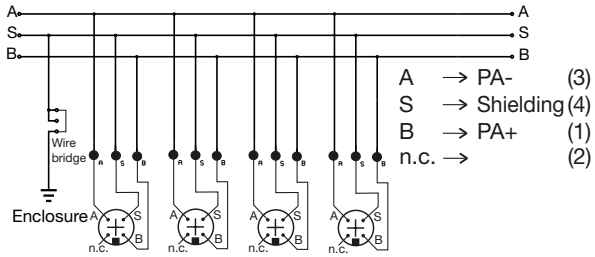
The measuring instruments are connected using an M 12 connection.
The screen is connected to the housing via the EMC cable gland.

PROFIBUS-PA T-Connector EEx 4-way
Type FBCon PA CG/M12 4way





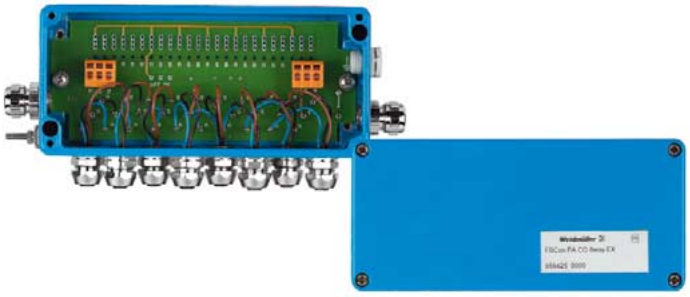
Circuit diagram

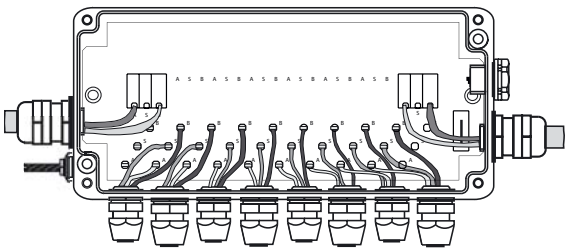


Ordering data

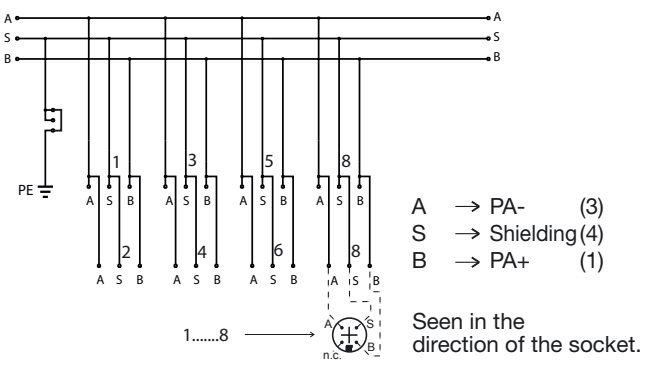
Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 4way EX	**8564170000**

PROFIBUS-PA T-Connector EEx 8-way
Type FBCon PA CG/M12 8way





Circuit diagram



Ordering data

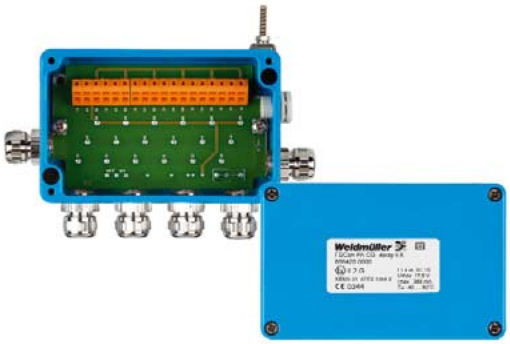
Type	Cat. No.
Profibus PA T distributor type FBCon PA CG/M12 8way EX	**8564250000**

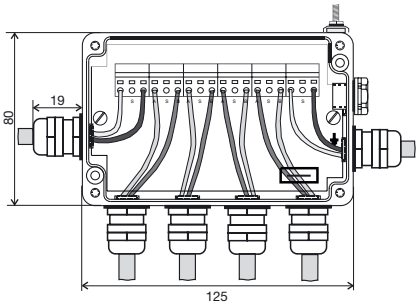
Field-bus components for the area EEx (ia) ATEX with tension clamp connection

The measuring instruments are connected directly in the distributor via the EMC cable gland.
The screen is connected to the housing via the EMC cable gland.

