

## Sensor-Actuator-Interface (SAI)



Modern installation systems are designed to save material, costs, time, space and weight. Products which fulfil these requirements are, therefore, absolutely essential. Weidmüller's SAI unit, available with four, six or eight connectors, and with four or five pins, or three or four pins for the IDC quick connector, meet the above requirements.

They are integrated into the relevant machine or plant by 'direct installation', have a 'flat' design, are sturdy and meet the IP 68 system (IP 67 HARAX®) of protection.

- SAI integrator in new metal housing
- Sensor-Actuator-Integrator passive M8 and M12
- SAI active integrator Profibus DP and CAN
- SAI active integrator ASi
- Accessories for SAI-integrator

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# Sensor-Actuator-Integrator Passive

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



### SAI-F:

- Minimises installation work and wiring mistakes by using pre-assembled bus lines
- Three sizes for 4, 6 and 8 positions
- Extremely flexible, drag chain suitable bus lines with polyurethane (PUR/PVC) insulation  
2 x 0.75 mm<sup>2</sup>/ n x 0.34 mm<sup>2</sup>
- 4-pole version each with 1 I/O signal per position, and 5-pole (4+PE) version each with 2 I/O signals per position

### Ordering information

#### 4-pole

Designation	Cat.-No.	Positions	Qty.
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 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 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

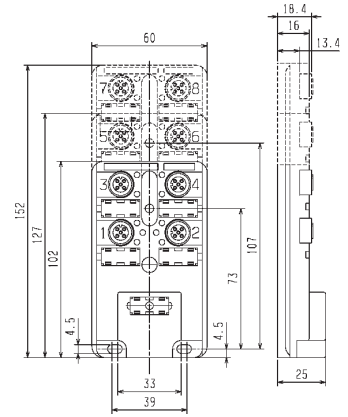
other lengths and cable structures on demand

1) with strengthened cable 16 x 0.5 mm<sup>2</sup> + 3 x 1 mm<sup>2</sup>

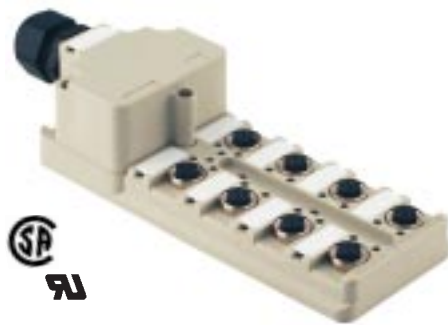
#### 5-pole

Designation	Cat.-No.	Positions	Qty.
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 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 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



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



Graphic: without protective lid

### SAI-M:

- Pluggable connection module for bus lines provides greater user flexibility in the field
- Three sizes for 4, 6 and 8 connector positions
- 4-pole (3+PE) versions with 1 I/O signal per position, and 5-pole (4+PE) version with 2 I/O signals per position
- Optional base (DB) and mounting hood (MH) individually available

### Ordering information

#### 4-pole

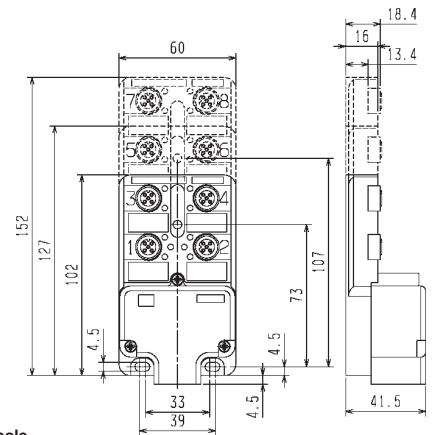
Designation	Cat. No.	Positions	Qty.
<b>Complete modules</b>			
SAI-4-M 4P M12	1705920000	4	1
SAI-6-M 4P M12	1705930000	6	1
SAI-8-M 4P M12	1705940000	8	1
<b>Integrator bases</b>			
SAI-4-M 4P M12 UT	1705921000	4	1
SAI-6-M 4P M12 UT	1705931000	6	1
SAI-8-M 4P M12 UT	1705941000	8	1
<b>Mounting hood</b>			
SAI-4/6/8-MH BL 3,5	1724750000	-	1
SAI-4/6/8-MH BLZF 3,5	1752080000	-	1

1) Without initiator LED. For analogue signals

2) Tension clamp connection

#### 5-pole

Designation	Cat. No.	Positions	Qty.
<b>Complete modules</b>			
SAI-4-M 5P M12	1701230000	4	1
SAI-6-M 5P M12	1701240000	6	1
SAI-8-M 5P M12	1701250000	8	1
SAI-8-M 5P M12 OL <sup>1)</sup>	1740190000	8	1
SAI-8-M 5P M12 SK3 ZF <sup>2)</sup>	1767880000	8	1
<b>Integrator bases</b>			
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
SAI-8-M 5P M12 OL <sup>1)</sup> UT	1740191000	8	1



### M12 circular connectors:

- 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

## Sensor-Actuator-Integrator Passive

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



#### SAI-F:

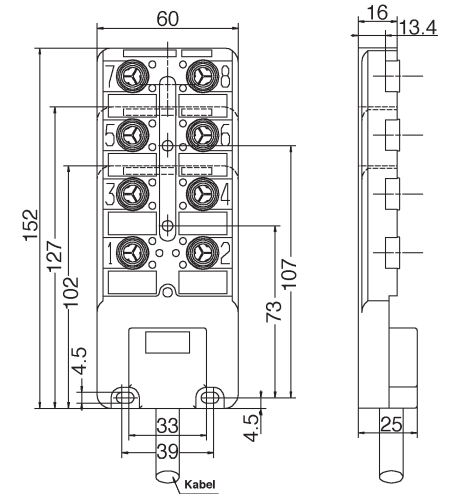
- Minimises installation work and wiring mistakes by using pre-assembled bus lines
- Three sizes for 4, 6 and 8 positions
- Extremely flexible, drag chain suitable bus lines with polyurethane (PUR/PVC) insulation  
2 x 0.75 mm<sup>2</sup>/ n x 0.34 mm<sup>2</sup>
- 3-pole version each with 1 I/O signal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

