

Safety valves SV01/03/05



AVENTICS™

**AVENTICS Series SV01/03/05
Safety valves**


EMERSON™

AVENTICS Series SV01/03/05 Safety valves

AVENTICS dual valves are redundant 3/2 valves for external monitoring that meet the needs and requirements of safe 3/2 valves for the pressurization and exhaust of machines with pneumatic controls in accordance with the ISO 13849-1-2 requirements for safety functions.

- Rapid response for minimum actuating time
- Position sensors for valve fault monitoring
- Pressure range from 3 - 10 bar
- Internal and external pilot supply as standard
- Category 4 performance level "e" according to ISO 13849-1

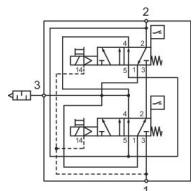


Product overview

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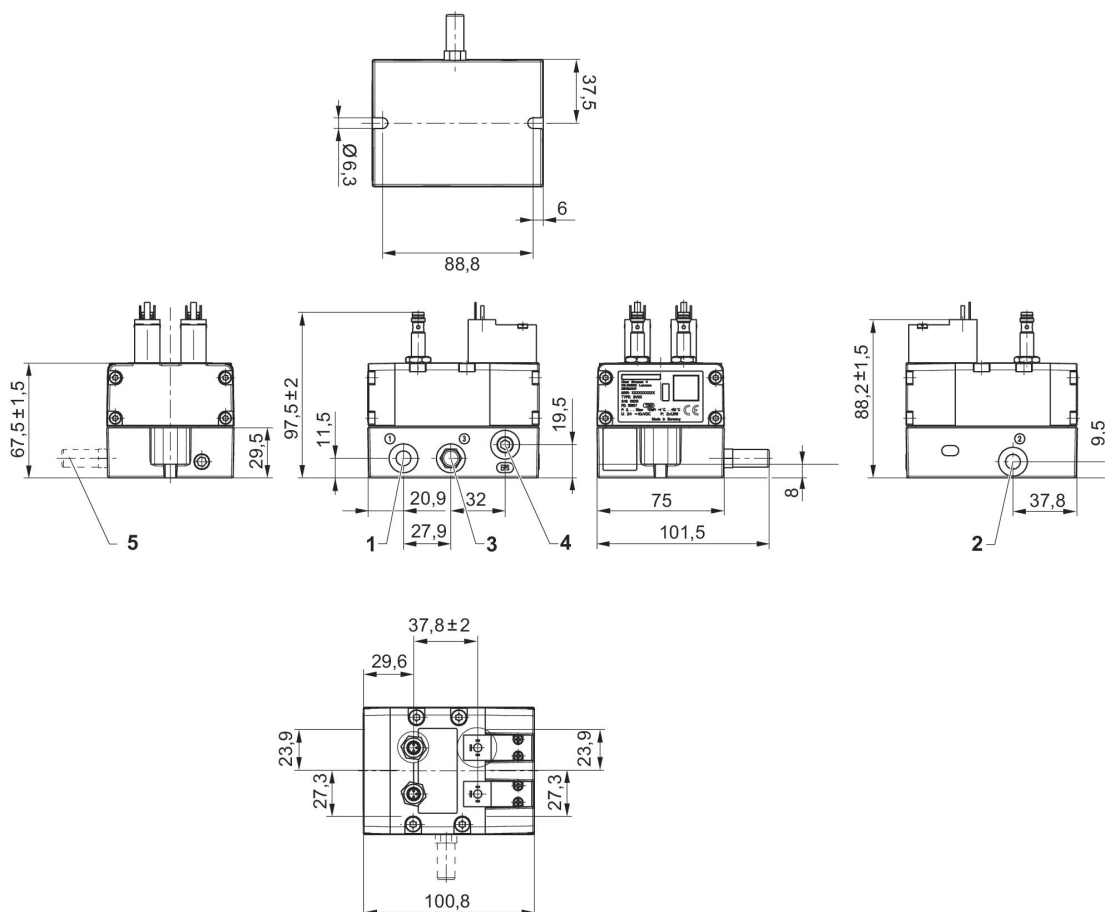
3/2 directional safety valve, Series SV01

Activation: Electrically
 Actuating control: Double Solenoid
 Standards: ISO 13849-1, category 4, performance level: e (possible)
 Switching principle: 3/2, with spring return
 Min. control pressure: 3 bar
 Min. control pressure: 10 bar
 Type: Double spool valve



Switching principle	Compressed air connection input	Operational voltage	Pilot	Power consumption DC [W]	Part No.
3/2, with spring return	G 1/8	24 V DC	Internal	1.5	R412027208
3/2, with spring return	1/8 NPT	24 V DC	Internal	1.5	R412027209

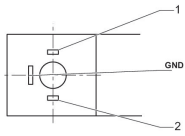
Dimensions



- 1) Port 1 (Input)
- 2) Port 2 (Working pressure)
- 3) Port 3 (Exhaust)
- 4) External pilot G1/8
- 5) Silencer not included in scope of delivery

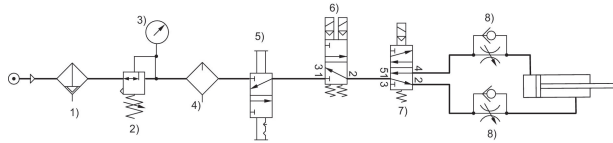
R412027208, R412027209

Valve plug connector form C



- 1) + 24 / 0 VDC
- 2) 0 / + 24 VDC

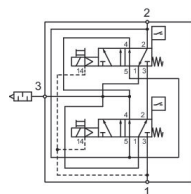
Safe air supply and exhaust via 3/2 directional valve



- 1) Filter 2) Pressure regulator 3) Pressure gauge 4) Lubricator 5) Lockout valve 6) Safety exhaust valve, SV series 7) 5/2 pilot valve 8) Check-choke valve

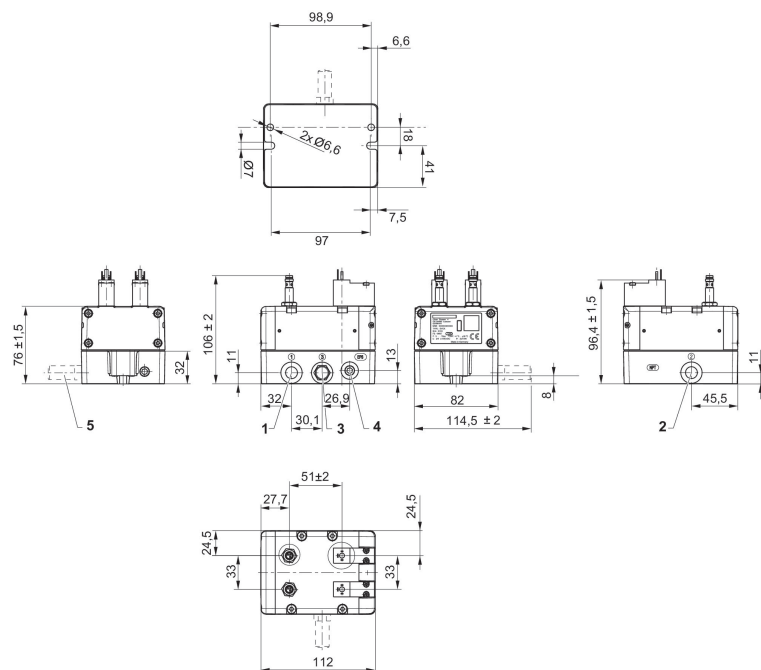
3/2 directional safety valve, Series SV03

Activation: Electrically
 Actuating control: Double Solenoid
 Standards: ISO 13849-1, category 4, performance level: e (possible)
 Min. control pressure: 3 bar
 Min. control pressure: 10 bar



Compressed air connection input	Pilot	Power consumption DC [W]	Part No.
G 1/4	Internal	1.5	R412027212
1/4 NPT	Internal	1.5	R412027213

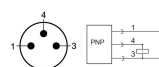
Dimensions



- 1) Port 1 (Input)
- 2) Port 2 (Working pressure)
- 3) Port 3 (Exhaust)
- 4) External pilot G1/4
- 5) Silencer not included in scope of delivery

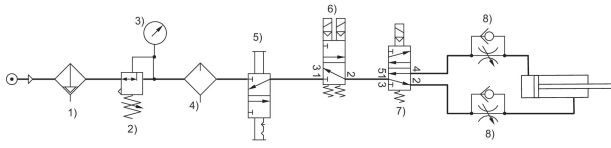
R412027212, R412027213

PIN assignment sensor, plug M8



- 1) + 20 ... + 28 VDC
- 3) 0 VDC
- 4) OUT

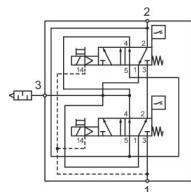
Safe air supply and exhaust via 3/2 directional valve