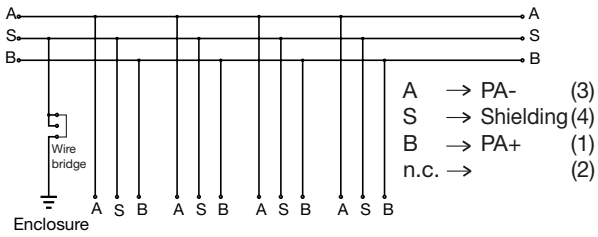
PROFIBUS-PA T-Connector EEx EMC version 4-way

Type FBCon PA CG 4way





Circuit diagram

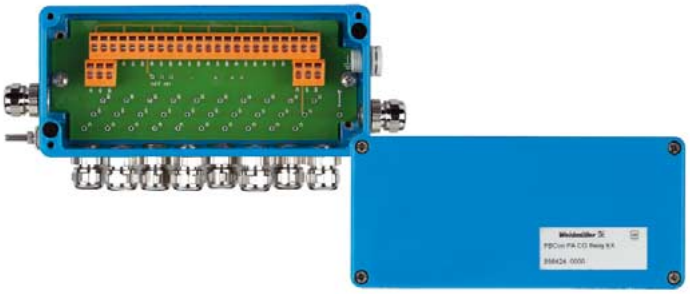


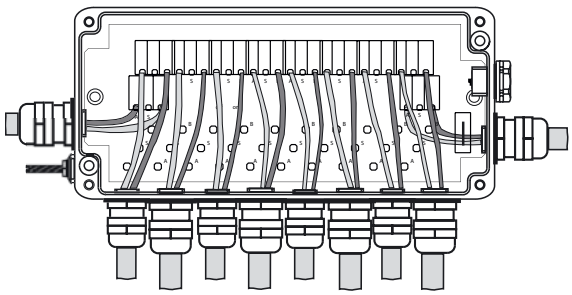
Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG 4way EX	**8564200000**

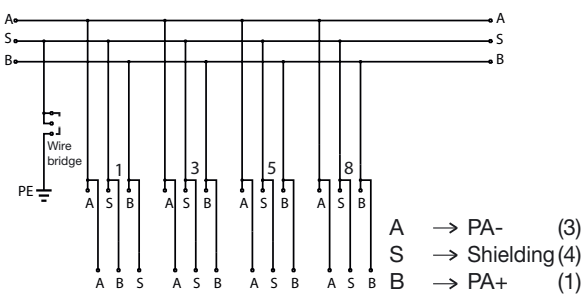
PROFIBUS-PA T-Connector EEx EMC version 8-way