#### Ordering information

##### 3-pole

Designation	Cat. No.	Positions	Qty.
SAI-4-F 3P IDC PUR 5M	<b>1766720000</b>	4	4
SAI-4-F 3P IDC PUR 10M	<b>1766730000</b>	4	3
SAI-6-F 3P IDC PUR 5M	<b>1766740000</b>	6	4
SAI-6-F 3P IDC PUR 10M	<b>1766750000</b>	6	3
SAI-8-F 3P IDC PUR 5M	<b>1766760000</b>	8	4
SAI-8-F 3P IDC PUR 10M	<b>1766770000</b>	8	3

other lengths and cable structures on demand



##### 4-pole

Designation	Cat.-No.	Position	Qty.
SAI-4-F 4P IDC PUR 5M	<b>1766660000</b>	4	4
SAI-4-F 4P IDC PUR 10M	<b>1766670000</b>	4	3
SAI-6-F 4P IDC PUR 5M	<b>1766680000</b>	6	4
SAI-6-F 4P IDC PUR 10M	<b>1766690000</b>	6	3
SAI-8-F 4P IDC PUR 5M	<b>1766700000</b>	8	4
SAI-8-F 4P IDC PUR 10M	<b>1766710000</b>	8	3

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



Graphic: without protective lid

#### SAI-M:

- Pluggable connection module for bus lines to allow greater user flexibility in the field
- Three sizes for 4, 6 and 8 positions
- 3-pole versions each with 1 I/O signal per position, and 4-pole version each with 2 I/O signals per position

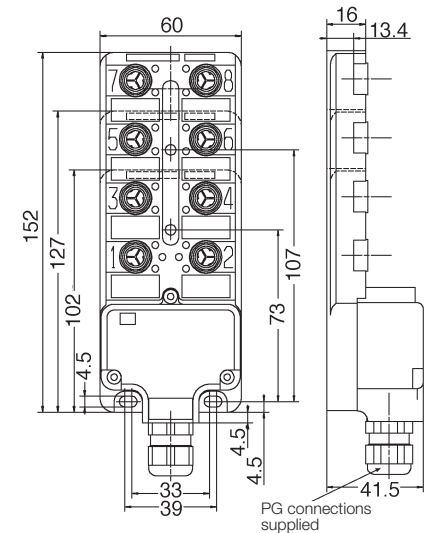
#### Ordering information

##### Complete module 3-pole

Designation	Cat. No.	Position	Qty. SAI-
4-M 3P IDC	<b>1760040000</b>	4	1
SAI-6-M 3P IDC	<b>1760050000</b>	6	1
SAI-8-M 3P IDC	<b>1760060000</b>	8	1

##### Bases

Designation	Cat. No.	Position	Qty. SAI-
4-M 3P IDC UT	<b>1760041000</b>	4	1
SAI-6-M 3P IDC UT	<b>1760051000</b>	6	1
SAI-8-M 3P IDC UT	<b>1760061000</b>	8	1



##### KComplete module 4-pole

Designation	Cat. No.	Position	Qty. SAI-
4-M 4P IDC	<b>1766780000</b>	4	1
SAI-6-M 4P IDC	<b>1766790000</b>	6	1
SAI-8-M 4P IDC	<b>1766800000</b>	8	1

##### Bases

Designation	Cat. No.	Position	Qty. SAI-
4-M 4P IDC UT	<b>1766781000</b>	4	1
SAI-6-M 4P IDC UT	<b>1766791000</b>	6	1
SAI-8-M 4P IDC UT	<b>1766801000</b>	8	1

#### HARAX® IDC 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

# Sensor-Actuator-Integrator in Metal

## Sensor-Actuator-Integrator for Special Applications

### Shielded Cable e.g. for Analogue Initiators

With certain applications it is necessary to have a continuous shield from the sensor to the control level. Using SAI-distributors in such applications, it is necessary to ensure continuation of the shield from the M12 initiator cable through to the shielded common-line cable. This condition is satisfied by use of the metal SAI-distributor.

Included with the Distributor are EMC cable glands. LEDs are not incorporated.

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



### SAI-4/6/8 MMS with EMC Screw connection in metal housing

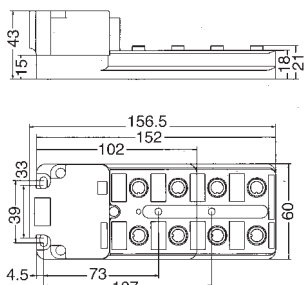
Designation	Cat.-No.
<b>4-pole</b>	
SAI-4-MMS 4P M12	1783540000
SAI-8-MMS 4P M12	1783530000
<b>5-pole</b>	
SAI-4-MMS 5P M12	1783520000
SAI-8-MMS 5P M12	1783510000

### Especially tough environments, where plastic is non-preferred:

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

### SAI-4/6/8 MM with Standard Screw connection in metal housing

Designation	Cat.-No.
<b>4-pole</b>	
SAI-4-MM 5P M12	1783500000
SAI-8-MM 5P M12	1783490000



### Especially thick common-line cabling

In certain cases it is useful to utilise a common-line cable, which is the standard by the machine builder. In the rule, 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 have the cable exiting through a existing top cable entry.