1) Filter 2) Pressure regulator 3) Pressure gauge 4) Lubricator 5) Lockout valve 6) Safety exhaust valve, SV series 7) 5/2 pilot valve 8) Check-choke valve

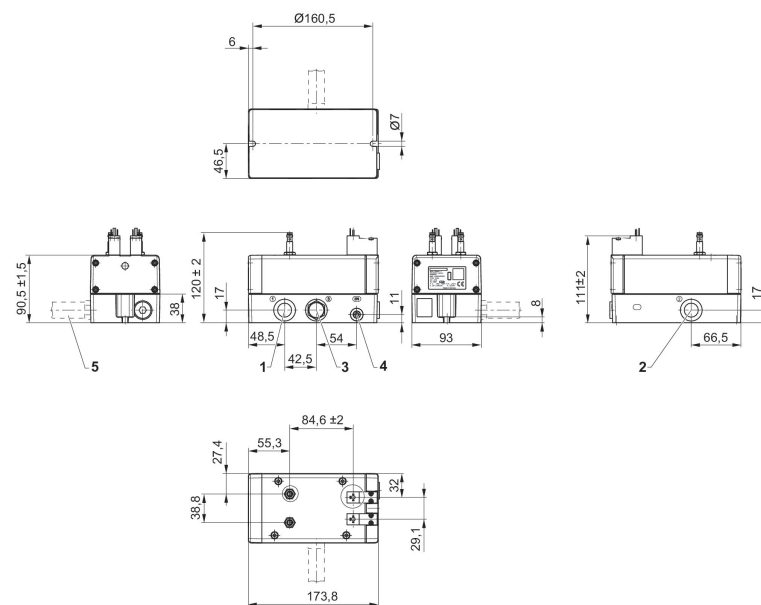
3/2 directional safety valve, Series SV05

Activation: Electrically
 Actuating control: Double Solenoid
 Standards: ISO 13849-1, category 4, performance level: e (possible)
 Min. control pressure: 3 bar
 Min. control pressure: 10 bar
 Type: Double spool valve



Compressed air connection input	Power consumption DC [W]	Part No.
G 1/2	1.5	R412027216
1/2 NPT	1.5	R412027217

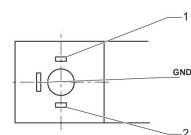
Dimensions



- 1) Port 1 (Input)
- 2) Port 2 (Working pressure)
- 3) Port 3 (Exhaust)
- 4) External pilot G1/8
- 5) Silencer not included in scope of delivery

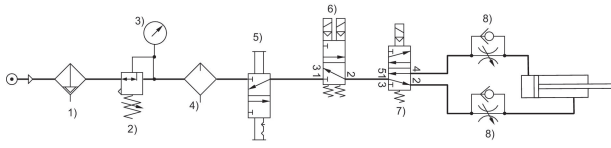
R412027216, R412027217

Valve plug connector form C



- 1) + 24 / 0 VDC
- 2) 0 / + 24 VDC

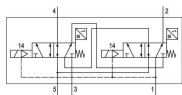
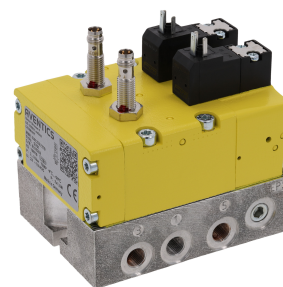
Safe air supply and exhaust via 3/2 directional valve



- 1) Filter 2) Pressure regulator 3) Pressure gauge 4) Lubricator 5) Lockout valve 6) Safety exhaust valve, SV series 7) 5/2 pilot valve 8) Check-choke valve

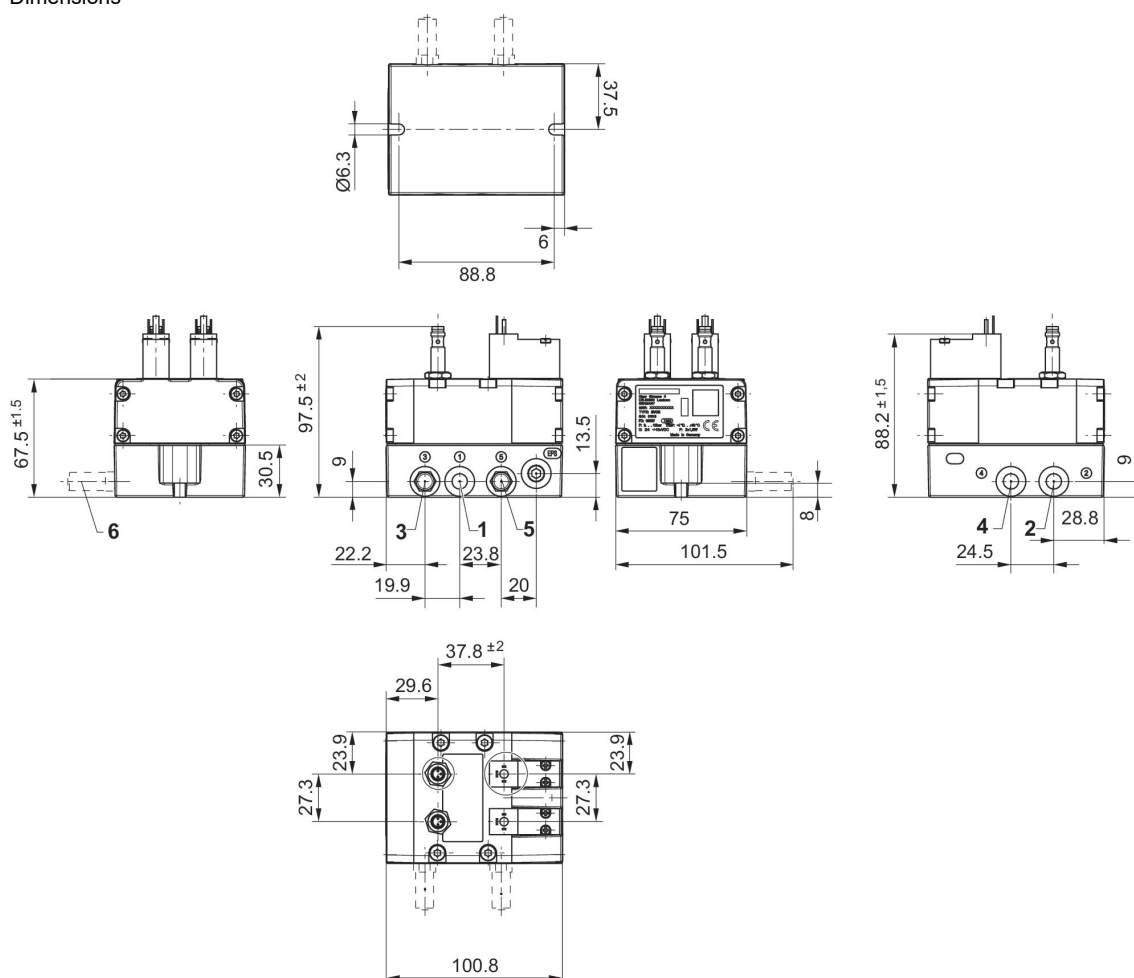
5/2 directional safety valve, Series SV01

Activation: Electrically
 Actuating control: Double Solenoid
 Standards: ISO 13849-1, category 4, performance level: e (possible)
 Min. control pressure: 3 bar
 Min. control pressure: 10 bar
 Type: Double spool valve



Compressed air connection input	Pilot	Power consumption DC [W]	Part No.
G 1/8	Internal	1.5	R412027210
1/8 NPT	Internal	1.5	R412027211

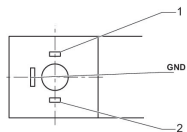
Dimensions



- 1) Port 1 (Input)
- 2) Port 2 (Output)
- 3) Port 3 (Exhaust)
- 4) Port 4 (Output)
- 5) Port 5 (Exhaust)
- 6) Silencer not included in scope of delivery

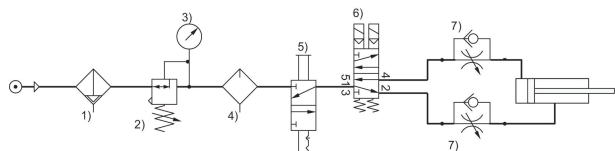
R412027210, R412027211

Valve plug connector form C



- 1) + 24 / 0 VDC
- 2) 0 / + 24 VDC

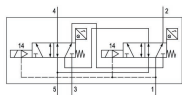
Safe air supply and cylinder return via 5/2 directional valve