Type FBCon PA CG 8way





Circuit diagram



Ordering data

Type	Cat. No.
Profibus PA T distributor type FBCon PA CG 8way EX	**8564240000**

PROFIBUS PA distributor with screw connection

Technical data for pages 68-69

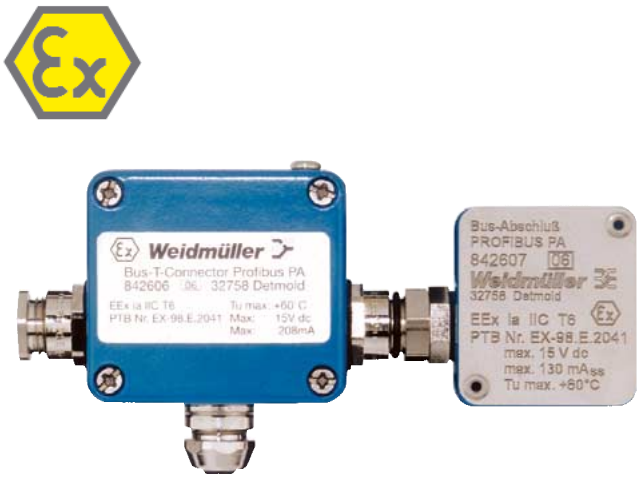
Temperature range/operating temperature	- 40 to 60 °C
Type of protection	IP 66
Material of housing	high-quality aluminium alloy (AL - Si 12)
Surface	stove-enamelled RAL 5015
PROFIBUS-PA - Connection	Screw terminals 0.5 - 1.5 mm² (AWG 26 - 16)
Cable bushing	Cable gland PG 9
Clamping area	6.0 - 11.0 mm
Measuring instrument connector M12 x 1 4-pole	contacts brass, surface CuZnAu
PTB certificate no.	Ex-98.E.2041 (EEx ia IICT6)
Electric circuits	Ui = 15 V; Ii = 208 mA; Pi = 1.95 W

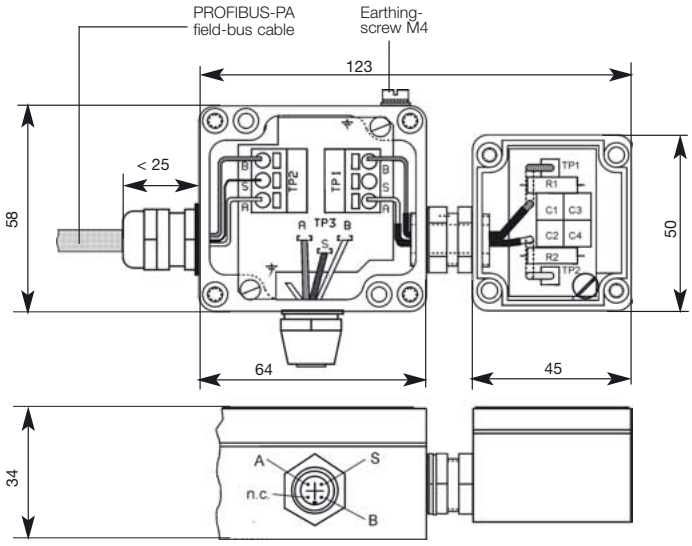
Installation advice

Torques	
Screw terminals	0.4 Nm
PG cable gland on housing	6.0 Nm
Coupling ring PG cable gland	4.0 Nm
Housing lid	1.8 - 2.0 Nm
Adapter/stub cable	hand-tight
External earthing cable	1.8 - 2.0 Nm The use of a cable shoe is recommended Connection according to diagram

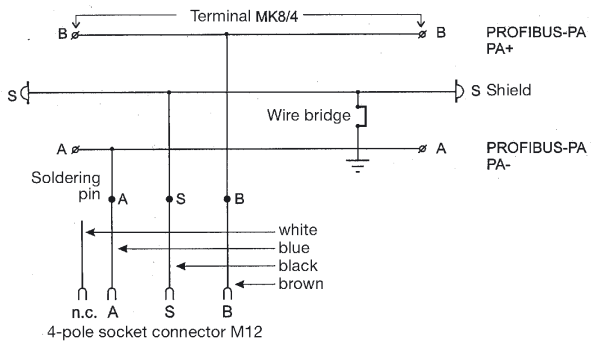
Comment:
The customer's earthing concept is to be followed.
The screen-housing connection is not used in the connecting box. If necessary, a connection must be added.
On the EEx(ai) version, an external bus terminator is required at the end of the bus system.
"Profibus-PA T-Connector- EEx (ia) with external bus connection"