### SAI-4/6/8 MH



### M20 Connection

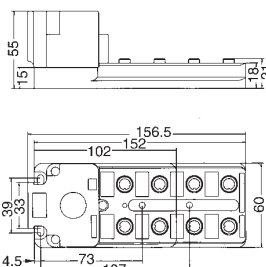
For cables with outside insulation diameter from 10 mm to 14 mm

### Ordering information

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

The SAI-distributor with M20 connection is suitable, amongst others, for the following types of cable:

- 14 x 0.5 mm<sup>2</sup> to 16 x 0.5 mm<sup>2</sup>
- 8 x 0.75 mm<sup>2</sup> to 15 x 0.75 mm<sup>2</sup>
- 8 x 1 mm<sup>2</sup> to 10 x 1 mm<sup>2</sup>
- 5 x 1.5 mm<sup>2</sup> to 7 x 1.5 mm<sup>2</sup>



### SAI-4/6/8 MHD



### M25 Connection

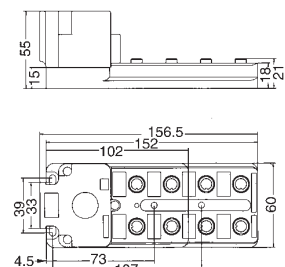
For cables with outside insulation diameter from 13 mm to 18 mm

### Ordering information

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

The SAI-distributor with M25 connection is suitable, amongst others, for the following types of cable:

- 21 x 0.5 mm<sup>2</sup>
- 18 x 0.75 mm<sup>2</sup> to 21 x 0.75 mm<sup>2</sup>
- 14 x 1 mm<sup>2</sup> to 20 x 1 mm<sup>2</sup>
- 8 x 1.5 mm<sup>2</sup> to 16 x 1.5 mm<sup>2</sup>



# Sensor-Actuator-Integrator Passive

## Code Clarification

### Example

#### SAI-MMS 4P M12

MMS stands for: **Modular, Metal, Shield**

#### SAI-MH 4P M12

MH stands for: **Modular, High**

#### SAI-MHD 4P M12

MHD stands for: **Modular, High, Dense** (high cable density)

#### SAI-MM 5P M12

MM stands for: **Modular, Metal**

## Overview

Cat.-No. WM	Type	SAI-UT	M12-sockets	Poles	Hood	Design	Connection
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

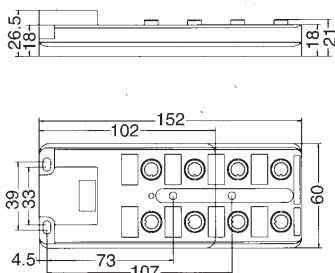
## Technical Data

Material data	M12	IDC
Insulating material	PBT	PBT
Enclosures	PBT	PBT
Contact carrier		
Basic material	CuZn, nickel and gold plated	CuZn, nickel and gold plated
Contact	CuZn, nickel plated	CuZn, nickel plated
Threaded connector		
Temperature range °C	-20...+90	-20...+90
Colour	grey, RAL 7032	grey, RAL 7032
Enclosures	black	black
PG and Contact carrier		
Cable insulation	PUR	PUR
O-ring	Viton	Viton
Enclosures seal	PUR, foamed	PUR, foamed
<b>Mechanical data</b>		
Insert and extract force/Contact	N	≥ 0,5
Insertion cycle	≥ 50	-
Protection class*	IP	68
		67
<b>HARAX® connection</b>		
Max. connection frequency of a line with same cross-section	-	10
Insulation stripping length	mm	15...20
Conductor cross-section (flexible)	mm <sup>2</sup>	0,25...0,5
Smallest litz wire diameter	mm	0,1
Conductor insulation material	-	PVC/PE/PUR
Conductor outer diameter	mm	1,2...1,6
Cable outer diameter	mm	3,5...5,0
Pin assignment	-	
<b>Electrical data according to VDE 110/4.97</b>		
Operating voltage V-	10...30	10...30
Max. current carrying capacity per I/O signal	A	2 (Derating)
- total with single supply	A	10
- total with dual supply	A	2 x 8 = 16
Rated voltage	V <sub>eff</sub>	32
Test voltage	kV <sub>eff</sub>	1,0
Degree of contamination		3
Insulation resistance Ω	> 10 <sup>9</sup>	> 10 <sup>9</sup>
Total current	Hood version F-version with 0.75 mm <sup>2</sup> Supply conductor	10 A 9 A
<b>Other data</b>		
Dimensions	see diagrams on pages	3
Pre-drilled mounting holes	see diagrams on pages	3
Function indicators		
for Operating voltage	2 xLED, green	2 xLED, green
for E/A-function	1 xLED, yellow (each function)	1 xLED, yellow (each function)
Potential isolation (SAI-...-M)	via 2 jumpers (see diagram)	via 2 jumpers (see diagram)
Cable strain relief (SAI-...-M)	PG 13,5/11	PG 13,5/11
max. cable diameter (SAI-...-M)	mm	11

### Note:

The cable outside diameter can vary from manufacturer to manufacturer. It is, therefore, possible, that the cable glands hold other cables firmly which have different cable strand combinations. In each case, it is most useful to first measure the cable diameter and then choose the distribution unit.

