Line connector type MSD and others

Product documentation

for electromagnetically actuated hydraulic valves

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HAWE HYDRAULIK

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Contents

1 Overview of line connector type MSD and others

Line connectors are used to establish the electrical connection for solenoid valves and valves with integrated electronics as well as for directional and pressure sensors.
The line connectors type MSD and others are available in different designs and with various additional electrical functions.
HAWE valves with electric actuation have an abbreviation in the order coding that provides information about the type and level of supply voltage as well as the type of line connector. The abbreviation is valve-specific and is described in the relevant publication. Normally, line connectors are part of the scope of delivery of valves.

Line connector type MSD and others

Features and benefits:

- Cost-effective interference suppression measure
- Switching position monitoring via LEDs
- Rectifier circuit
- Energy savings during continuous operation

Intended applications:

- Industrial hydraulics
- Mobile hydraulics

2 Available versions, main data

2.1 Line connector for single-action solenoid

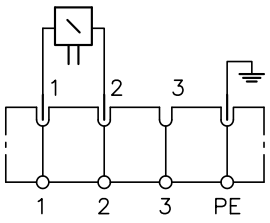
2.1.1 With pedestrial per DIN 43650 Type A (ISO 4400)

Protection class IP 65 per DIN EN 60529 and IEC 60529 when assembled and tightened

Line connector with no additional function

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 3-309 [1] [3]	6217 0002-00	black	3+PE	250 V DC/AC	5 A
	max. conductor cross section (mm^2)	**Cable gland**	**Cable ∅ (mm)**	**Ambient temperature**	**Notes, assembly**
MSD 3-309 [1] [3]	1.5	Pg 9	6 - 8	-40 ... +100°C	

Series: black housing (B socket), when used for single-action solenoid, contact 3 remains unused.



Contact 3 remains unused.

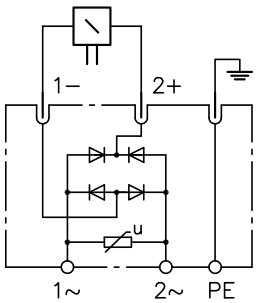
Line connector with rectifier (circuit)

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 4-209 P10	6217 6002-00	black	2+PE	250 V AC	1 A
	max. conductor cross section (mm^2)	**Cable gland**	**Cable ∅ (mm)**	**Ambient temperature**	**Notes, assembly**
MSD 4-209 P10 [1] [2]	1.5	Pg 9	6 - 8	-40 ... +100°C	Full bridge rectifier

Rectifier sockets enable the use of DC solenoids on AC mains supply (50 Hz and 60 Hz).

MSD 4-209 P10 with full bridge rectifier insert for single-action solenoids with 98 V DC coils on 110 V AC mains or 205 V DC coils on 230 V AC mains.

$U_{DC} = 0.9\ U_{AC} - 2\ V$



Line connector with clamp diode

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 3-209 C1	6236 5002-00	black	2+PE	250 V DC	4 A
MSD 4-309 C1+R	6217 0009-00	black	2+PE	24 V DC	4 A

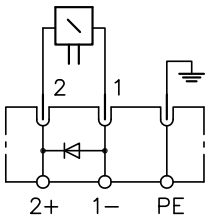
	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 3-209 C1	1.5	Pg 9	6 - 8	-40 ... +100°C	D
MSD 4-309 C1+R	1.5	Pg 9	6 - 8	-40 ... +100°C	D+R

MSD 3-209 C1 with one clamp diode, for use with single-action solenoids.

Both overvoltages and electromagnetic interference occur when switching solenoid valves (inductances). Clamp diodes [1] [2] connected in parallel with the coil can suppress the cut-off voltage peaks and ensure the highest degree of EMC, however they extend the hydraulic valve's switch-off time.

NOTE
Make sure that the polarity is correct! No reverse polarity protection!

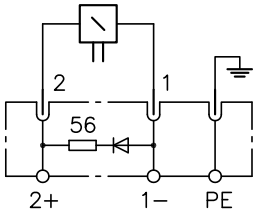
MSD 3-209 C1



MSD 4-309 C1+R with an additional resistor, in series with the clamp diode. Due to the resistor the voltage on the diode is better distributed and protects the clamp diode against overcurrent.

MSD 4-309 C1+R for use with stroke-monitored 2/2-directional valves according to Sk 7380 b and e and Sk 7380 E and F.

MSD 4-309 C1+R



[1] **NOTE**
The diodes extend the valve's fall time by 2 ... 5 times or more, depending on the size of the solenoid and the valve mounting.

[2] Diodes 1 N 4007, peak reverse voltage 1000 V, nominal current 1 A

[3] D = Diode
R = Resistor
Z = two Z-diodes in series in opposite directions
LED = Light emitting diode
rd. = red
grn. = green
yell. = yellow

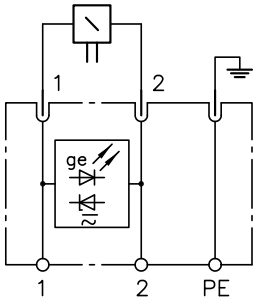
Line connector with LED display and protective circuit

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
SVS 3129020	6217 8024-00	black	2+PE	24 V DC/AC	4 A
SVS 296048	6217 8025-00	grey	2+PE	24 V DC/AC	4 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
SVS 3129020	1.5	Pg 9	5 - 10	-30 ... +100°C	2+LED yell.
SVS 296048	1.5	Pg 9	5 - 10	-30 ... +100°C	D+R

With two Z-diodes that are connected in series in opposite directions, a sufficient protective effect can be achieved with only a slight extension of the switch-off time.

SVS 3129020 and SVS 296048 each with protective circuit, yellow LED display, impervious to polarity for 24 V DC/AC. Transparent cover.



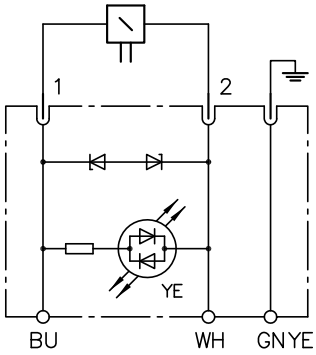
Ready-for-connection L5K line connector with 5 m cable

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
L5K	6217 8088-00	black	2+PE	24 V DC/AC	3 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
L5K	1.5	--	5.2	-40 ... +80°C	Z+LED yell.

L5K is a ready-for-connection valve socket with LED display for single-action solenoids. The line connector is firmly sealed with the connection cable on the valve side. The cable end has ready-for-connection single wires with wire end sleeves. The line connector is equipped with an integrated seal on the base plate.