EEx(ia) with bus terminator

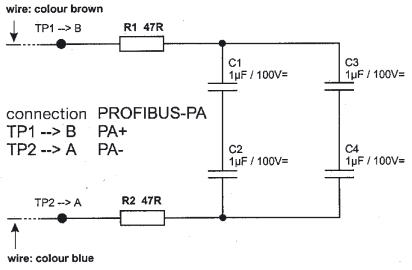




PROFIBUS PA T-Connector



PROFIBUS-PA T-Connector with bus terminator



Ordering data

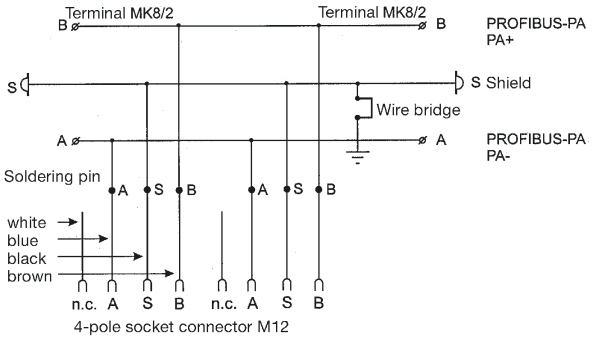
Type	Cat. No.
PROFIBUS-PA T-Connector EEx(ia)	**8426060000**

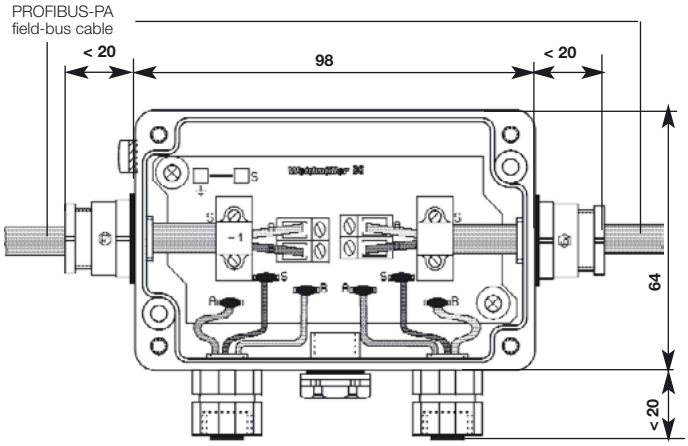
Ordering data

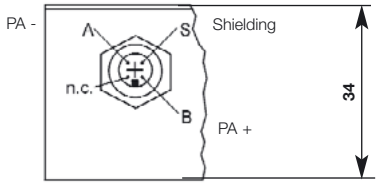
Type	Cat. No.
Terminator EEx (ia)	**8426070000**

PROFIBUS PA distributor with screw connection

2-way Connector EEx(ia)