### SAI-Metal as F-Function on request

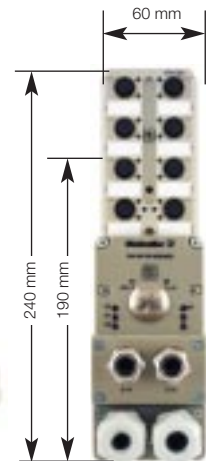
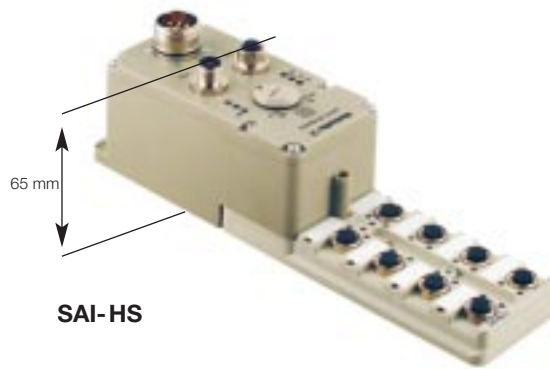
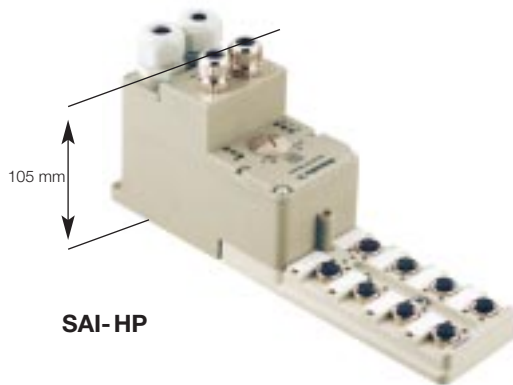


\*only when plugged and secured  
HARAX® is a registered trademark of Harting KGaA



# Sensor-Active-Integrator

## SAI-HP/HS PROFIBUS-DP or CAN plug-on module open choice or with circular connectors for "bus" and operating voltage



### Ordering information

Open choice	Profibus
Designation	Cat. No.
SAI-HP-DP-8DI	<b>8516980176</b>
SAI-HP-DP-8DO	<b>8516980178</b>
SAI-HP-DP-8DI/4DO	<b>8516980179</b>
SAI-HP-DP-16DI	<b>8516980177</b>
SAI-HP-DP-8DI/8DO	<b>8516980208</b>

With circular connectors	Profibus
Designation	Cat. No.
SAI-HS-DP-8DI	<b>8516980180</b>
SAI-HS-DP-8DO	<b>8516980182</b>
SAI-HS-DP-8DI/4DO	<b>8516980183</b>
SAI-HS-DP-16DI	<b>8516980181</b>
SAI-HS-DP-8DI/8DO	<b>8516980211</b>

Open choice	CAN open
Designation	Cat. No.
SAI-HP-CAN-8DI	<b>8516980184</b>
SAI-HP-CAN-8DO	<b>8516980186</b>
SAI-HP-CAN-8DI/4DO	<b>8516980187</b>
SAI-HP-CAN-16DI	<b>8516980185</b>
SAI-HP-CAN-8DI/8DO	<b>8516980341</b>

With circular connectors	CAN open
Designation	Cat. No.
SAI-HS-CAN-8DI	<b>8516980188</b>
SAI-HS-CAN-8DO	<b>8516980190</b>
SAI-HS-CAN-8DI/4DO	<b>8516980191</b>
SAI-HS-CAN-16DI	<b>8516980189</b>
SAI-HS-CAN-8DI/8DO	<b>8516980344</b>

Connectable passive SAI integrators (UT)		
Designation	Cat. No.	Poles
SAI-8-M 5P M12 UT	<b>1701251000</b>	5
SAI-8-M 4P M12 UT	<b>1705941000</b>	4
SAI-4-M 5P M12 UT	<b>1701231000*</b>	5
SAI-8-M 4P IDC UT	<b>1766801000</b>	4
SAI-8-M 3P IDC UT	<b>1760061000</b>	3
SAI-4-M 4P IDC UT	<b>1766781000*</b>	4

### Accessories

Designation	Cat. No.
SAISM 5/8 S M12 5P A-COD	<b>1784740000</b>
Metal plug, Plug (male) M12, 5-pole, Shield-A-coded	
SAIBM 5/8 S M12 5P A-COD	<b>1784750000</b>
Metal plug, Plug (female) M12, 5-pole, Shield-A-coded	
SAIEND CAN M 12 4P A-COD	<b>1784760000</b>
Terminating resistor for CAN in M12 plug	
SAIEND PB M12 5P B-COD	<b>1784770000</b>
Terminating resistor PB in M12 plug	
SAIBM 5/8 S M12 5P B-COD	<b>1784780000</b>
Metal plug, Plug (female) M12, 5-pole, Shield B-coded	
SAISM 5/8 S M12 5P B-COD	<b>1784790000</b>
Metal plug, Plug (male) M12, 5-pole, Shield B-coded	
SAIBWM6/14 M23 6P	<b>1789950000</b>
Power-Supply-Connector for SAI-HS, female, M23, 6 pins, angled	
SAI-BGM6/14 M23 6P	<b>1799260000</b>
Power-Supply-Connector for SAI-HS, female, M23, 6 pins, straight	

### Technical notes

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

### Choice of connections:

The choice of connection technology is optional. 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, positive, negative and PE cables. A further signal cable is available in the 5-pole version. The PE cable has been left out of the IDC connections. This means that the 3-pole IDC connection is comparable with the 5-pole M12 connection.

### Choice of bus and power connections

As diverse as the mechanical engineers are, so varied are the demands on the connection technology for the bus and external power supply. Weidmüller SAI active integrators offer the choice between cable glands or metric screw-connections with M23 and M12 (coded B, PB) (coded A, CAN) circular 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 a "Plug and Play" is required, in connection with pre-assembled cable, use of the distribution unit with metric connectors to the bus and power supply is recommended.