- Overvoltage protection against inductive cut-off voltage peaks up to 47 V



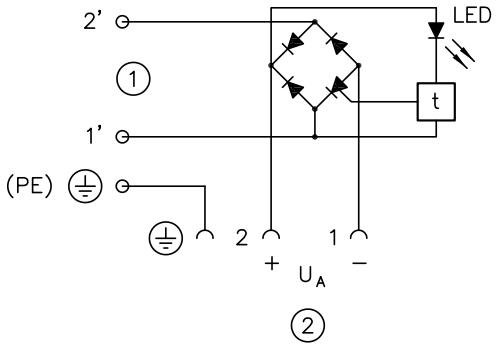
Line connector with economy circuit

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 4 P53	6217 8006-00	white	2+PE	230 V AC	1 A
MSD 4 P63	6217 8007-00	white	2+PE	115 V AC	1 A

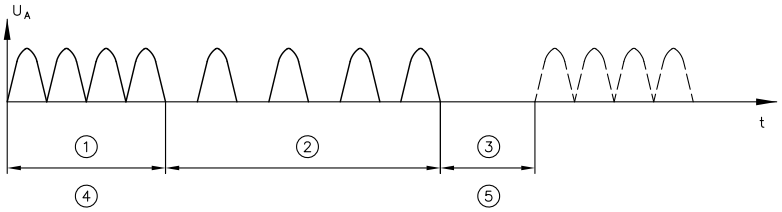
	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 4 P53	1	Pg 9	4-8	0 ... +40°C	Full bridge rectifier + LED rd.
MSD 4 P63	1	Pg 9	4-8	0 ... +40°C	Full bridge rectifier + LED rd.

For directional valves with single-action solenoid. When existing full bridge rectifier circuitry is switched on, it is switched to half-bridge after a certain delay. The initial voltage is reduced from 0.89 x U_{mains} to the folding voltage of 0.45 x U_{mains}.

For use during long switch-on times with only short pauses, during continuous operation or under increased ambient temperature. By reducing the applied voltage, the coil temperature is considerably lowered and this can result in a significant extension of solenoid lifetimes.



1 Supply voltage
2 Solenoid



1 Achieve work position
2 Maintain work position
3 Off
4 (Switchover time)
5 Restoration time

Switch-over time is the time from switching on until switching over to the economy voltage. 0.5...7 s (upper value when cold, lower value when warm).

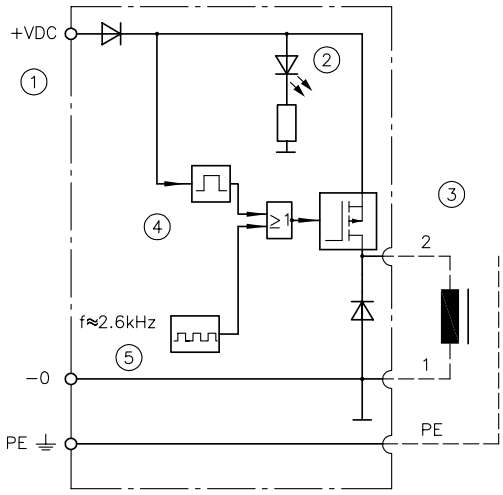
Restoration time is the time required to reset the unpowered electronics from the economy setting to their initial condition. approx. 0.4 ... 0.8 s

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 4 ECO	6217 8203-00	transparent	2+PE	30 V AC	1.5 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 4 ECO	1.5	Pg 9	4-8	-20 ... +50°C	LED yell.

Ripple factor	**w**	**max. 10% (smooth supply voltage sufficiently)**
Initial voltage	U_A	U_B - 0.8 V DC
Start current	I_A	max. 1.5 A
Holding voltage	U_H	0.75 ... 0.79% U_B fixed
Holding current	I_H	max. 1.2 A Holding voltage is the voltage at the solenoid valve in a steady state.
Response time (On)	t_{on}	Refer to the relevant information in the publication for G 24 versions accompanying the valve.
Drop-off time	t_{off}	Depending on the valve type, the switch-off delay and fall time may be considerably longer than specified in the relevant publications.
Switchover time	t_u	Approx. 600 ... 750 ms fixed. Switch-over time is the time from switching on until switching over to the holding voltage.
Clock frequency of the PWM output stage	f_{clock}	≈2.6 kHz
Max. permissible switching frequency		0.1 Hz

MSD 4 ECO for 24 V DC for controlling black/white solenoids. The excitation voltage, which is fully connected when switched on, is reduced after a certain delay and the valve is then supplied with only approx. 75% of the voltage. When the solenoid is energized, this is indicated by a yellow LED.



1 Supply voltage
2 LED yellow
3 Solenoid valve
4 $t_{start-up}$≈ 650 ms
5 duty cycle = 0,75...0,79

2.1.2 With pedestrial per industrial standard Type B (11 mm contact gap)

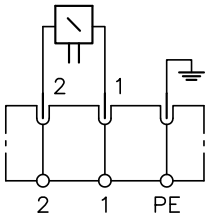
Protection class IP 54 per DIN EN 60529 and IEC 60529 when assembled and tightened

Line connector with no additional function

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 6-209	6236 5004-00	black	2+PE	250 V DC/AC	5 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 6-209	1.5	Pg 9	6 - 8	-40 ... +100°C	

Line connector MSD 6-209 in standard version (without LED or protective circuit). For all single-action solenoids with narrow plug design and flat plug tabs. E.g. size 0 of the valve per D 7300, but also proportional valves with proportional solenoids ⌀25.



Line connector with LED display and protective circuit

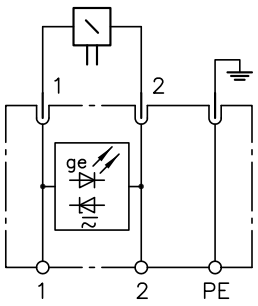
Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
SVS 3129720	6217 8027-00	black	2+PE	24 V DC/AC	4 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
SVS 3129720	1.5	Pg 9	5 - 10	-30 ... +100°C	Z+LED yell.

Line connector SVS 3129720 with yellow LED display and protective circuit formed by two Z-diodes.

With two Z-diodes that are connected in series in opposite directions, a sufficient protective effect can be achieved with only a slight extension of the switch-off time.

Impervious to polarity for 24 V DC/AC. Transparent cover.



2.1.3 With central pedestrial

Protection class IP 54 per DIN EN 60529 and IEC 60529 when assembled and tightened

Line connector with no additional function

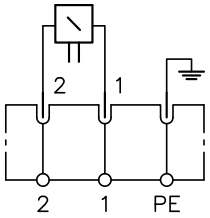
Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 1	6236 5001-00	black	2+PE	250 V DC/AC	6 A
MSD 1D	6236 5006-00	black	2+PE	250 V DC/AC	6 A
MSD 2	6217 6003-00	black	2+PE	250 V DC/AC	4 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 1	1.5	Pg 9	up to 6	-40 ... +100°C	
MSD 1D	1.5	Pg 9	up to 6	-40 ... +100°C	without manual override
MSD 2	1.5	M12	up to 6	-40 ... +100°C	

MSD 1 for size 1 of the G valve per D 7300. Manual override by pressing the cap (rubber cover cap included in delivery).

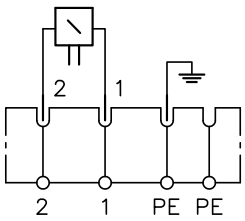
MSD 1D without rubber cap or manual override

MSD 1
MSD 1D



MSD 2 for size 0 of the G valve per D 7300. Manual override by pressing the cap (rubber cover cap included in delivery).

MSD 2
Optional PE wire connection depending on the mounting direction of the plug

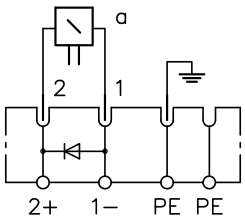


Line connector with clamp diode

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 2 C1	6217 6006-00	black	2+PE	250 V DC/AC	4 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 2 C1	1.5	M12	up to 6	-40 ... +100°C	D

MSD 2 C1 version with clamp diode [1] [2] to suppress cut-off voltage peaks, e.g. in connection with electronic circuits and/or to achieve a longer fall time.