- 1) Filter 2) Pressure regulator 3) Pressure gauge 4) Lubricator 5) Lockout valve 6) Safety valve, Series SV 7) Check-choke valve

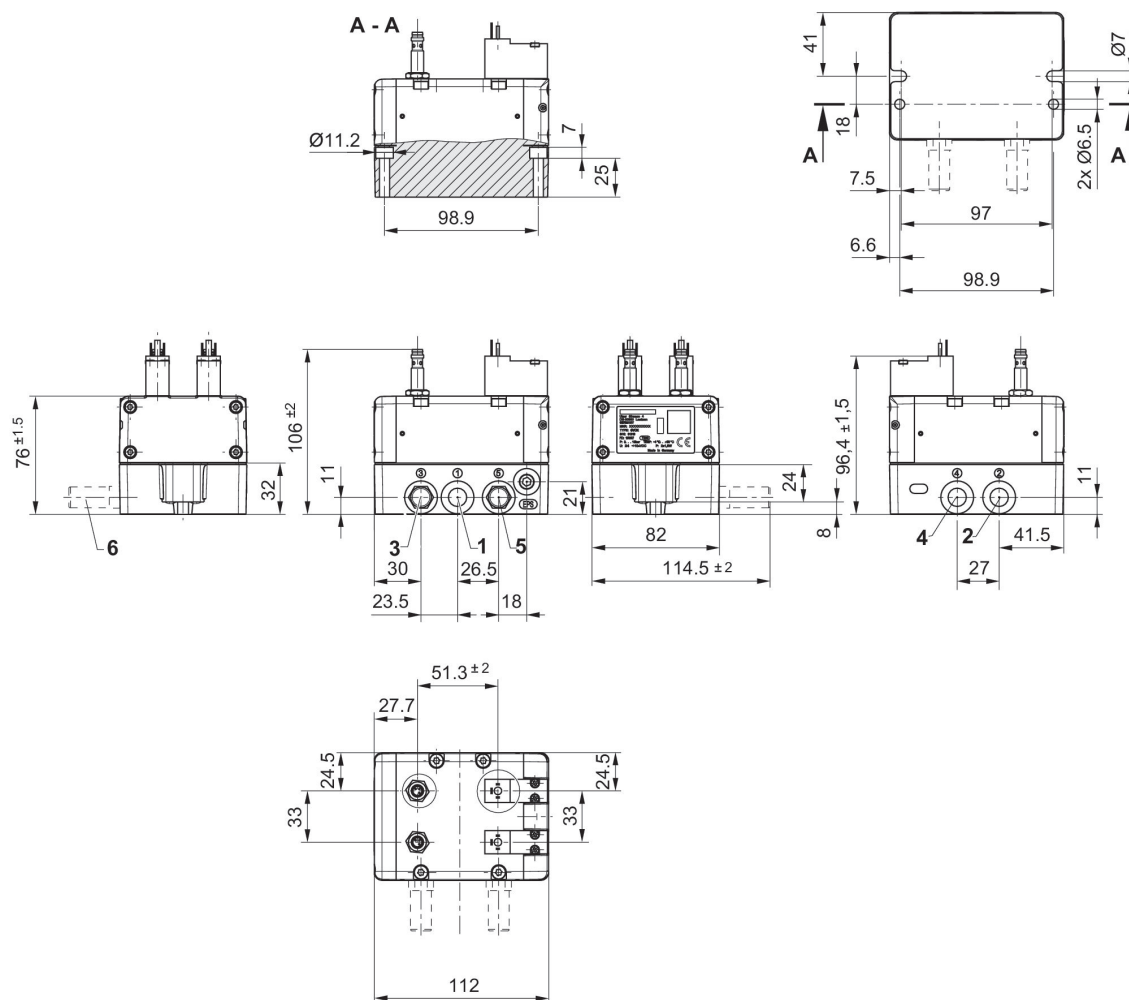
5/2 directional safety valve, Series SV03

Activation: Electrically
 Actuating control: Double Solenoid
 Standards: ISO 13849-1, category 4, performance level: e (possible)
 Type: Double spool valve



Compressed air connection input	Pilot	Power consumption DC [W]	Part No.
G 1/4	Internal	1.5	R412027214
1/4 NPT	Internal	1.5	R412027215

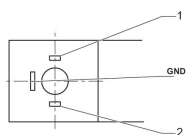
Dimensions



- 1) Port 1 (Input)
- 2) Port 2 (Output)
- 3) Port 3 (Exhaust)
- 4) Port 4 (Output)
- 5) Port 5 (Exhaust)
- 6) Silencer not included in scope of delivery

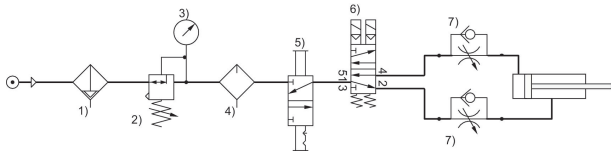
R412027214, R412027215

Valve plug connector form C



- 1) + 24 / 0 VDC
- 2) 0 / + 24 VDC

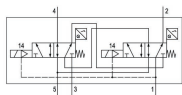
Safe air supply and cylinder return via 5/2 directional valve



- 1) Filter 2) Pressure regulator 3) Pressure gauge 4) Lubricator 5) Lockout valve 6) Safety valve, Series SV 7) Check-choke valve

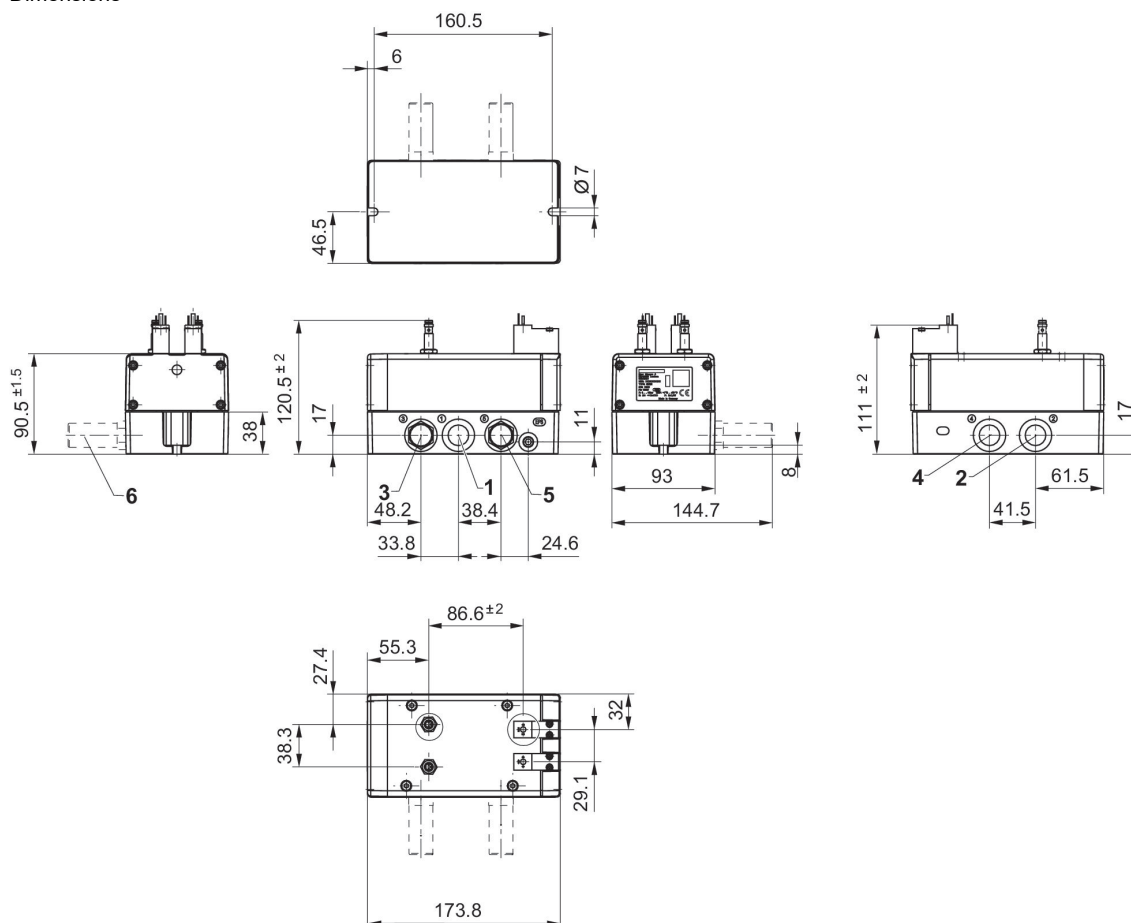
5/2 directional safety valve, Series SV05