### Technical Data

General Technical Data Electronics Module		
Insulating material	Enclosures	PBT
Flammability class	UL 94 V0	
Operating temperature	0 ... 55 °C	
Storage temperature	-25 .. +70 °C	
Protection class	IP 67 (IP68)	

Electrical Data Electronics Module	
Operating voltage	24 Vdc (20,4 ... 28 V)
(Display via) UL	LED green
Max. current carrying capacity	
per output signal	2 A (derating)
Output stages	short-circuit proof
Max. residual current	2 x 8 A
Digital inputs	type 1 i.a.w. EN61131-2
Input current when "0"	< 1.5 mA
Input current when "1"	> 2 mA
Operating point	approx.. 9 V
I/O functions indicator	red/green (Uq)
Sensor voltage indicator	red/green (Ui)

Mechanical Data Screw Clamp Version	
Diameter supply conductor	12 ... 6 mm
Conductor cross-section (maximum)	2.5 mm <sup>2</sup> AWG 12
Diameter Bus conductor	9 ... 5.5 mm
Dimensions see diagram	

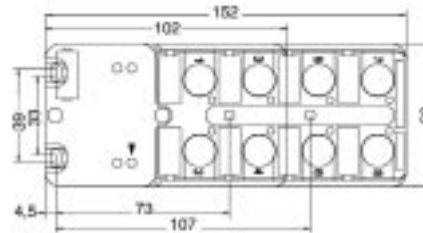
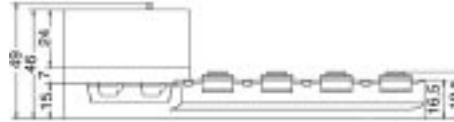
Technical Data of the Bus System (Profibus)	
PROFIBUS-DP	according to EN50170 Part 2 (DP)
Bus station	Slave
Transmission rate	max. 12 Mbaud
Diagnostic indicator	red (Bf)
Fieldbus interface	RS 485
Potential isolation	given
2 BCD rotary switches	station address 1-99
Baudrate	setting via bus

### Applications table

Hood type	8 DI	8 DO	8 DI/4 DO	16 DI	8 DI/8 DO
Cat. No.	<b>8516980176</b>	<b>8516980178</b>	<b>8516980179</b>	<b>8516980177</b>	<b>8516980208</b>
Cat. No.	<b>8516980180</b>	<b>8516980182</b>	<b>8516980183</b>	<b>8516980181</b>	<b>8516980211</b>
Cat. No.	<b>8516980184</b>	<b>8516980186</b>	<b>8516980187</b>	<b>8516980185</b>	<b>8516980341</b>
Cat. No.	<b>8516980188</b>	<b>8516980190</b>	<b>8516980191</b>	<b>8516980189</b>	<b>8516980344</b>
Integrator bases (UT)					
Standard M12 (8-channel)	<b>1705941000</b>	<b>1705941000</b>	<b>1701251000</b>	<b>1701251000</b>	<b>1701251000</b>
Shortened design					
4-channel/5-pole M12	<b>1701231000</b>	<b>1701231000</b>			
Standard HARAX®	<b>1760061000</b>	<b>1760061000</b>	<b>1766801000</b>	<b>1766801000</b>	<b>1766801000</b>
Shortened design					
4-channel/4-pole	<b>1766781000</b>	<b>1766781000</b>			

# Sensor-Actuator-Integrator ASi

## SAI-ASi



### Ordering information

	Designation	Cat. No.	Qty.
Integrator IP68 for lines with 31 slaves			
4E/4A Electronics hood	SAI-ASI-S H 4E/4A	<b>7902100000</b>	1
4E Electronics hood	SAI-ASI-S H 4E	<b>7902090000</b>	1
4E/4A M12 Base	SAI-4E/4A U M12	<b>1762290000</b>	1
4E M12 U	SAI-4E U M12	<b>1762470000</b>	1
Further modules in preparation			

### Connection cables (accessories)

	Designation	Cat. No.	Qty.
M12 straight to			
M12 straight 5-pole	Length:		
	0,3 m	SAIL-M12G-M12G-5-0,3U	<b>9457340030</b> 1
	0,6 m	SAIL-M12G-M12G-5-0,6U	<b>9457340060</b> 1
	0,9 m	SAIL-M12G-M12G-5-0,9U	<b>9457340090</b> 1
	1,2 m	SAIL-M12G-M12G-5-1,2U	<b>9457340120</b> 1
	1,5 m	SAIL-M12G-M12G-5-1,5U	<b>9457340150</b> 1
	2,0 m	SAIL-M12G-M12G-5-2,0U	<b>9457340200</b> 1
	2,5 m	SAIL-M12G-M12G-5-2,5U	<b>9457340250</b> 1
	5,0 m	SAIL-M12G-M12G-5-5,0U	<b>9457340500</b> 1
	10,0 m	SAIL-M12G-M12G-5-10,0U	<b>9457341000</b> 1

### System accessories

	Designation	Cat. No.	Qty.
Power supply unit max. 85 W	AS-PU 28	9455090000	1
Power supply unit max. 240 W	AS-PU 28/6	9455100000	1
Flat cable yellow	AS-KG-ge	9455110000	100 m
Flat cable black	AS-KG-sw	9455120000	100 m
Gateway PB-DP, 12 Mbits	Gateway AS-i PBDP	9455490000	1

### Technical Data:

Flammability class	UL 94 V0
Temperature range	-20...+90 °C
O-ring	Viton
Enclosures-seal	PUR, foamed

### Electrical data in accordance with VDE 110/1.89

Protection class	IP 68
Max. current load per output signal	2 A (Derating)
Max. current load per modul	4 A (Derating)
Operating voltage	10-30 Vdc

### Other data

Functions data:	
for Operating voltage	1 x LED green
for E/A function	1 x LED yellow