NOTE
For MSD 2 C1, make sure that the polarity is correct! No reverse polarity protection.

[1]
D = Diode
R = Resistor
Z = two Z-diodes in series in opposite directions
LED = Light emitting diode
rd. = red
grn. = green
yell. = yellow

[2]
NOTE
The diodes extend the valve's fall time by 2 ... 5 times or more, depending on the size of the solenoid and the valve mounting.

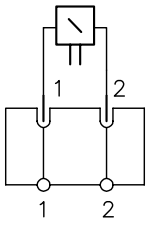
2.1.4 AMP mating connector, 2-pin

Protection class IP 67 per DIN EN 60529 and IEC 60529 when assembled

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
AMP mating connector set 2-pin	6217 0185-00	black	2	12/24 V DC	1.26 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
AMP mating connector set 2-pin	1	--	up to 7	-30 ... +125°C	

AMP Junior Timer mating connector set 2-pin for use with single-action solenoid. Suitable for applications requiring a higher degree of waterproofness.



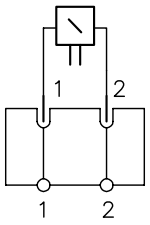
2.1.5 Schlemmer plug

Protection class IP 67 per DIN EN 60529 and IEC 60529 when assembled and tightened

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
Schlemmer 10 SL straight	6217 8070-00	black	3	48 V DC	13 A
Schlemmer 10 SL angle	6217 8071-00	black	3	48 V DC	13 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
Schlemmer 10 SL straight	1.0 - 1.5	Pg 11	up to 10	-25 ... 80°C	
Schlemmer 10 SL angle	1.0 - 1.5	Pg 11	up to 10	-25 ... 80°C	

Schlemmer plug with bayonet type 10 SL is available in 2 versions, straight or angled at 90°.



2.2 Line connector for double and reverse solenoids and twin solenoids

2.2.1 With pedestrial per DIN 43650 Type A (ISO 4400)

Protection class IP 65 per DIN EN 60529 and IEC 60529 when assembled and tightened

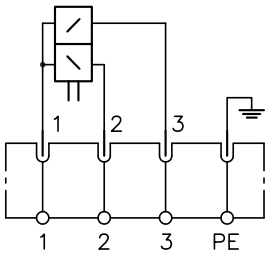
Line connector with no additional function

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 3-309	6217 0002-00	black	3+PE	250 V DC/AC	5 A
MSD 3-309	6217 0003-00	grey	3+PE	250 V DC/AC	5 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 3-309	1.5	Pg 9	6 - 8	-40 ... +100°C	
MSD 3-309	1.5	Pg 9	6 - 8	-40 ... +100°C	

Series (black) for proportional solenoids Φ35 and Φ45 with standard plug type A.

Grey housing (A-socket) only for 4/3-directional spool valve type SW...



Line connector with rectifier (circuit)

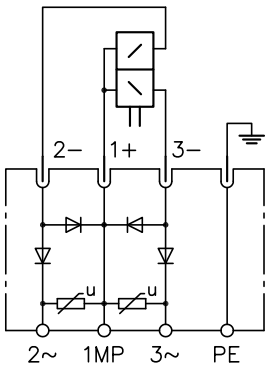
Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 4-309 P22	6217 6001-00	black	2+PE	250 V AC	1 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 4-309 P22	1.5	Pg 9	6 - 8	-40 ... +100°C	2x half-wave rectifier

Rectifier sockets for the use of DC solenoids on AC mains supply 50 Hz and 60 Hz.

MSD 4-309 P22 with double half-wave rectifier set with clamp diode [1] [2], for double and reverse solenoids and twin solenoids with 102 V DC coils on 230 V AC mains or 48 V DC coils on 110 V AC mains.

$U_{DC} = 0.45\ U_{AC} - 1\ V$

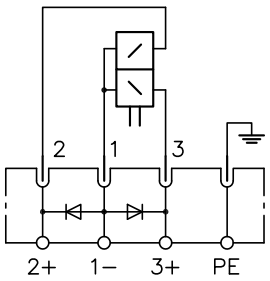


Line connector with clamp diode

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 4-309 C2	6236 6005-00	black	3+PE	250 V DC	4 A
	max. conductor cross section (mm²)	**Cable gland**	**Cable ∅ (mm)**	**Ambient temperature**	**Notes, assembly**
MSD 3-309 C2	1.5	Pg 9	6 - 8	-40 ... +100°C	2xD

MSD 4-309 C2 with two clamp diodes, for DC double and reverse solenoids and twin solenoids.

Both overvoltages and electromagnetic interference occur when switching solenoid valves (inductances). Clamp diodes [1]) [3]) connected in parallel with the coil can suppress the cut-off voltage peaks and ensure the highest degree of EMC. However, they extend the hydraulic valve's switch-off time.

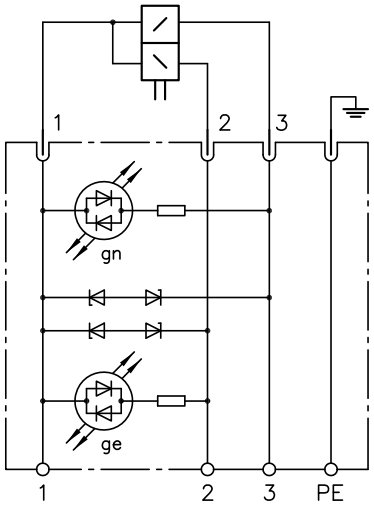


Line connector with LED display and protective circuit

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
SVS 296365	6217 8134-00	black	3+PE	24 V DC	4 A
	max. conductor cross section (mm²)	**Cable gland**	**Cable ∅ (mm)**	**Ambient temperature**	**Notes, assembly**
SVS 296365	1.5	--	5 - 10	-30 ... +100°C	2x LED yell./grn

Line connector SVS 296365 with two LEDs (green and yellow) and protective circuit formed by two Z-diodes. For use with twin solenoids and double and reverse solenoids.

24 V DC/AC, impervious to polarity, cover transparent.



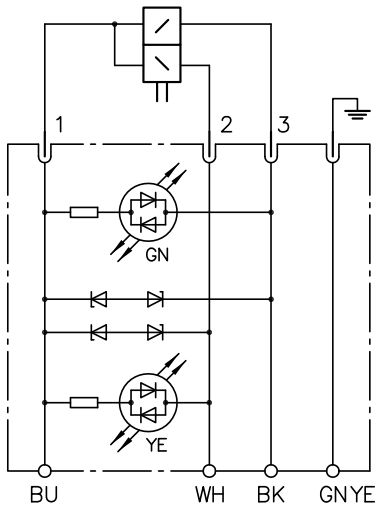
Ready-for-connection L5K line connector with 5 m cable

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
L5K-VZP	6217 8086-00	black	3+PE	10 ... 32 V DC/AC	3 A

	max. conductor cross section (mm²)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
L5K-VZP	0.5	--	5.2	-40 ... +80°C	Z+LED yell./ grn

L5K-VZP is a ready-for-connection valve socket with LED display for twin solenoids. On the valve side, the line connector is firmly sealed with the connection cable; on the other side, the ready-for-connection single wires are provided with wire end sleeves. The line connector has an integrated seal on the base plate.

- Overvoltage protection against inductive cut-off voltage peaks up to 47 V
- Ready-for-connection line connector with 5 m cable



[1] **NOTE**
The diodes extend the valve's fall time by 2 ... 5 times or more, depending on the size of the solenoid and the valve mounting.