Activation: Electrically
 Actuating control: Double Solenoid
 Standards: ISO 13849-1, category 4, performance level: e (possible)
 Min. control pressure: 3 bar
 Min. control pressure: 10 bar
 Type: Double spool valve



Compressed air connection input	Pilot	Power consumption DC [W]	Part No.
G 1/2	Internal	1.5	R412027218
1/2 NPT	Internal	1.5	R412027219

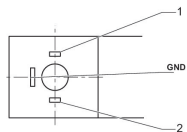
Dimensions



- 1) Port 1 (Input)
- 2) Port 2 (Output)
- 3) Port 3 (Exhaust)
- 4) Port 4 (Output)
- 5) Port 5 (Exhaust)
- 6) Silencer not included in scope of delivery

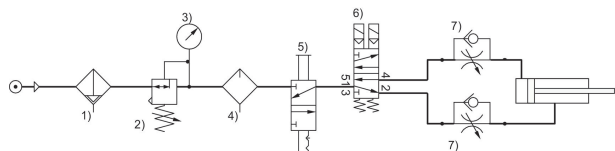
R412027218, R412027219

Valve plug connector form C



- 1) + 24 / 0 VDC
- 2) 0 / + 24 VDC

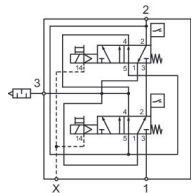
Safe air supply and cylinder return via 5/2 directional valve



- 1) Filter 2) Pressure regulator 3) Pressure gauge 4) Lubricator 5) Lockout valve 6) Safety valve, Series SV 7) Check-choke valve

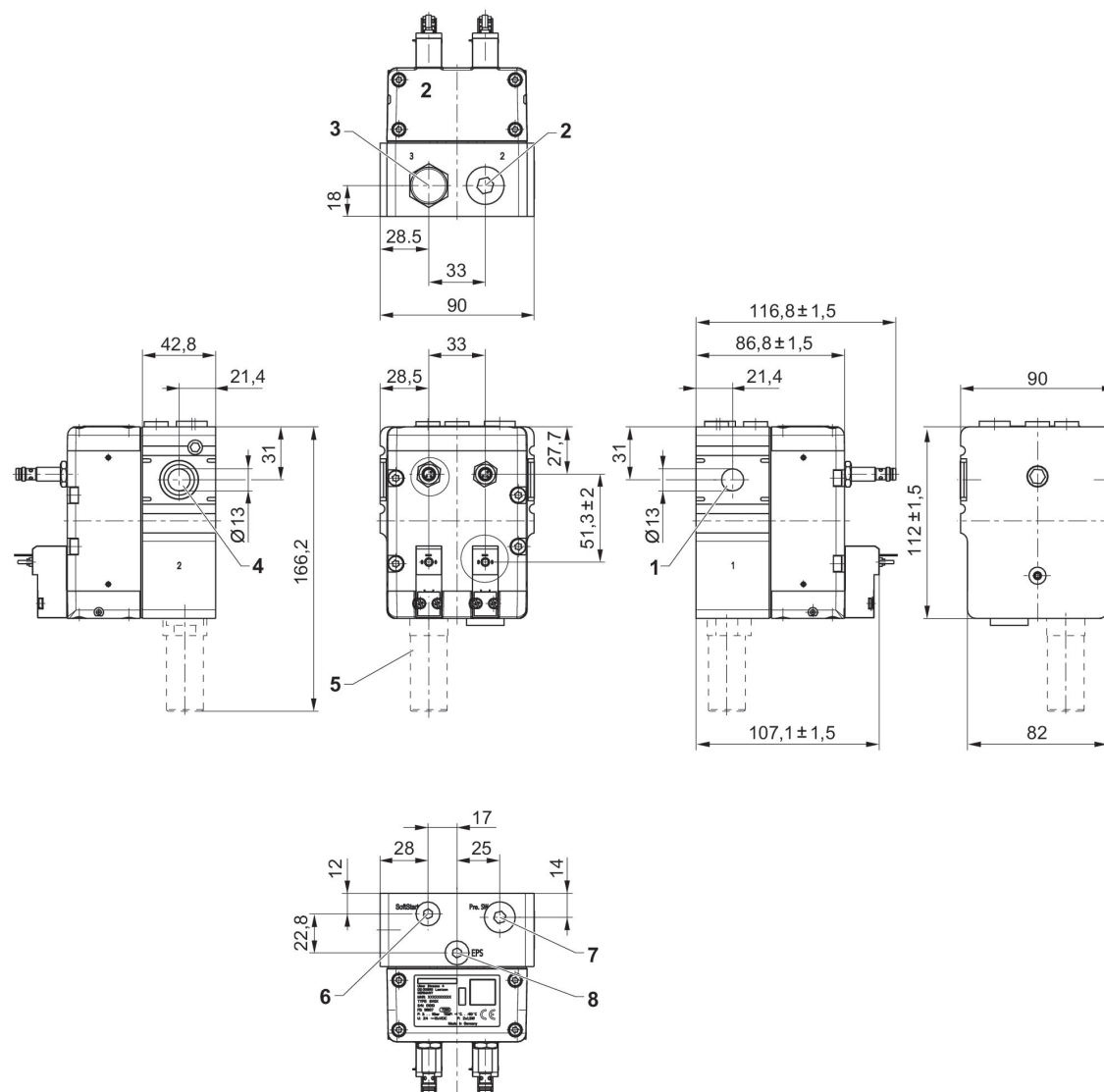
3/2 directional safety valve, Series SV03-AS2, external

Activation: Electrically
 Actuating control: Double Solenoid
 Standards: ISO 13849-1, category 4, performance level: e (possible)
 Min. control pressure: 3 bar
 Min. control pressure: 10 bar



Compressed air connection input	Pilot	Power consumption DC [W]	Part No.
Ø 13	External	1.5	R412028207

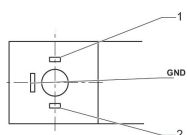
Dimensions



- 1) Port 1 (Input)
- 2) Port 2 (Output)
- 3) Port 3 (Exhaust)
- 4) Silencer
- 5) Silencer not included in scope of delivery
- 6) Connection for soft start with plug G1/8
- 7) Connection for pressure switch with plug G1/4
- 8) Connection for external pilot supply with plug G1/8

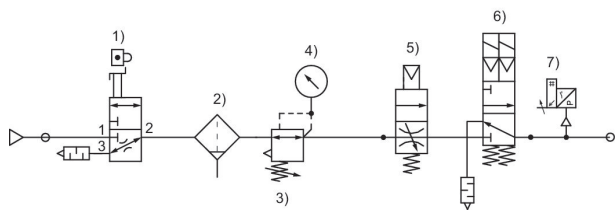
R412028207

Valve plug connector form C



- 1) + 24 / 0 VDC
- 2) 0 / + 24 VDC

Safe air supply and exhaust valve compatible with soft-start function



- 1) Lockout valve
- 2) Filter
- 3) Pressure regulator
- 4) Pressure gauge
- 5) Soft-start valve
- 6) Safety exhaust valve SV03-AS2
- Soft-start function
- 7) Pressure Switches