### Distance between pre-drilled mounting holes

Type	length/width	across
4-channel module	73	33-39
8-channel module	107	33-39

### Technical Data of Gateways 945549

Connections:	Profibus-DP/FM
Transmission rate:	AS-i Bus
to Profibus:	adjustable up to 12Mbits/s
to 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



## Accessories

### M12-circular connectors

#### Standard connection cables



#### Miniature circular connector



SAISW



SAIS



SAIS-ZW



SAIS-EMC-version

#### Protective cap / Markers



### Ordering information\*

#### M12 to M12 straight, for

##### normally-open or normally-closed 4-pole

Type	Cat. No.	Length
SAIL-M12G-M12G-2/4-0,3U	9457140000	0,3 m
SAIL-M12G-M12G-2/4-0,6U	9456960000	0,6 m
SAIL-M12G-M12G-2/4-0,9U	9456970000	0,9 m
SAIL-M12G-M12G-2/4-1,2U	9456980000	1,2 m
SAIL-M12G-M12G-2/4-1,5U	9456990000	1,5 m
SAIL-M12G-M12G-2/4-2,0U	9457000000	2,0 m
SAIL-M12G-M12G-2/4-2,5U	9457060000	2,5 m
SAIL-M12G-M12G-2/4-5,0U	9457070000	5,0 m
SAIL-M12G-M12G-2/4-10,0U	9457080000	10,0 m

#### M12 to M12 straight, for

##### normally-open or normally-closed 5-pole

Type	Cat. No.	Length
SAIL-M12G-M12G-5-0,3U	9457340030	0,3 m
SAIL-M12G-M12G-5-0,6U	9457340060	0,6 m
SAIL-M12G-M12G-5-0,9U	9457340090	0,9 m
SAIL-M12G-M12G-5-1,2U	9457340120	1,2 m
SAIL-M12G-M12G-5-1,5U	9457340150	1,5 m
SAIL-M12G-M12G-5-2,0U	9457340200	2,0 m
SAIL-M12G-M12G-5-2,5U	9457340250	2,5 m
SAIL-M12G-M12G-5-5,0U	9457340500	5,0 m
SAIL-M12G-M12G-5-10,0U	9457341000	10,0 m

### Adapter M12- to IDC

#### pin 4-pole

Type	Cat. No.
SAI S-4-IDC M12	1781550000

#### plug 4-pole

Type	Cat. No.
SAI B-4-IDC M12	1781540000

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



#### Miniature circular connector

##### M12 / 5 pole standard

Type	Cat. No.	Qty.
SAIS-5/7	9456940000	1
SAISW-5/7	9456950000	1

##### Miniature twin plugs

Type	Cat. No.	Qty.
SAIS-ZW-S	9457540000	1

#### Straight plug (female)

Type	Cat. No.	Qty.
SAIB-4/7, 4-pole	9457420000	1
SAIB-5/7, 5-pole	9457250000	1

#### Angled plug (female)

Type	Cat. No.	Qty.
SAIBW-4/7	9457700000	1
SAIBW-5/7	9457260000	1

#### Free to assemble M 12 circular plug

##### EMC M12 plug pin 5-pole

Type	Cat. No.	Qty.
SAIS-M 5/8 S M12 5P A-COD	1784740000	1

#### Protective cap M12

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

#### Label

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

### Accessories for SAI-M

#### Coding BL 3.5

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

#### Bus line integrator

Type	Cat. No.	Qty.
SAIH-SLL- 3 x 0,75 mm <sup>2</sup> -16 x 0,34 mm <sup>2</sup>	9457560000	500 m

### Ordering information

#### HARAX® IDC quick-fit connection element

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

#### Schutzkappe M12

Typ	Best.-Nr.	VPE
SAI-SK-U12 IDC	1794850000	10

## Sensor Cabling

Weidmüller offers a range of cabling, listed as follows.

Typical cabling 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

In the article description, the 'x,x' is replaced by the cable length.

Example:

1.2 m of typical cabling would be SAIL-M12G-M12G-5-1,2U

The article number also carries the length of the desired version, in case it is not elsewhere noted.

Example:

1.2 m of typical cabling would be SAIL-M12G-M12G-5-1,2U = 945734**0120**  
The connecting cable with two connectors always comes with one male plug and one female plug.

### Technical Data for Sensor Cabling

Cross section	Cabling with M8 Connectors	0.25 mm <sup>2</sup>
	Cabling with M12 Connectors	0.34 mm <sup>2</sup>
Outside colour	black	
Strand colours	Pin 1	brown
	Pin 2	white
	Pin 3	blue
	Pin 4	black
	Pin 5	grey
Material	Outside insulation	PUR
	Internal strands	PVC
Strand configuration	0.05 mm Strands	
Characteristics	Drag-chain compatible, oil-resistant	
Degree of Protection	M12	IP 68
	M 8 Snap-On	IP 65
	M 8 screw	IP 67
Contact surface	Gold	
Contact material	Spring	Cu Sn
	Pin	CU Zn
Temperature resistance	- 25 °C ... 85 °C	
Current Rating to IEC 512 part 3	3- and 4-pole	4 A
	5-pole	3 A
Nominal voltage to VDE Standard 0110 ISO group C	3- and 4-pole	250 V AC/300 V DC
	5-pole	30 V AC/ 36 V DC
Special:	The M12 cabling includes a self-locking mechanism	

### Technical Data Actuator-Cabling

Rated voltage to VDE Standard 0110 ISO group C	24 V DC
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All actuator-cabling with LED