[2] Diodes 1 N 4007, peak reverse voltage 1000 V, nominal current 1 A

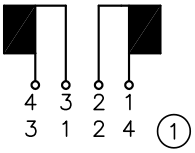
[3] D = Diode
R = Resistor
Z = two Z-diodes in series in opposite directions
LED = Light emitting diode
rd. = red
grn. = green
yell. = yellow

2.2.2 With pedestrial per DIN 43650 Type C

Protection class IP 65 per DIN EN 60529 and IEC 60529 when assembled and tightened

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 10	6217 0036-00	black	3+PE	250 V DC/AC	16 A
	max. conductor cross section (mm^2)	**Cable gland**	**Cable ∅ (mm)**	**Ambient temperature**	**Notes, assembly**
MSD 10	xx	H6	xx	-40 ... +90°C	

MSD 10 with pedestrial per DIN 43650 Type C.



1 (for coding ...H 4 and ...C 4)

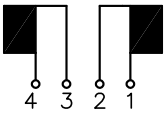
2.2.3 AMP mating connector set

Protection class IP 67 per DIN EN 60529 and IEC 60529 when assembled and tightened

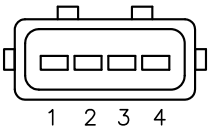
Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
AMP mating connector set 4-pin	6217 0180-00	black	4	24 V DC	1.26 A
	max. conductor cross section (mm^2)	**Cable gland**	**Cable ∅ (mm)**	**Ambient temperature**	**Notes, assembly**
AMP mating connector set 4-pin	1	--	up to 7	-30 ... +125°C	

AMP mating connector set 4-pin for twin solenoids and double and reverse solenoids.

Suitable for applications requiring a higher degree of waterproofness and reliability.



AMP Junior Timer,
4-pin
IP 67 (IEC 60529)



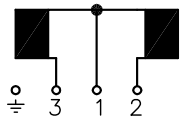
2.2.4 Schlemmer plug with bayonet

Protection class IP 67 per DIN EN 60529 and IEC 60529 when assembled and tightened

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
Schlemmer 10 SL straight	6217 8070-00	black	3	48 V DC	13 A
Schlemmer 10 SL angle	6217 8071-00	black	3	48 V DC	13 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
Schlemmer 10 SL straight	1.0 - 1.5	Pg 11	up to 10	-25 ... 80°C	
Schlemmer 10 SL angle	1.0 - 1.5	Pg 11	up to 10	-25 ... 80°C	

Schlemmer 10 SL with bayonet is available in two versions, straight or angled at 90°.



2.3 Line connector for switch units

2.3.1 With pedestrial per DIN 43650 Type A (ISO 4400)

Protection class IP 65 per DIN EN 60529 and IEC 60529 when assembled and tightened

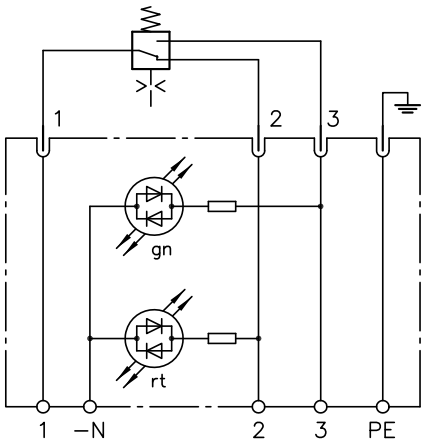
Line connector with LED display

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
SVS 296100	6217 8026-00	black	3+PE	24 V DC/AC	5 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
SVS 296100	1.5	Pg 9	5 - 10	-30 ... +100°C	LED rd./grn

SVS 296100 has two independent LED displays, red and green, for pressure switches. For signalling the switching status on pressure switches per D 5440.

Transparent cover.



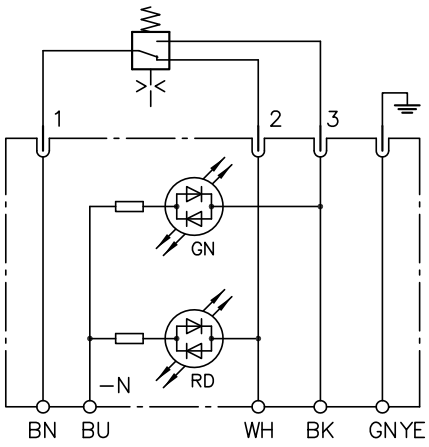
Ready-for-connection L5K-DG line connector with 5 m cable

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
L5K-DG	6217 8087-00	black	3+PE	24 V DC/AC	3 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
L5K-DG	0.5	--	5.2	-40 ... +80°C	Z+LED grn./rd.

L5K-DG is a ready-for-connection line connector with LED display for pressure switches. The line connector is firmly sealed with the connection cable. The open cable end has ready-for-connection single wires with wire end sleeves. The line connector has an integrated seal on the base plate.

- Overvoltage protection against inductive cut-off voltage peaks up to 47 V
- The ready-for-connection line connector has a cable length of 5 m.



2.3.2 With pedestrial per DIN 43650 Type C

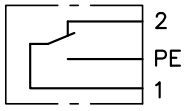
Protection class IP 65 per DIN EN 60529 and IEC 60529 when assembled and tightened

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
GDSN 207	6217 0037-00	black	3	250 V DC/AC	6 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
GDSN 207	0.75	Pg 7	4.5 - 6	-40 ... +125°C	

GDSN 207 is a line connector with pedestrial per DIN 43650 Type C, for up to 250 V AC/DC.

GDSN 207 is equipped with 3 pins to supply the level and temperature switch on compact hydraulic power packs. See D 7900 Item 4.2.



2.3.3 Schlemmer plug with bayonet

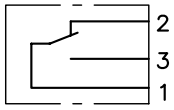
Protection class IP 67 per DIN EN 60529 and IEC 60529 when assembled and tightened

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
Schlemmer plug 10 SL straight	6217 8070-00	black	3	12/24 V DC	13 A
Schlemmer plug 10 SL angle	9217 8071-00	black	3	12/24 V DC	13 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
Schlemmer plug straight 10SL	1.0 - 1.5	Pg 11	up to 10	-25 ... +80°C	
Schlemmer plug angle 10SL	1.0 - 1.5	Pg 11	up to 10	-25 ... +80°C	

Schlemmer plug 10 SL with bayonet is available in two versions, straight or angled at 90°.

For use with DG 3 of the pressure switch per publication D 5440. Contact 1-2 remains closed as long as the pressure is below the switching point.



2.3.4 MSD-T7 M12 socket

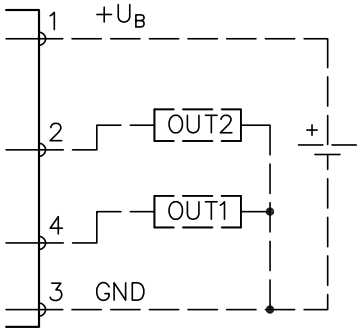
Protection class IP 67 per DIN EN 60529 and IEC 60529 when assembled and tightened

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD-T7 M12x1, 90°	6217 8048-00	black	4	250 V	4 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD-T7 M12x1, 90°	0.75	--	4 - 6	-40 ... +85°C	

MSD-T7 is a 90° angled line connector for pressure switches. Connection is M12x1.