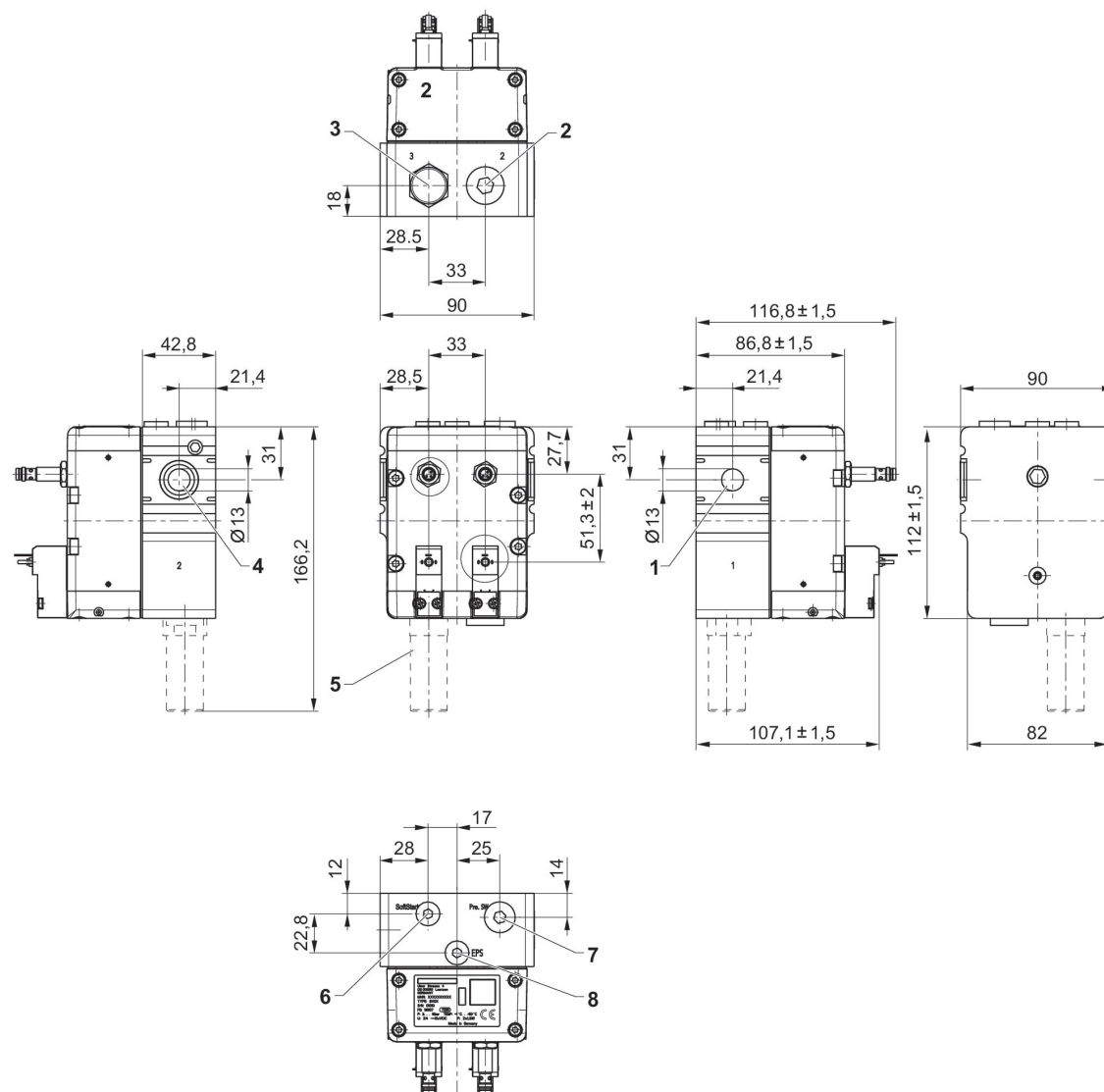
3/2 directional safety valve, Series SV03-AS2, internal

Activation: Electrically
 Actuating control: Double Solenoid
 Standards: ISO 13849-1, category 4, performance level: e (possible)
 Min. control pressure: 3 bar
 Min. control pressure: 10 bar



Compressed air connection input	Pilot	Power consumption DC [W]	Part No.
Ø 13	Internal	1.5	R412027220

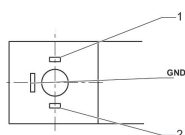
Dimensions



- 1) Port 1 (Input)
- 2) Port 2 (Output)
- 3) Port 3 (Exhaust)
- 4) Silencer
- 5) Silencer not included in scope of delivery
- 6) Connection for soft start with plug G1/8
- 7) Connection for pressure switch with plug G1/4
- 8) Connection for external pilot supply with plug G1/8

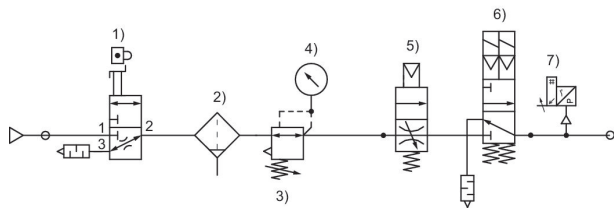
R412027220

Valve plug connector form C



- 1) + 24 / 0 VDC
- 2) 0 / + 24 VDC

Safe air supply and exhaust valve compatible with soft-start function



- 1) Lockout valve
- 2) Filter
- 3) Pressure regulator
- 4) Pressure gauge
- 5) Soft-start valve
- 6) Safety exhaust valve SV03-AS2
- Soft-start function
- 7) Pressure Switches

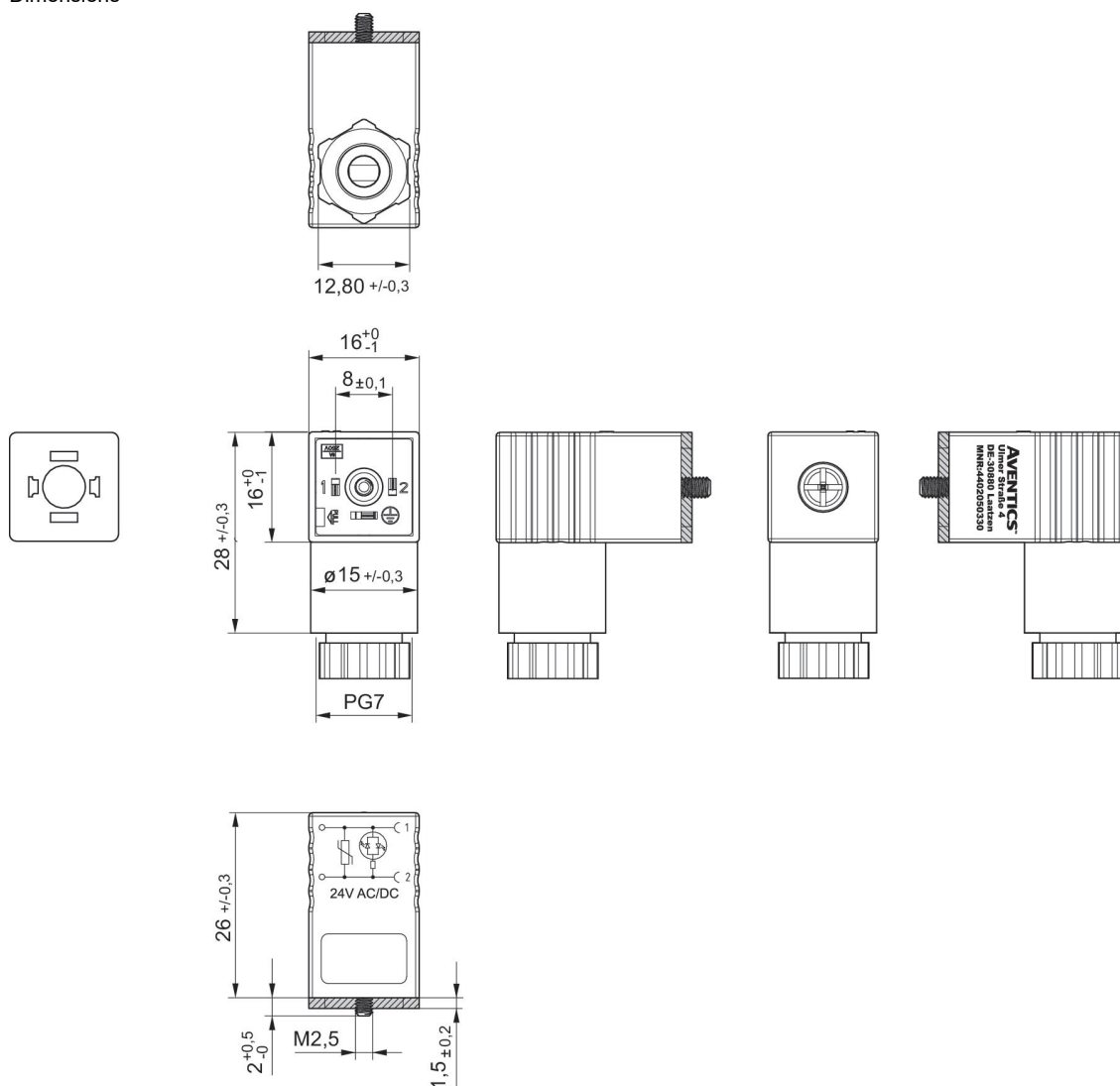
Valve plug connector, series CON-VP, 24 V AC/DC

Electrical connection 1, thread size: EN 175301-803, form C



Operational voltage	Protective circuit	Max. current [A]	Contact assignment	LED status display	min. suitable cable Ø [mm]	max. suitable cable Ø [mm]	Part No.
24 V AC/DC	Varistor	1.5	2+E	Green	4	6	4402050330