### Sensor Cabling with a Connector and open Cable-end



Type	Cat. No.	Length
<b>M12 Plug (male)</b>		
M12 straight plug (male) 3-pole	SAIL-M12G-3-x,xPUR	<b>945781xxxx</b>
M12 straight plug (male) 4-pole	SAIL-M12G-4-x,xPUR	<b>on request</b>
M12 straight plug (male) 5-pole	SAIL-M12G-5-x,xPUR	<b>945761xxxx</b>
M12 angled plug (male) 3-pole	SAIL-M12W-3-x,xPUR	<b>on request</b>
M12 angled plug (male) 4-pole	SAIL-M12W-4-x,xPUR	<b>on request</b>
M12 angled plug (male) 5-pole	SAIL-M12W-5-x,xPUR	<b>945767xxxx</b>
<b>M12 Plug (female)</b>		
M12 straight plug (female) 3-pole	SAIL-M12BG-3-x,xPUR	<b>945782xxxx</b>
M12 straight plug (female) 4-pole	SAIL-M12BG-4-x,xPUR	<b>945773xxxx</b>
M12 straight plug (female) 5-pole	SAIL-M12BG-5-x,xPUR	<b>945791xxxx</b>
M12 angled plug (female) 3-pole	SAIL-M12BW-3-x,xPUR	<b>945732xxxx</b>
M12 angled plug (female) 4-pole	SAIL-M12BW-4-x,xPUR	<b>945774xxxx</b>
M12 angled plug (female) 5-pole	SAIL-M12BW-5-x,xPUR	<b>945769xxxx</b>

Type	Cat. No.	Length
<b>M8 Plug (male)</b>		
M8 plug (male) straight screw-lock 3-pole	SAIL-M8GS-3-x,xU	<b>on request</b>
M8 plug (male) straight screw-lock 4-pole	SAIL-M8GS-4-x,xU	<b>on request</b>
M8 plug (male) straight snap-on lock 3-pole	SAIL-M8GR-3-x,xU	<b>on request</b>
M8 Plug (male) (male) straight snap-on lock 4-pole	SAIL-M8GS-4-x,xU	<b>on request</b>
M8 Plug (male) angled screw-lock 3-pole	SAIL-M8WS-3-x,xU	<b>on request</b>
M8 Plug (male) angled screw-lock 4-pole	SAIL-M8WS-4-x,xU	<b>on request</b>
M8 Plug (male) angled snap-on lock 3-pole	SAIL-M8WR-3-x,xU	<b>on request</b>
M8 Plug (male) angled snap-on lock 4-pole	SAIL-M8WR-4-x,xU	<b>on request</b>
<b>M8 Plug (female)</b>		
M8 Plug (female) straight screw-lock 3-pole	SAIL-M8GBS-3-x,xU	<b>945745xxxx</b>
M8 Plug (female) straight screw-lock 4-pole	SAIL-M8GBS-4-x,xU	<b>945785xxxx</b>
M8 Plug (female) straight snap-on lock 3-pole	SAIL-M8GBR-3-x,xU	<b>on request</b>
M8 Plug (female) straight snap-on lock 4-pole	SAIL-M8GBR-4-x,xU	<b>on request</b>
M8 Plug (female) angled screw-lock 3-pole	SAIL-M8WBS-3-x,xU	<b>945738xxxx</b>
M8 Plug (female) angled screw-lock 4-pole	SAIL-M8WBS-4-x,xU	<b>945615xxxx</b>
M8 Plug (female) angled snap-on lock 3-pole	SAIL-M8WBR-3-x,xU	<b>on request</b>
M8 Plug (female) angled snap-on lock 4-pole	SAIL-M8WBR-4-x,xU	<b>on request</b>

## Sensor Cabling

### Sensor Cabling with two Connectors



Sensor Cabling	Type	Cat. No.
<b>M12 straight to M12 straight</b>		
M12 plug (male) straight to M12 plug (female) straight 3-pole	SAIL-M12G-M12G-3-x,U	<b>9457230000</b>
M12 plug (male) straight to M12 plug (female) straight 3-pole with bridge in female plug between pins 2 and 4	SAIL-M12G-M12G-2/4-0,3U	<b>9457140000</b>
	SAIL-M12G-M12G-2/4-0,6U	<b>9456960000</b>
	SAIL-M12G-M12G-2/4-0,9U	<b>9456970000</b>
	SAIL-M12G-M12G-2/4-1,2U	<b>9456980000</b>
	SAIL-M12G-M12G-2/4-1,5U	<b>9456990000</b>
	SAIL-M12G-M12G-2/4-2,0U	<b>9457000000</b>
	SAIL-M12G-M12G-2/4-2,5U	<b>9457060000</b>
	SAIL-M12G-M12G-2/4-5,0U	<b>9457070000</b>
	SAIL-M12G-M12G-2/4-10,0U	<b>9457080000</b>
M12 plug (male) straight to M12 plug (female) straight 4-pole	SAIL-M12G-M12G-4-0,3U	<b>9457150000</b>
	SAIL-M12G-M12G-4-0,6U	<b>9457160000</b>
	SAIL-M12G-M12G-4-0,9U	<b>9457170000</b>
	SAIL-M12G-M12G-4-1,2U	<b>9457180000</b>
	SAIL-M12G-M12G-4-1,5U	<b>9457190000</b>
	SAIL-M12G-M12G-4-2,0U	<b>9457200000</b>
	SAIL-M12G-M12G-4-2,5U	<b>9457090000</b>
	SAIL-M12G-M12G-4-5,0U	<b>9457100000</b>
	SAIL-M12G-M12G-4-10,0U	<b>9457110000</b>
M12 plug (male) straight to M12 plug (female) straight 5-pole	SAIL-M12G-M12G-5-0,3U	<b>9457340030</b>
	SAIL-M12G-M12G-5-0,6U	<b>9457340060</b>
	SAIL-M12G-M12G-5-0,9U	<b>9457340090</b>
	SAIL-M12G-M12G-5-1,2U	<b>9457340120</b>
	SAIL-M12G-M12G-5-1,5U	<b>9457340150</b>
	SAIL-M12G-M12G-5-2,0U	<b>9457340200</b>
	SAIL-M12G-M12G-5-2,5U	<b>9457340250</b>
	SAIL-M12G-M12G-5-5,0U	<b>9457340500</b>
	SAIL-M12G-M12G-5-10,0U	<b>9457341000</b>