To lock the cable connector with the device connector, the threaded ring is tightened “hand-tight”.



2.4 Adapter

2.4.1 Adapter for pedestrial per DIN 43650 Type A

Protection class IP 65 per DIN EN 60529 and IEC 60529 when assembled and tightened

Adapter for pedestrial per DESINA DIN 43650 Type A / plug M12x1

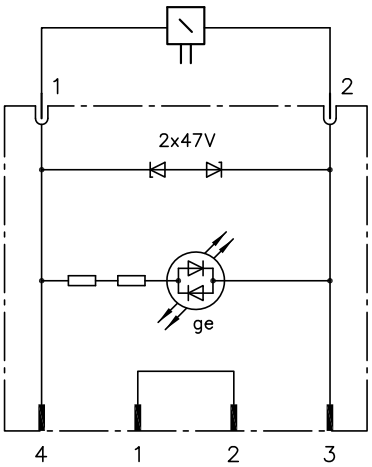
Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSUD 41321	8225 0072-00	black	3+PE	24 V DC/AC	4 A
MSUD 41341	6217 8064-00	black	4	24 V DC/AC	4 A
MSUD 41441	8225 0092-00	black	3+PE	24 V DC/AC	4 A
MSUD 41461	6217 8065-00	black	4	24 V DC/AC	4 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSUD 41321	--	--	--	-25 ... +90°C	Outlet to the top for pressure switch
MSUD 41341	--	--	--	-40 ... +90°C	Outlet to the top for single-action solenoid
MSUD 41441	--	--	--	-25 ... +90°C	Outlet to the rear for pressure switch
MSUD 41461	--	--	--	-25 ... +90°C	Outlet to the rear for single-action solenoid

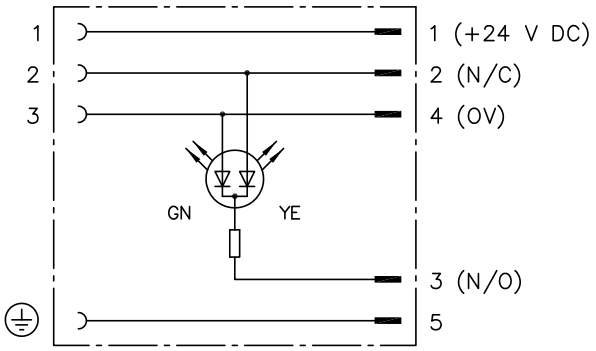
Inexpensive adapter for retrofitting single-action solenoid valves and pressure switches in compliance with DESINA with LED display and integrated protective circuit against inductive cut-off voltage peaks. The adapter is equipped with a simple cable break plausibility check in the form of bridged contacts 1 and 2.

The adapter contains a captive flat seal and an M3 central screw.

Single-action solenoid



Pressure switch



2.4.2 Adapter for pedestrial per DIN 43650 Type B

Protection class IP 65 per DIN EN 60529 and IEC 60529 when assembled and tightened

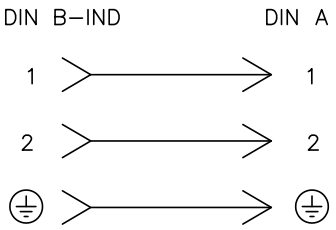
Adapter for pedestrial DIN Form A - DIN B

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
Adapter Form A - Form B	6217 0238-00	black	2+PE	--	--

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
Adapter Form A - Form B	--	--	--	--	

Adapter Form A - Form B for transition from industrial standard Type B to DIN 43650 Type A. It provides the option to use the proportional amplifier EV2S per D 7818/1 to control a solenoid valve with industrial standard connector plug.

Electrical diagram



2.4.3 Adapter for pedestrial, central pedestrial

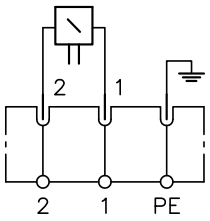
Protection class IP 54 per DIN EN 60529 and IEC 60529 when assembled and tightened

Adapter for pedestrial, central device socket MSD 1 to DIN Form A

Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 1 - MSD 3	6217 6004-00	black	2+PE	250 V DC/AC	6 A
MSD 2 - MSD 3	6217 8034-00	black	2+PE	250 V DC/AC	4 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 1 - MSD 3	--	--	--	-30 ... +100°C	
MSD 2 - MSD 3	--	--	--	-40 ... +100°C	

Adapter version MSD 1- MSD 3 for G valve size 1. For transition from MSD - 1 to line connector per DIN 43650 A. For a characteristic order coding see D 7300, adapter version MSD 2 - MSD 3 for G valve size 0 used. For transition from MSD - 2 to line connector per DIN 43650 A.



Adapter for pedestrial, central device socket MSD 2 to DIN Form A with rectifier (circuit)

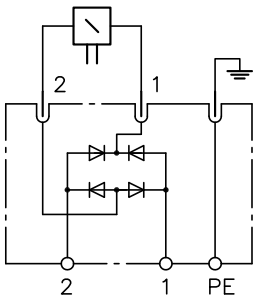
Type	Part number	Colour	Number of contacts	Operating voltage U_{max}	Current I_{max}
MSD 2 - MSD 3 WG	6217 8034-00	black	2+PE	250 V DC/AC	4 A

	max. conductor cross section (mm^2)	Cable gland	Cable ∅ (mm)	Ambient temperature	Notes, assembly
MSD 2 - MSD 3 WG	--	--	--	-40 ... +100°C	

Adapter version MSD 2 - MSD 3 WG additionally with integrated full bridge rectifier [1] [2], for G valve size 0. For transition from MSD - 2 to line connector per DIN 43650 A.

The integrated rectifier enables the use of DC solenoids on AC mains supply (50 and 60 Hz).

$U_{DC} = 0.9\ U_{AC} - 2\ V$



[1]

NOTE
The diodes extend the valve's fall time by 2 ... 5 times or more, depending on the size of the solenoid and the valve mounting.

[2] Diodes 1 N 4007, peak reverse voltage 1000 V, nominal current 1 A

3 Dimensions

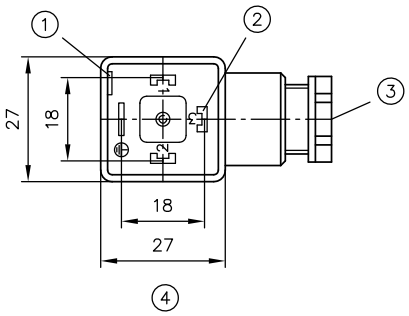
All dimensions in mm, subject to change.