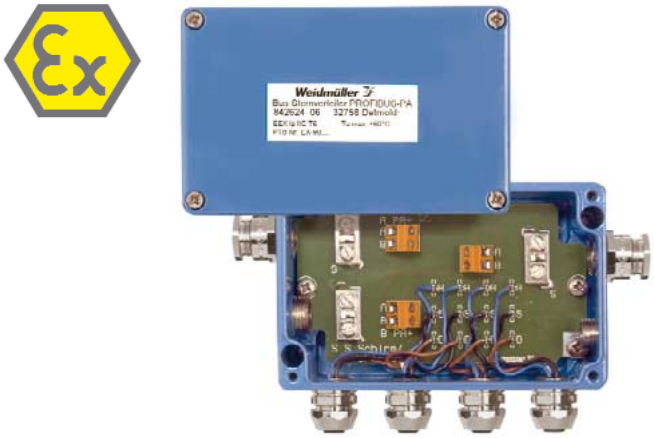


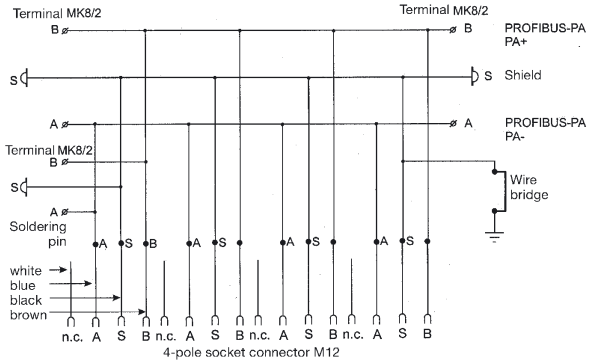


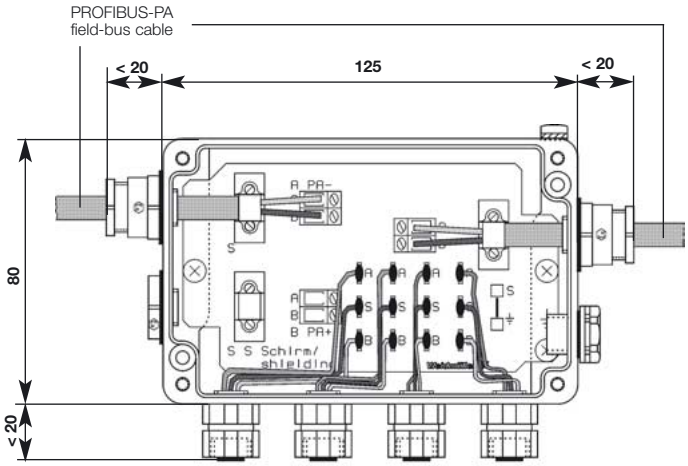
Ordering data

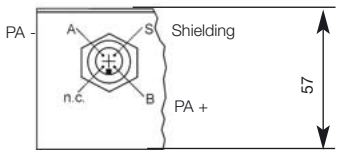
Type	Cat. No.
PROFIBUS-PA 2-WAY Connector EEx(ia)	**8491190000**

4-way Connector EEx(ia)