Sensor Cabling	Type	Cat. No.
<b>M12 straight to M12 angled</b>		
M12 plug (male) straight to M12 plug (female) angled 3-pole	SAIL-M12G-M12W-3-x,U	<b>945739xxxx</b>
M12 plug (male) straight to M12 plug (female) angled 4-pole	SAIL-M12G-M12W-4-x,U	<b>945731xxxx</b>
M12 plug (male) straight to M12 plug (female) angled 5-pole	SAIL-M12G-M12W-5-x,U	<b>945727xxxx</b>
M12 plug (male) straight to M12 plug (female) angled 3-pole with bridge between pins 2 and 4	SAIL-M12G-M12W-4/2-x,U	<b>945789xxxx</b>
<b>M12 angled to M12 angled</b>		
M12 plug (male) angled to M12 plug (female) angled 3-pole	SAIL-M12W-M12W-3-x,U	<b>on request</b>
M12 plug (male) angled to M12 plug (female) angled 4-pole	SAIL-M12W-M12W-4-x,U	<b>on request</b>
M12 plug (male) angled to M12 plug (female) angled 5-pole	SAIL-M12W-M12W-5-x,U	<b>945790xxxx</b>
M12 plug (male) angled to M12 plug (female) angled 3-pole with bridge between pins 2 and 4	SAIL-M12W-M12W-4/2-x,U	<b>945765xxxx</b>
<b>M12 straight to M8 straight</b>		
M12 plug (male) straight to M8 plug (female) straight snap on lock 3-pole	SAIL-M12G-M8GBR-3-x,U	<b>on request</b>
M12 plug (male) straight to M8 plug (female) straight snap on lock 4-pole	SAIL-M12G-M8GBR-4-x,U	<b>on request</b>
M12 plug (male) straight to M8 plug (female) straight screw lock 3-pole	SAIL-M12G-M8GBS-3-x,U	<b>945777xxxx</b>
M12 plug (male) straight to M8 plug (female) straight screw lock 4-pole	SAIL-M12G-M8GBS-4-x,U	<b>on request</b>
<b>M12 straight to M8 angled</b>		
M12 plug (male) straight to M8 plug (female) angled snap on lock 3-pole	SAIL-M12G-M8WBR-3-x,U	<b>945757xxxx</b>
M12 plug (male) straight to M8 plug (female) angled snap on lock 4-pole	SAIL-M12G-M8WBR-4-x,U	<b>on request</b>
M12 plug (male) straight to M8 plug (female) angled screw lock 3-pole	SAIL-M12G-M8WBS-3-x,U	<b>945798xxxx</b>
M12 plug (male) straight to M8 plug (female) angled screw lock 3-pole with 2 LEDs	SAIL-M12G-M8W(GN/GE)-3-x,U	<b>945776xxxx</b>
M12 plug (male) straight to M8 plug (female) angled screw lock 4-pole	SAIL-M12G-M8WBS-4-x,U	<b>on request</b>

### Sensor Cabling with three connectors Twin Cabling

Sensor Cabling	Type	Cat. No.
M12 plug (male) to 2X M8-plug (female) straight 3-pole	SAIL-ZW-M8GB-3-x,U:	<b>9457490000</b>
M12 plug (male) to 2X M8-plug (female) angled 3-pole	SAIL-ZW-M8GW-3-x,U:	<b>on request</b>
M12 plug (male) to 2X M8-plug (female) angled with LED 3-pole	SAIL-ZW-M8GW-(LD)-3-x,U:	<b>9457410000</b>



#### Collecting Cables Integrator

Type	Cat.-No..	Qty.
SAIH-SLL -3 x 0,75 mm <sup>2</sup> -16 x 0,34 mm <sup>2</sup>	<b>9457560000</b>	500 m

# Actuator Cabling and Valve Connector

## Valve Connector Cabling for Self-Assembly Connectors



Valve connector cabling	Type	Cat.-No.
<b>Valve connector cabling with open cable end</b>		
Version A with safety switching and LED to M12 straight	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 to industry standard with safety switching and LED to M12 straight	SAI-VSB-M12G-x,xU	945768xxxx
Version B to DIN with safety switching and LED to M12 straight	SAI-VSBD-M12G-x,xU	945778xxxx
Version C to industry standard with safety switching and LED to M12 straight	SAI-VSC-M12G-x,xU	945740xxxx
Version C to DIN with safety switching and LED to M12 straight	SAI-VSCD-M12G-x,xU	945617xxxx

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

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

EMC-Version		
Plug (male) straight 4-pole	Cable connector (male) PG9 EMC	9455640000
Plug (female) straight 4-pole	Cable connector (male) PG9 EMC	8426220000

## Valve Connector



entilstecker Bauform A  
Contact distance 18 mm

Ventilstecker Bauform B  
Contact distance 11 mm  
Industry standard

Ventilstecker Bauform B  
Contact distance 10 mm  
To DIN 43650 (ISO 6952)

Ventilstecker Bauform C  
Contact distance 10 mm  
To DIN 43650 (ISO 6952)

Ventilstecker Bauform C  
Contact distance 8 mm  
To DIN 43650 (ISO 6952)

Type: VSA

Type: VSB

Type: VSBD

Type: VSC

Type: VSCD