Dimensions



Flat gasket

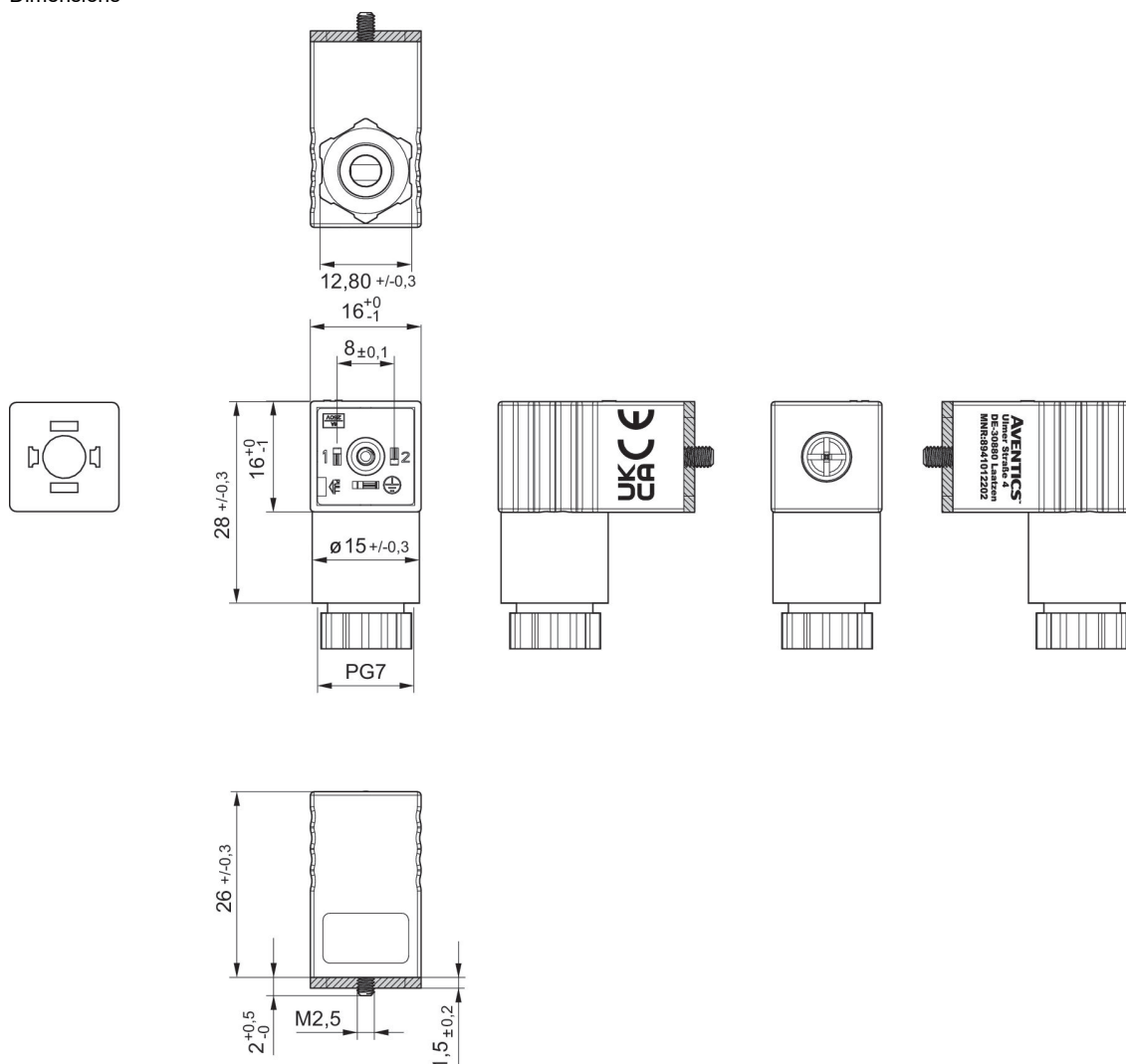
Valve plug connector, series CON-VP, 300 V DC / 250 V AC

Electrical connection 1, thread size: EN 175301-803, form C
Certificates: CE declaration of conformity UKCA



Operational voltage	Max. current [A]	Contact assignment	min. suitable cable Ø [mm]	max. suitable cable Ø [mm]	Part No.
300 V DC / 250 V AC	6	2+E	4	6	8941012202

Dimensions



Flat gasket

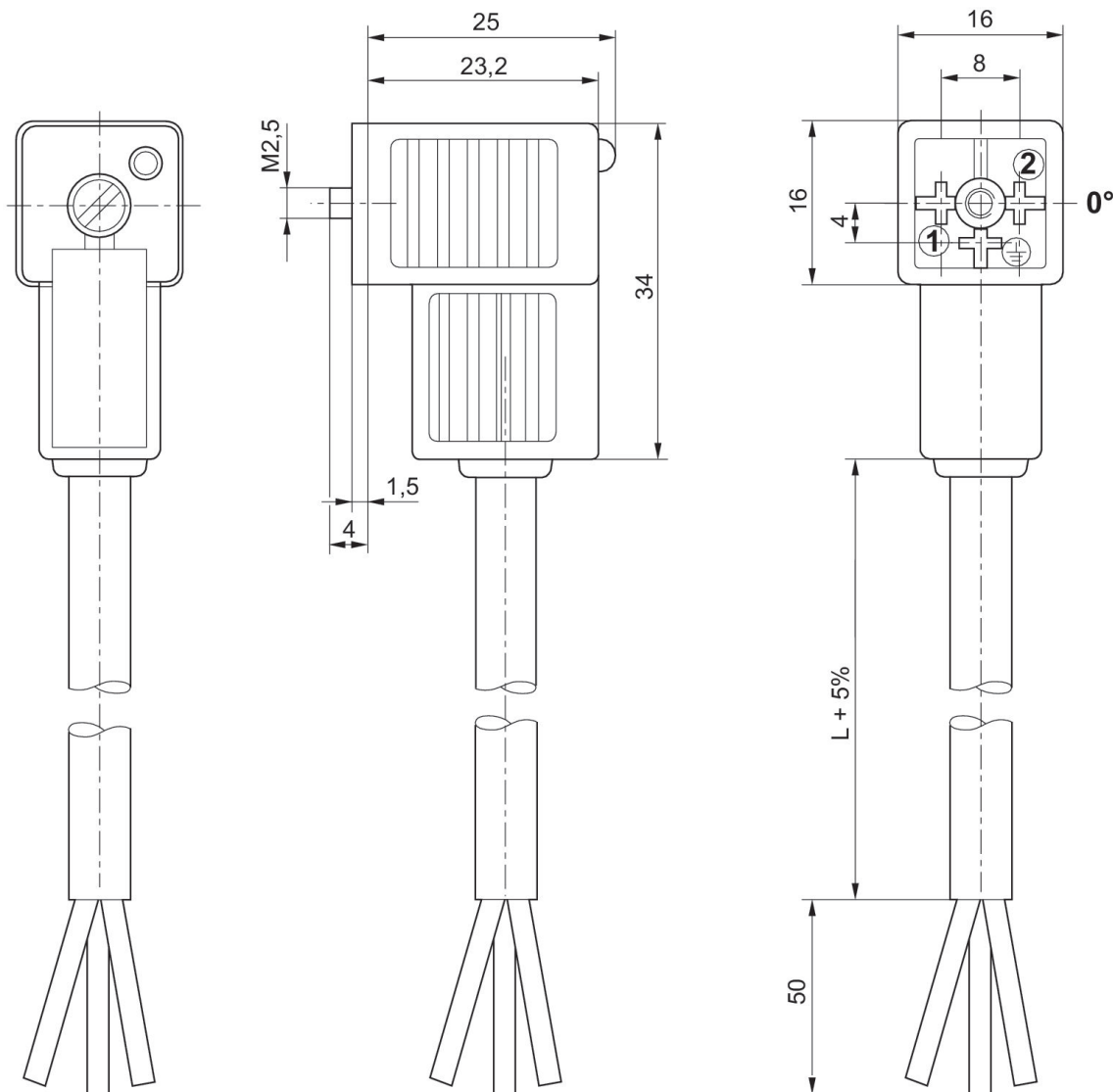
Valve plug connector, series CON-VP, 0° female insert

Electrical connection 1, thread size: form C



Operational voltage	Protective circuit	Max. current [A]	Contact assignment	LED status display	Cable-Ø [mm]	Cable length [m]	Part No.
230 V AC/DC		6	2+E		5.9	3	1834484212
230 V AC/DC		6	2+E		5.9	5	1834484214
24 V AC/DC	Z-diode	6	2+E	Yellow	5.9	3	1834484204
24 V AC/DC	Z-diode	6	2+E	Yellow	5.9	5	1834484206
230 V AC/DC	Varistor	6	2+E	Yellow	5.9	3	1834484208
230 V AC/DC	Varistor	6	2+E	Yellow	5.9	5	1834484210