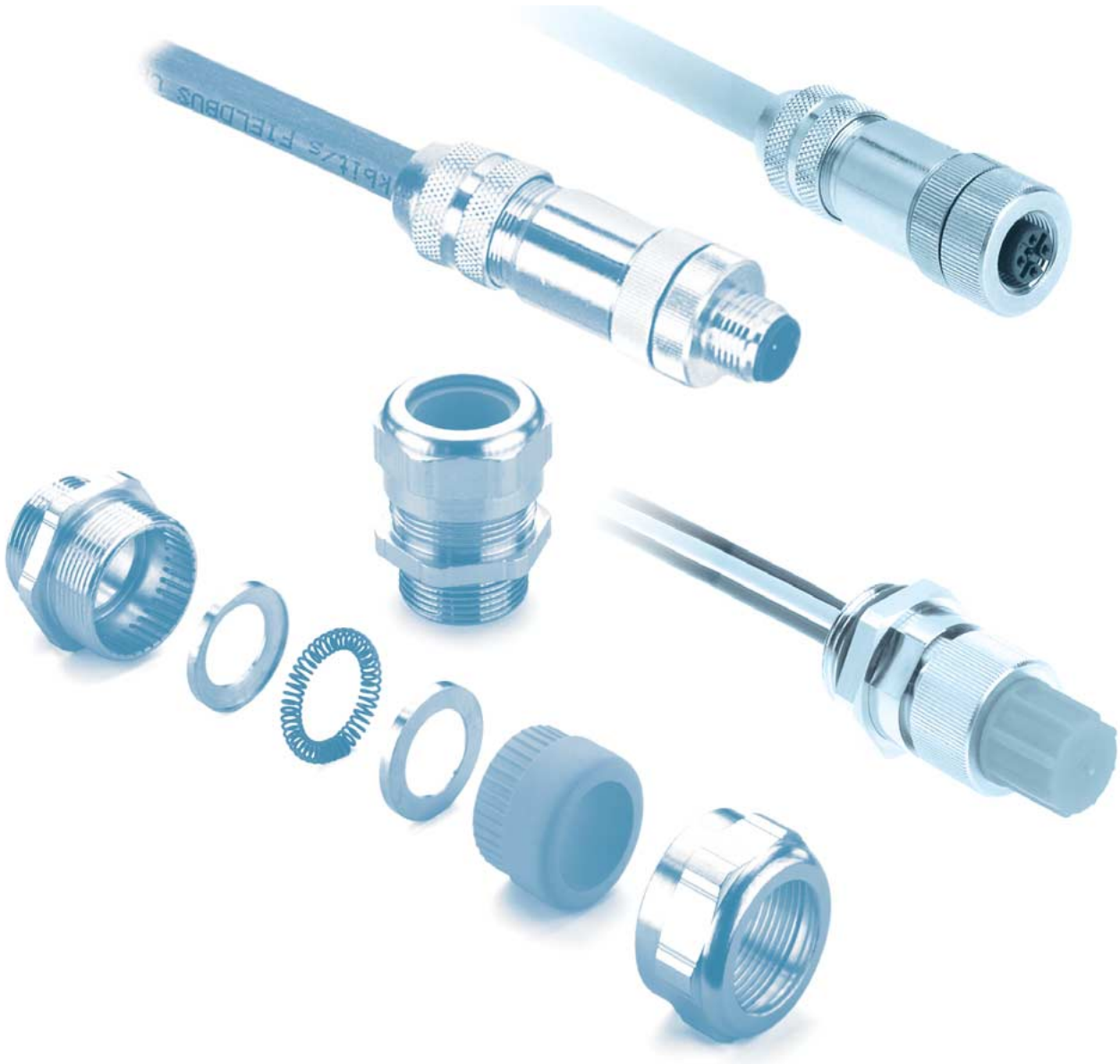
Ordering data

Type	Cat. No.
PROFIBUS-PA 4-WAY Connector EEx(ia)	**8426240000**

Notes

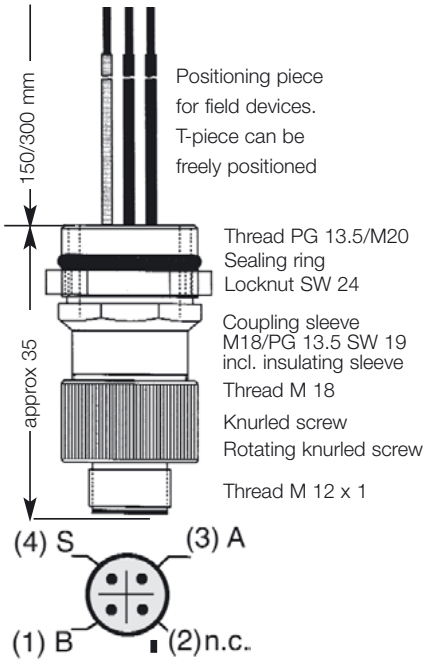
PROFIBUS PA / Accessories

The full range of PROFIBUS-PA
T-Connectors is complemented with accessories
to suit customer requirements.



PROFIBUS PA / Accessories

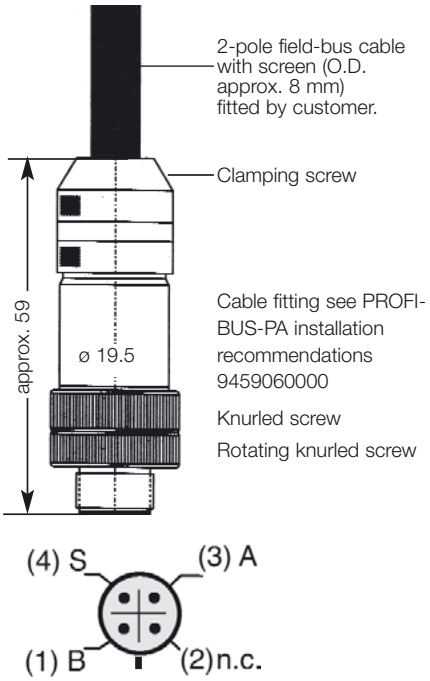
Locating plug-in connector (1)