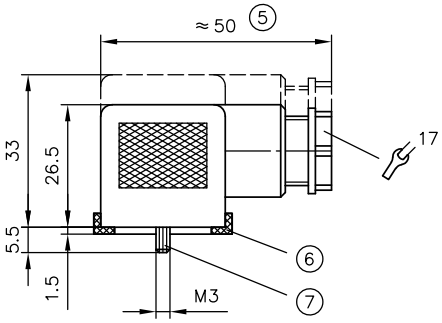
3.1 Line connector per DIN 43650 Tl.1, Type A

MSD 3-209 C1
MSD 3-309 black
MSD 3-309 grey
MSD 4-309 C1+R
MSD 4-309 C2

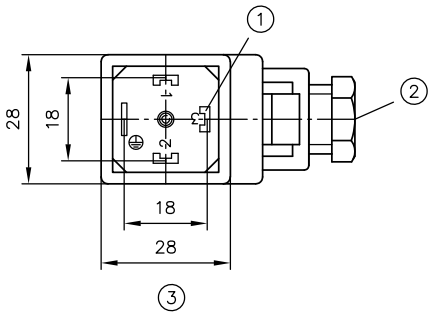
MSD 4-209 P10
MSD 4-309 P22
MSD 4 P53
MSD 4 P63

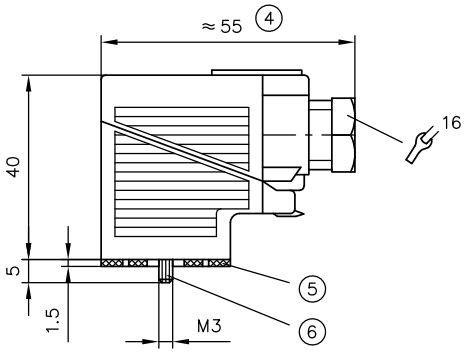
SVS 3129020 black
SVS 296048 grey
SVS 296100





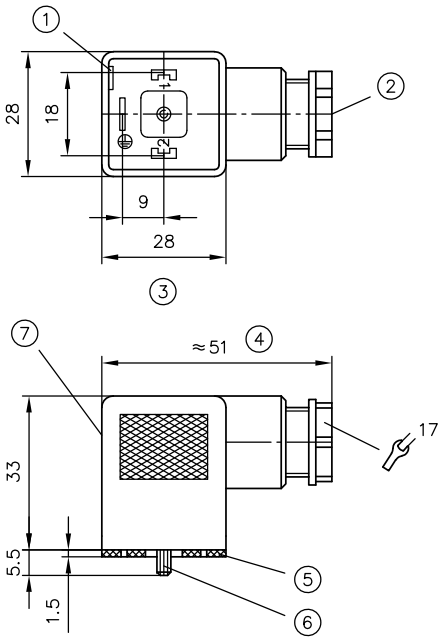
1 Screwdriver slot for easy dismantling of insert
2 Contact not used in 2-pin version
3 Cable gland Pg 9, DIN 43650
4 View without seal Cable connection 4x90°
5 slackened
6 Seal
7 Fastening screw M3, tightening torque M_A = 0.5 Nm





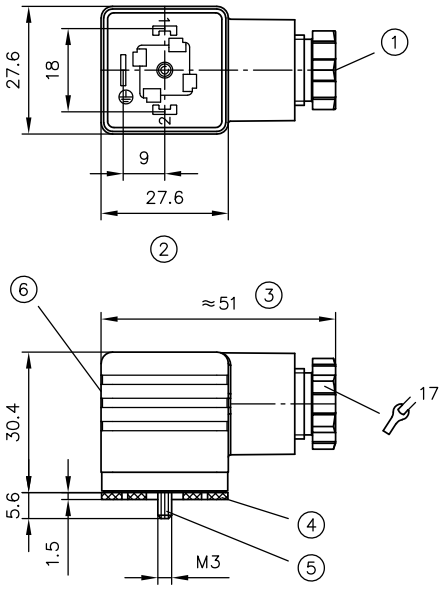
1 Contact not used in 2-pin version
2 Cable gland Pg 9, DIN 43650
3 View without seal Cable connection 4x90°
4 slackened
5 Seal
6 Fastening screw M3, tightening torque M_A = 0.5 Nm

MSD 4 P53
MSD 4 P63



1 Screwdriver slot for easy dismantling of insert
2 Cable gland Pg 9, DIN 43 650
3 View without seal Cable connection 4x90°
4 slackened
5 Seal
6 Fastening screw M3, tightening torque M_A = 0.5 Nm
7 Type identifier printed on this side surface

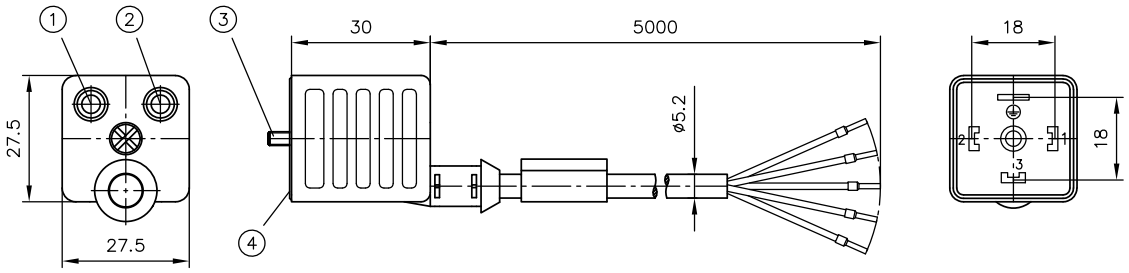
MSD 4 ECO



1 Cable gland Pg 9, DIN 43 650
2 View without seal Cable connection 4x90°
3 slackened
4 Seal
5 Fastening screw M3, tightening torque M_A = 0.5 Nm
6 Type identifier printed on this side surface

3.2 Ready-for-connection line connector per DIN 43650 Tl.1, Type A

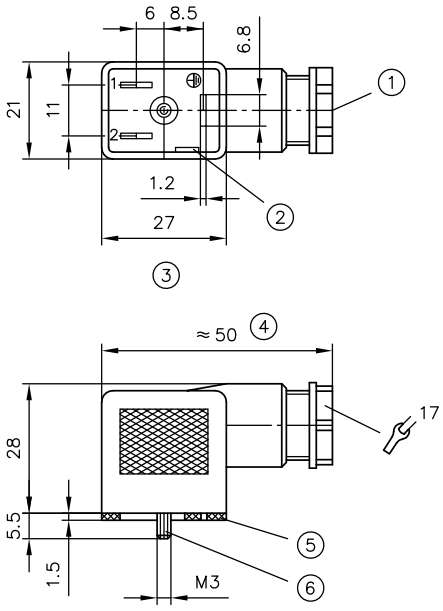
L5K



1 LEDs (yellow)
2 LEDs (green)
3 Fastening screw M3, tightening torque M_A = 0.5 Nm
4 Seal

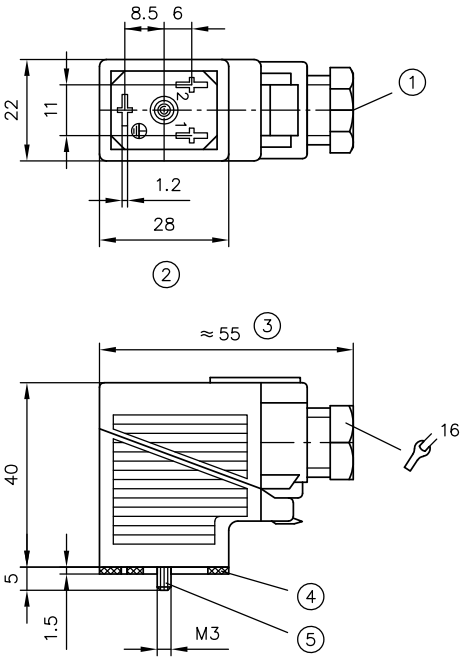
3.3 Line connectors slim design, per industrial standard Type B (11 mm contact gap)

MSD 6-209



1 Cable gland Pg 9, DIN 43650
2 Screwdriver slot for easy dismantling of insert
3 View without seal Cable connection 4x90°
4 slackened
5 Seal
6 Fastening screw M3, tightening torque M_A = 0.5 Nm