Dimensions



0° female insert

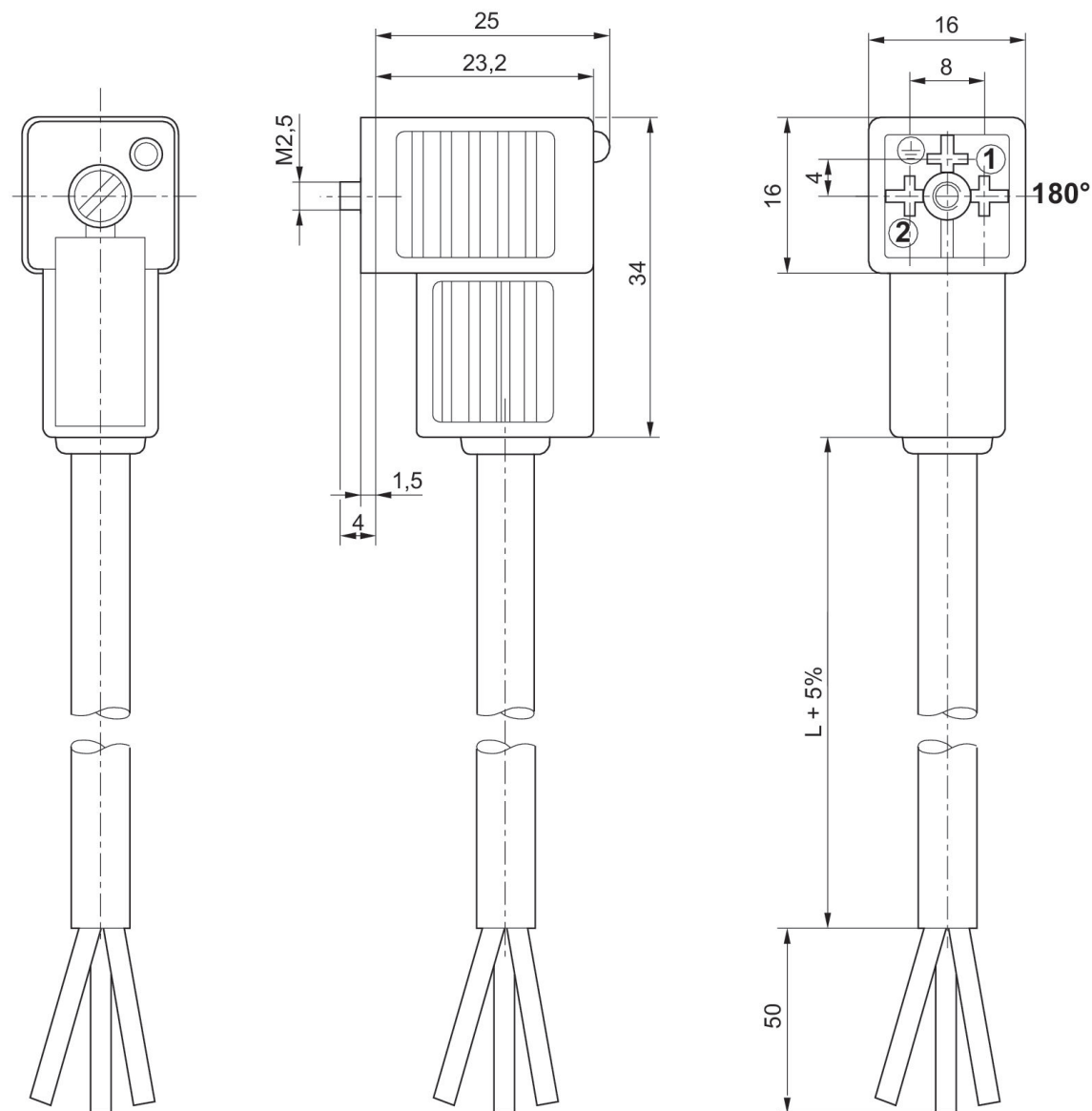
Valve plug connector, series CON-VP, 180° female insert

Electrical connection 1, thread size: form C



Operational voltage	Protective circuit	Max. current [A]	Contact assignment	LED status display	Cable-Ø [mm]	Cable length [m]	Part No.
230 V AC/DC		6	2+E		5.9	3	1834484213
230 V AC/DC		6	2+E		5.9	5	1834484215
24 V AC/DC	Z-diode	6	2+E	Yellow	5.9	3	1834484205
24 V AC/DC	Z-diode	6	2+E	Yellow	5.9	5	1834484207
230 V AC/DC	Varistor	6	2+E	Yellow	5.9	3	1834484209
230 V AC/DC	Varistor	6	2+E	Yellow	5.9	5	1834484211
24 V AC/DC	Z-diode	6	2+E	Yellow	5.9	10	1834484236

Dimensions



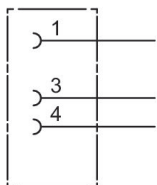
180° female insert

Round plug connector, Series CON-RD, straight

Electrical connection 1, type: Socket

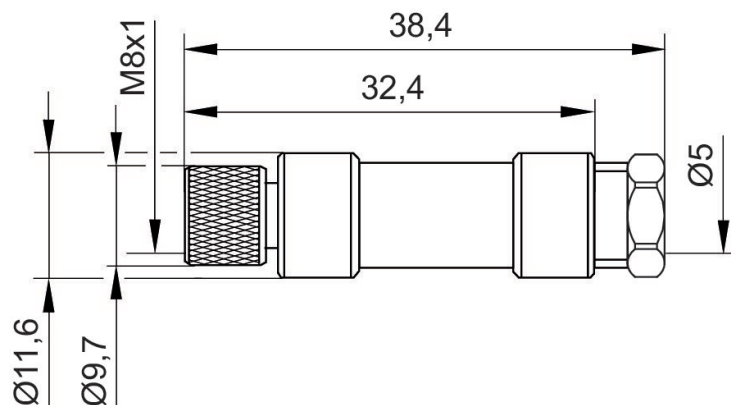
Electrical connection 1, thread size: M8x1

Electrical connection 1, number of poles: 3-pin



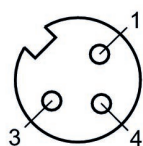
Operational voltage	Contact assignment	Coding	Shielding	Connection type	Max. current [A]	min. suitable cable Ø [mm]	max. suitable cable Ø [mm]	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
48 V AC/DC	3-pin	A-coded	unshielded	Soldering	4	3.5	5	-25	80	1834484173

Dimensions



1834484173

Pin assignment, socket

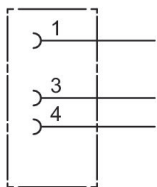


Round plug connector, Series CON-RD, angled

Electrical connection 1, type: Socket

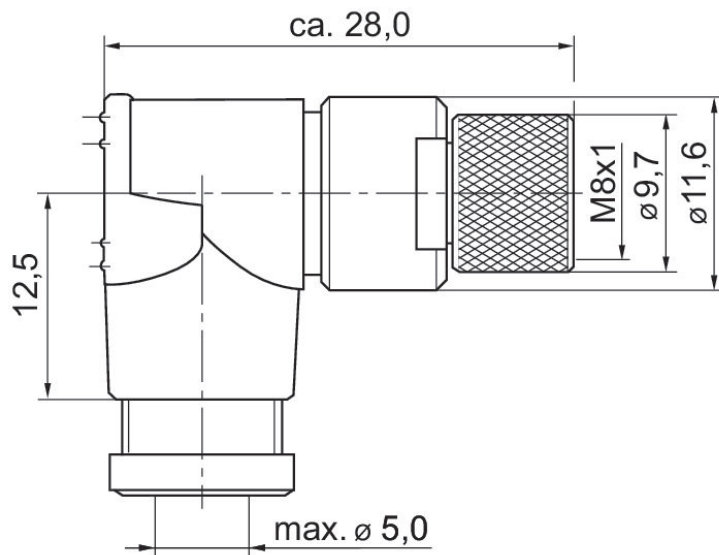
Electrical connection 1, thread size: M8x1

Electrical connection 1, number of poles: 3-pin



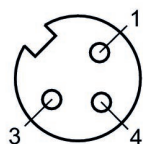
Operational voltage	Contact assignment	Coding	Shielding	Connection type	Max. current [A]	min. suitable cable Ø [mm]	max. suitable cable Ø [mm]	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
48 V AC/DC	3-pin	A-coded	unshielded	Soldering	4	3.5	5	-40	85	1834484174

Dimensions in mm



1834484174

Pin assignment, socket



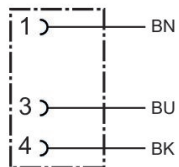
Round plug connector, Series CON-RD, open cable ends, straight