Front view
of pin insert and pins

Male		PROFIBUS-PA
A	→	PA-
S	→	Screen
W	→	PA+
n.c.	→	not connected

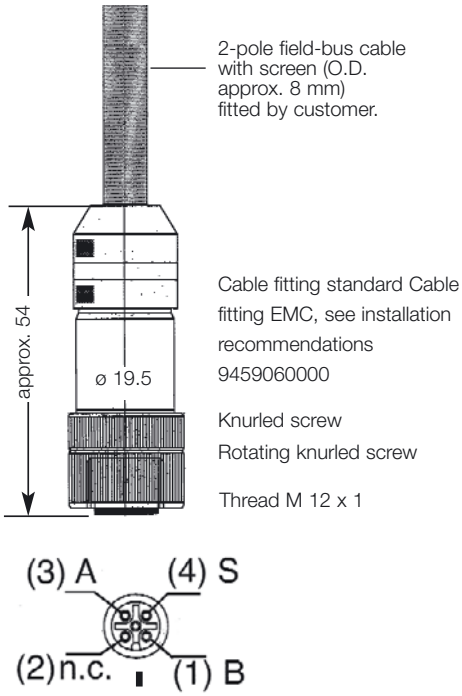
Cable plug (2)



Front view
of pin insert and pins

Male		PROFIBUS-PA
A	→	PA-
S	→	Screen
W	→	PA+
n.c.	→	not connected

Cable socket (3)



Front view
of pin insert and pins

Male		PROFIBUS-PA
A	→	PA-
S	→	Screen
W	→	PA+
n.c.	→	not connected

Ordering data

Type	Cat. No.
Locating plug-in connector PG 13.5 150 mm (1)	**9455650000**
Locating plug-in connector PG 13.5 300 mm (1)	**8425910000**
Locating plug-in connector M 20 150 mm (1)	**8425930000**
Locating plug-in connector M 20 300 mm (1)	**8425940000**
Cable plug for laid assembly (2)	**9455640000**
Cable socket for laid assembly (3)	**8426220000**

Technical data

	Locating plug-in connector for field device connection	Cable plug/socket
Poles	4 Poles	4 Poles
Type of connection	screwed	screwed
Cross-sectional area of connection	0.75 mm^2	0.75 mm^2
Connecting thread	PG 13.5 / M 20	M 12
Contact surface	CuZnAu	CuZnAu
Housing protection to DIN 40050 IEC 529	IP 67	IP 67 with cable ø 4 - 9 mm
Material of housing	Cu Zn surface nickel	Cu Zn surface nickel
Inflammability to UL - 94	V - 2	V - 2
Operating temperature	- 40 ° C .... 85 ° C	- 25 ° C .... 85 ° C
Rated current per contact	3 A	3 A
Nominal voltage to VDE standard 0110/ISO group C	125 V ~ 150 V =	125 V ~ 150 V =
Tracking resistance	KC 600	KC 600
Volume resistivity to IEC512 part 2	≥ 8 m ≥	≤ 8 m Ω
Insulation resistance to IEC 512 part 2	≥ 10^{12} Ω	≥ 10^{12} Ω

Installation advice

	Torques	Torques
Screw terminals		0.4 Nm
Coupling ring PG cable gland		4.0 Nm
Clamping screw	1.8 - 2.0 Nm	
Knurled screw hand-tight	hand-tight	
Lock nut 6.25 Nm		

Where the possibility of vibration at the field instrument exists, we recommend installation of a connecting cable to decouple the vibration source