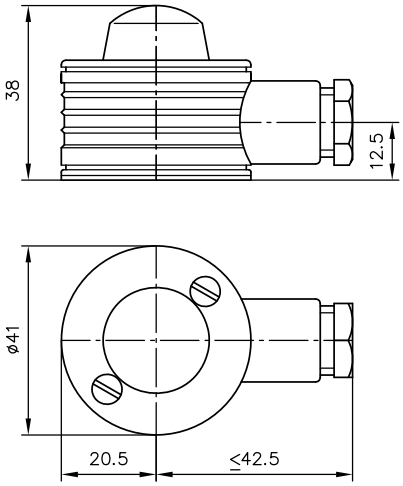
SVS 3129720 black



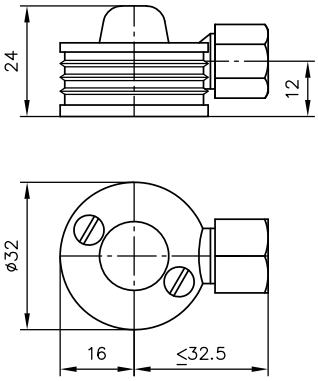
1 Cable gland Pg 9, DIN 43650
2 View without seal Cable connection 4x90°
3 slackened
4 Seal
5 Fastening screw M3, tightening torque M_A = 0.5 Nm

3.4 Central socket

MSD 1

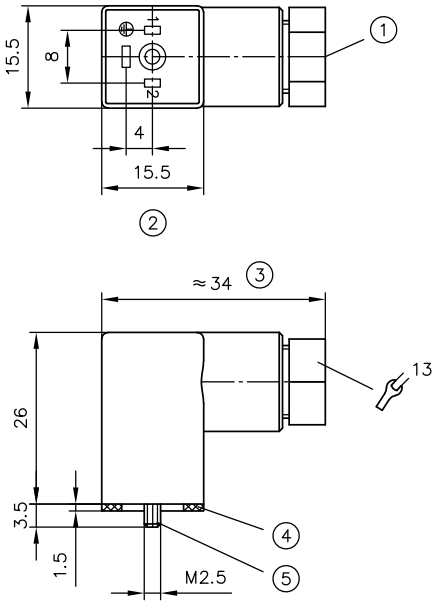


MSD 2



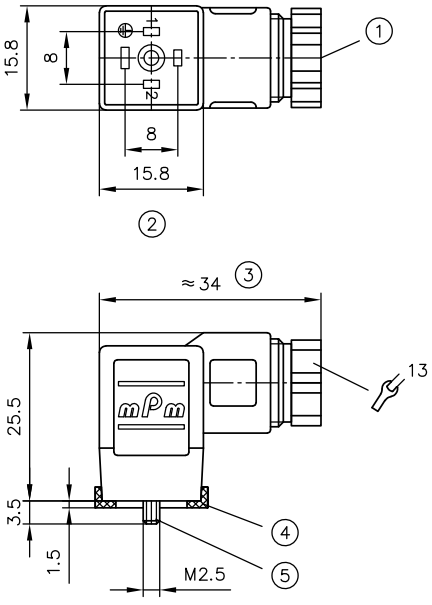
3.5 Line connector per DIN 43650 Tl.1, Type C

GDSN 207



1 Cable gland Pg, DIN 43650
2 View without seal Cable connection 4x90°
3 slackened
4 Seal
5 Fastening screw M2.5, tightening torque M_A = 0.5 Nm

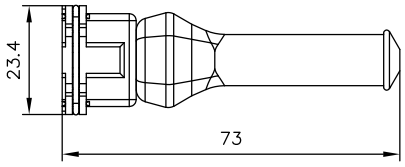
MSD 10



1 Cable gland Pg 9, DIN 43650
2 View without seal Cable connection 4x90°
3 slackened
4 Seal
5 Fastening screw M2.5, tightening torque M_A = 0.5 Nm

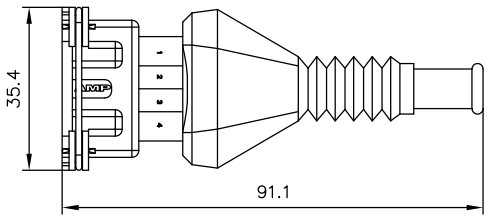
3.6 AMP mating connector set

AMP mating connector set 2-pin



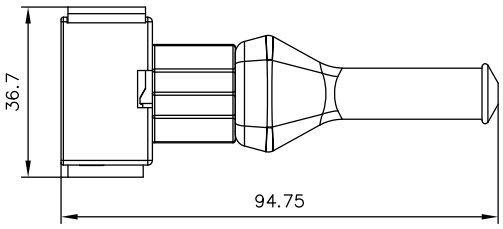
Components	HAWE no.	AMP no.	Number
Grommet	6217 0154-00	880810-1	1
Single wire sealing for insulation ∅ 2.2 - 3 mm white	6217 0137-00	0-828905-1	2
Single wire sealing for insulation ∅ 1.2 - 2.1 mm blue	6217 0136-00	0-828904-1	2
Contact for strand cross section 1.1 - 2.5 mm²	6217 0133-00	2-929938-1	2
Contact for strand cross section 0.5 - 1.0 mm²	6217 0134-00	2-929940-1	2
Mating connector F. cable	6217 0155-00	828657-3	1

AMP mating connector set 4-pin



Components	HAWE no.	AMP no.	Number
Protective cover	6217 0167-00	493581-1	1
Single wire sealing for insulation ∅ 2.2 - 3 mm white	6217 0137-00	0-828905-1	4
Single wire sealing for insulation ∅ 1.2 - 2.1 mm blue	6217 0136-00	0-828904-1	4
Contact for strand cross section 1.1 - 2.5 mm²	6217 0133-00	2-929938-1	4
Contact for strand cross section 0.5 - 1.0 mm²	6217 0134-00	2-929940-1	4
Mating connector F. cable	6217 0179-00	282192-1	1

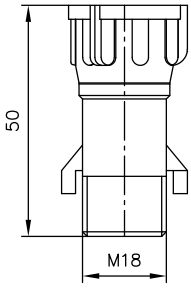
AMP mating connector set 4-pin



Components	HAWE no.	AMP no.	Number
Protective cover	6217 0139-00	76319	1
Single wire sealing for insulation ∅ 2.2 - 3 mm white	6217 0137-00	0-828905-1	4
Single wire sealing for insulation ∅ 1.2 - 2.1 mm blue	6217 0136-00	0-828904-1	4
Contact for strand cross section 1.1 - 2.5 mm²	6217 0133-00	2-929938-1	4
Contact for strand cross section 0.5 - 1.0 mm²	6217 0134-00	2-929940-1	4
Mating connector F. cable	6217 0138-00	1-967059-1	1

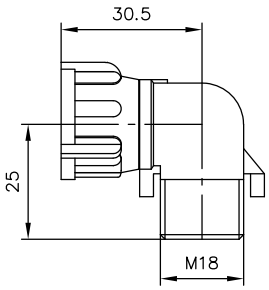
3.7 Schlemmer plug with bayonet

Schlemmer plug 10 SL straight



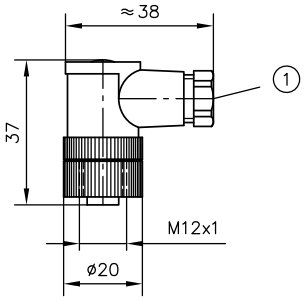
Components	HAWE no.	Schlemmer no.	Number
Taper plug with bayonet	6217 6015-00	9800582 7805039 8112495 7814011	1
Single wire sealing	6217 6016-00	8113647	1
Sealing buffer	6217 6017-00	8117101	1