Accessories

Preassembled Cables for Field-Bus Distributor Profibus PA

Designation	Type	Cat. No.	Length	Colour	
Intrinsically Safe Area Exi					
Profibus-PA cable one-sided preass. cable plug M12 EMC/blue/1M	FBCEX PA M12 M 1m	**1785150100**	1 m	blue	Exi
Profibus-PA cable one-sided preass. cable plug M12 EMC/blue/2M	FBCEX PA M12 M 2m	**1785150200**	2 m	blue	Exi
Profibus-PA cable one-sided preass. cable plug M12 EMC/blue/5M	FBCEX PA M12 M 5m	**1785150500**	5 m	blue	Exi
Profibus-PA cable one-sided preass. cable plug M12 EMC/blue/10M	FBCEX PA M12 M 10m	**1785151000**	10 m	blue	Exi
Profibus-PA cable one-sided preass. cable socket M12 EMC/blue/1M	FBCEX PA M12 FM 1m	**1785140100**	1 m	blue	Exi
Profibus-PA cable one-sided preass. cable socket M12 EMC/blue/2M	FBCEX PA M12 FM 2m	**1785140200**	2 m	blue	Exi
Profibus-PA cable one-sided preass. cable socket M12 EMC/blue/5M	FBCEX PA M12 FM 5m	**1785140500**	5 m	blue	Exi
Profibus-PA cable one-sided preass. cable socket M12 EMC/blue/10M	FBCEX PA M12 FM 10m	**1785141000**	10 m	blue	Exi
Profibus-PA cable preass. plug - cable socket M12 EMC/blue/1M	FBCEX PA M12 M-FM 1m	**1785130100**	1 m	blue	Exi
Profibus-PA cable preass. plug - cable socket M12 EMC/blue/2M	FBCEX PA M12 M-FM 2m	**1785130200**	2 m	blue	Exi
Profibus-PA cable preass. plug - cable socket M12 EMC/blue/5M	FBCEX PA M12 M-FM 5m	**1785130500**	5 m	blue	Exi
Profibus-PA cable preass. plug - cable socket M12 EMC/blue/10M	FBCEX PA M12 M-FM 10m	**1785131000**	10 m	blue	Exi
Industrial Area non Exi					
Profibus-PA cable one-sided preass. cable plug M12 EMC/black/1M	FBC PA M12 M 1m	**1785120100**	1 m	black	/
Profibus-PA cable one-sided preass. cable plug M12 EMC/black/2M	FBC PA M12 M 2m	**1785120200**	2 m	black	/
Profibus-PA cable one-sided preass. cable plug M12 EMC/black/5M	FBC PA M12 M 5m	**1785120500**	5 m	black	/
Profibus-PA cable one-sided preass. cable plug M12 EMC/black/10M	FBC PA M12 M 10m	**1785121000**	10 m	black	/
Profibus-PA cable one-sided preass. cable socket M12 EMC/black/1M	FBC PA M12 FM 1m	**1785110100**	1 m	black	/
Profibus-PA cable one-sided preass. cable socket M12 EMC/black/2M	FBC PA M12 FM 2m	**1785110200**	2 m	black	/
Profibus-PA cable one-sided preass. cable socket M12 EMC/black/5M	FBC PA M12 FM 5m	**1785110500**	5 m	black	/
Profibus-PA cable one-sided preass. cable socket M12 EMC/black/10M	FBC PA M12 FM 10m	**1785111000**	10 m	black	/
Profibus-PA cable preass. plug - cable socket M12 EMC/black/1M	FBC PA M12 M-FM 1m	**1785100100**	1 m	black	/
Profibus-PA cable preass. plug - cable socket M12 EMC/black/2M	FBC PA M12 M-FM 2m	**1785100200**	2 m	black	/
Profibus-PA cable preass. plug - cable socket M12 EMC/black/5M	FBC PA M12 M-FM 5m	**1785100500**	5 m	black	/
Profibus-PA cable preass. plug - cable socket M12 EMC/black/10M	FBC PA M12 M-FM 10m	**1785101000**	10 m	black	/

F > field / B > bus / C > cable / PA > process automation
EX > EX area / M12 > connector / M > male / FM > female

Other lengths on request

Cable gland PG 9

Cable gland Ex

Protection cap

Protection cap plug

Protection cap socket

Cable gland EMC

Stopping plug brass PG 9

Thread sealing ring

Stopping plug brass PG 9 Eex

Ordering data

Type	Cat. No.
Cable gland PG 9	**1569070000**
Cable gland EMC PG 9/11	**1706860000**
Cable gland PG 9 Exe	**1719000000**
Cable gland M 16	**1772210000**

Type	Cat. No.
Stopping plug brass PG 9	**0294700000**
Stopping plug brass PG 9 Exe	**1719350000**
Thread sealing ring	**1719550000**
Protection cap socket (black)	**9456050000**
Protection cap plug (yellow)	**1781520000**