Schlemmer plug 10 SL angle



Components	HAWE no.	Schlemmer no.	Number
Angle plug with bayonet	6217 6014-00	9800581 7805039 8112495 7814011	1
Single wire sealing	6217 6016-00	8113647	1
Sealing buffer	6217 6017-00	8117101	1

3.8 Plug MSD-T7 M12



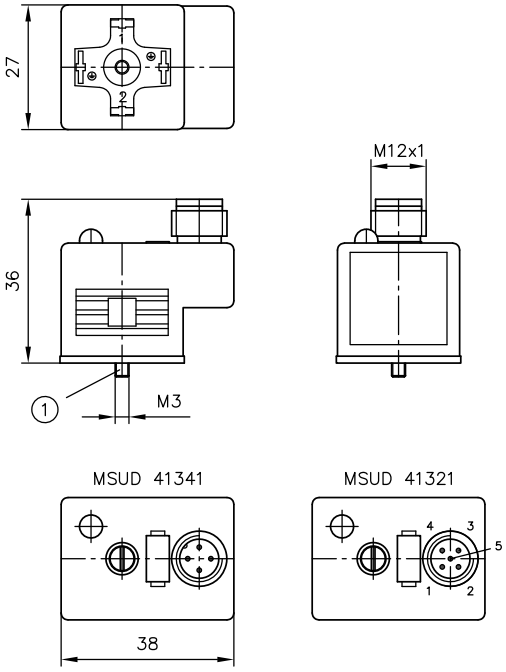
1 Cable feed rotatable by 90°

Electrical connection

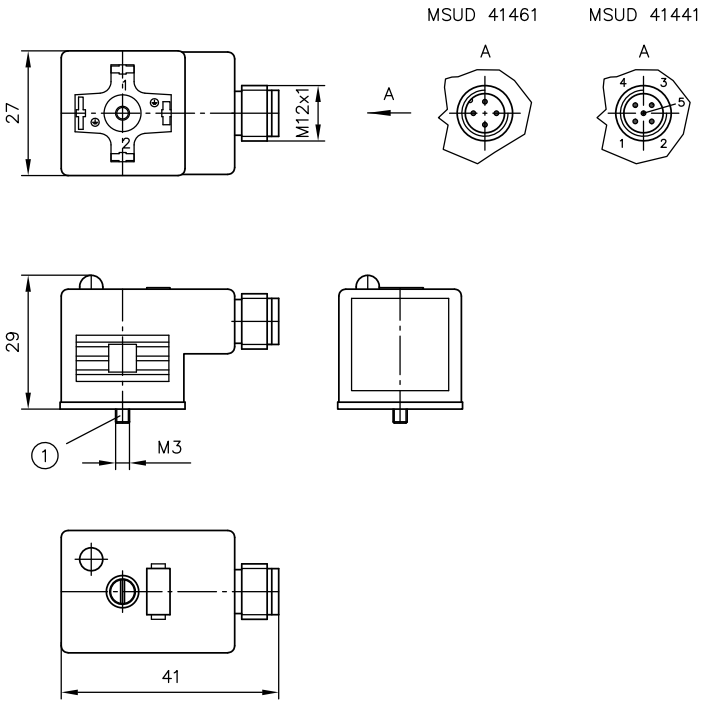
1 +24 V
2 PNP switching signal
3 GND
4 IO-Link

3.9 Adapter for pedestrial DIN Form A to M12

MSUD 41321
MSUD 41341

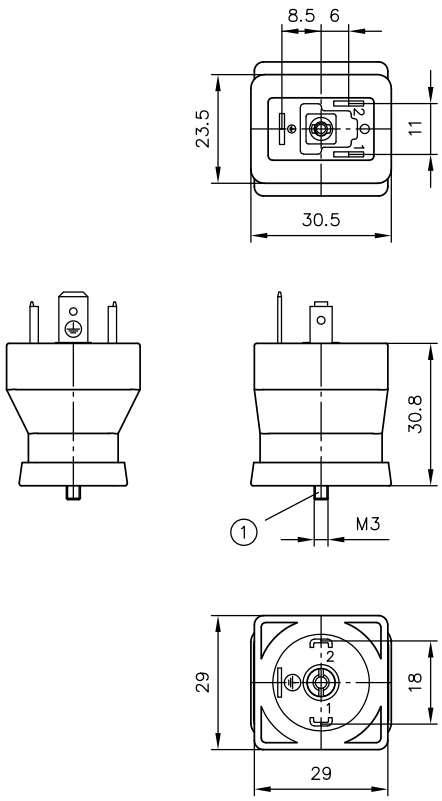


MSUD 41441
MSUD 41461



1 Fastening screw M3, tightening torque M_A = 0.4 Nm

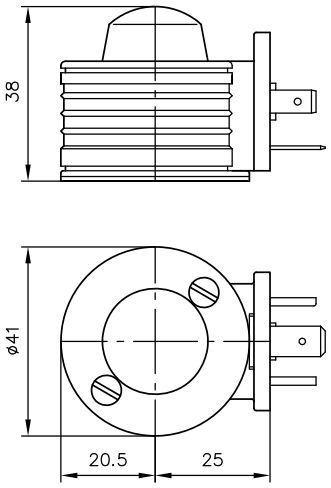
3.10 Adapter for pedestrial DIN Form A - DIN Form B



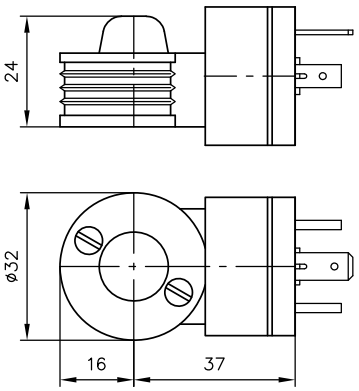
1 Fastening screw M3, tightening torque M_A = 0.4 Nm

3.11 Adapter for central pedestrial to DIN Form A

MSD 1 - MSD 3



MSD 2 - MSD 3
MSD 2 - MSD 3 WG



Further information

Application

Line connector and adapter for electrical connection to:

Single-action solenoids:

- Directional seated valve type EM and EMP: D 7490/1
- Directional seated valve type WN and WH: D 7470 A/1
- Directional seated valve type G, WG and others: D 7300
- Directional seated valve type BVE: D 7921
- Directional seated valve type BVG 1 and BVP 1: D 7765

Double and reverse solenoids and twin solenoids:

- Proportional directional spool valve, type PSL and PSV size 2: D 7700-2
- Proportional directional spool valve, type PSL, PSM and PSV size 3: D 7700-3
- Proportional directional spool valve, type PSL, PSM and PSV size 5: D 7700-5
- Proportional directional spool valve banks type PSLF and PSVF size 7: D 7700-7F
- Proportional directional spool valve type PSLF, PSVF and SLF: D 7700-F
- Actuation for proportional directional spool valves type PSL/PSV: D 7700 CAN

Pressure switches:

- Pressure switch type DG: D 5440
- Pressure switch type DG 51 E: D 5440 E/2
- Electronic pressure switch type DG 6: D 5440 F

D 7163 - 05-2020-1.0

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