Electrical connection 1, type: Socket

Electrical connection 2, type: open cable ends

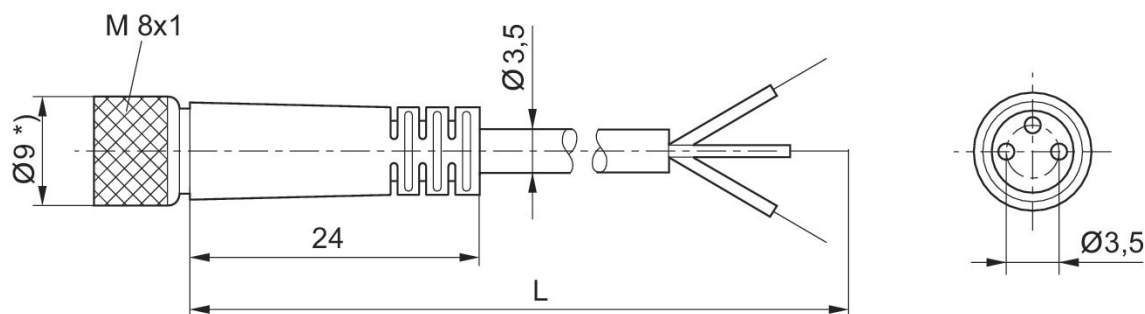
Electrical connection 1, thread size: M8x1

Electrical connection 1, number of poles: 3-pin



Operational voltage	Current [A]	Shielding	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, coding	Electrical connection 2, type	Cable length [m]	Cable-Ø [mm]	Wire cross-section [mm²]	Part No.
36 V DC / 30 V AC	2.5	unshielded	Socket	M8x1	A-coded	open cable ends	2	3.5	0.34	8946201312
60 V DC / 110 V AC	2.5	unshielded	Socket	M8x1	A-coded	open cable ends	15	3.5	0.34	8946201332

Dimensions

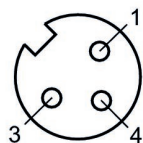


L = length

*) With 15 m cable length Ø12

8946201312, 8946201332

Pin assignment, socket



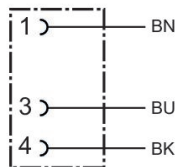
(1) BN=brown (3) BU=blue (4) BK=black

Round plug connector, Series CON-RD, open cable ends, angled

Electrical connection 1, type: Socket

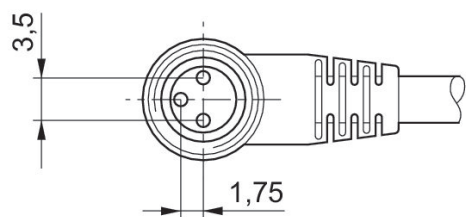
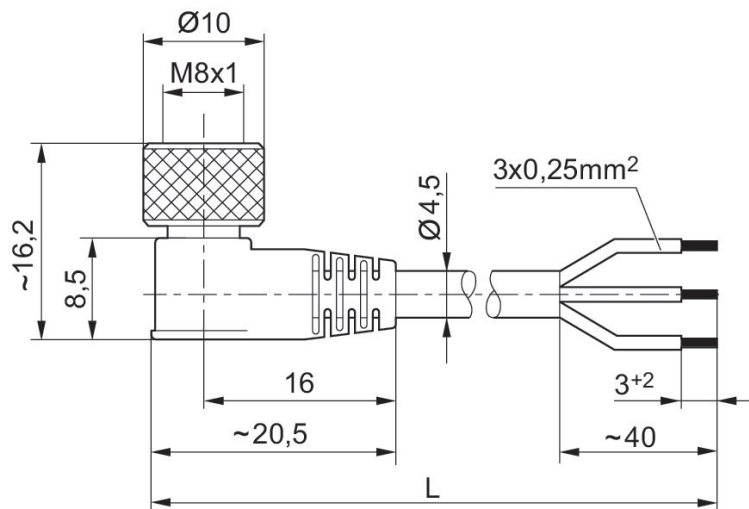
Electrical connection 1, thread size: M8x1

Electrical connection 1, number of poles: 3-pin



Operational voltage	Current [A]	Shielding	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, coding	Electrical connection 2, type	Cable length [m]	Cable-Ø [mm]	Wire cross-section [mm²]	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
48 V AC/DC	4	unshielded	Socket	M8x1	A-coded	open cable ends	3	4.5	0.24	-40	85	1834484167
48 V AC/DC	4	unshielded	Socket	M8x1	A-coded	open cable ends	5	4.5	0.24	-40	85	1834484169
48 V AC/DC	4	unshielded	Socket	M8x1	A-coded	open cable ends	10	4.5	0.24	-40	85	1834484248

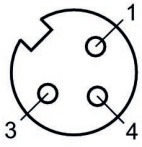
Dimensions



L = length

1834484167, 1834484169, 1834484248

Pin assignment, socket



(1) BN=brown (3) BU=blue (4) BK=black

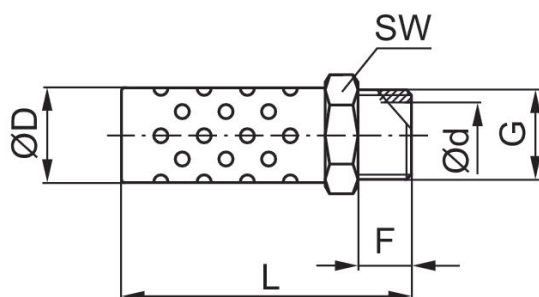
Silencers, series SI1, Metal braiding

Compressed air connection type: External thread
Silencer material: Metal braiding



G	Sound pressure level [dB]	Nominal flow [l/min]	Delivery unit [piece]	Part No.
G 1/4	96	2687	10	R412010245

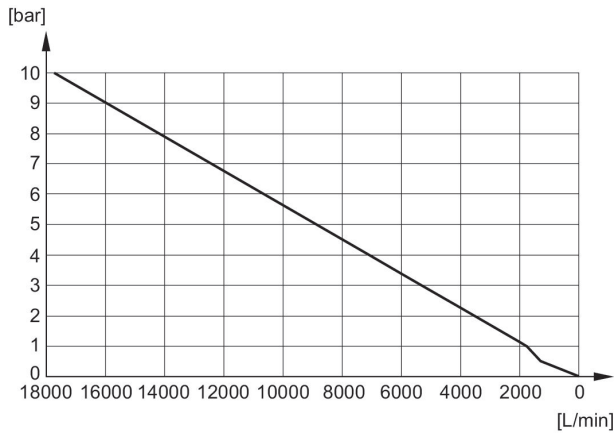
Dimensions



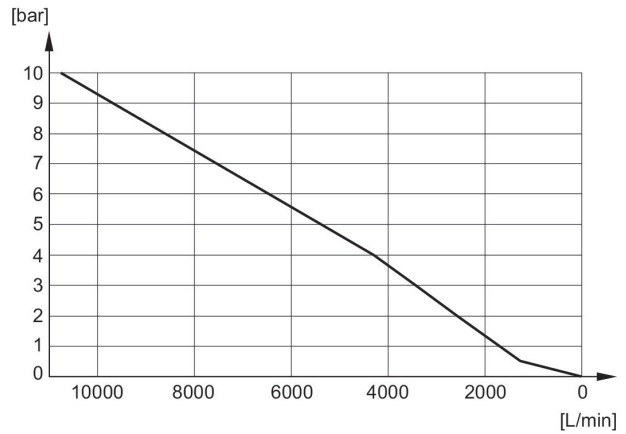
Part No.	Port G	L	F	D	d	SW
R412010283	G 1/8	33.5	6	10.4	6	11
R412010245	G 1/4	42.5	8.5	13.4	8.5	14
R412010246	G 3/8	49.2	9	16.5	12	17
R412010247	G 1/2	65.2	11	21.5	15	22
R412010248	G 3/4	74.5	12	26.5	20	27
R412010249	G 1	91	15.5	32.3	26	34

Sound pressure level measured at 6 bar at 1 m distance

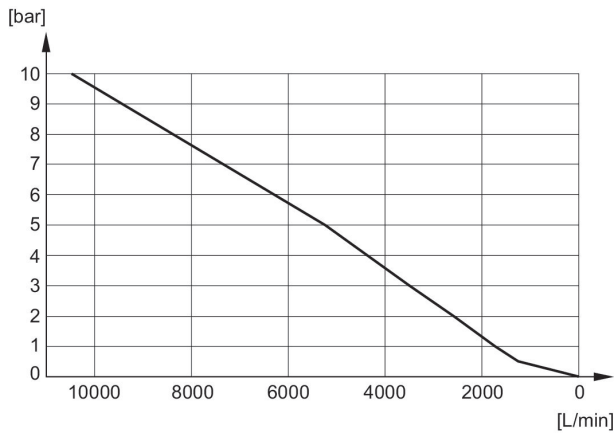
Flow diagram



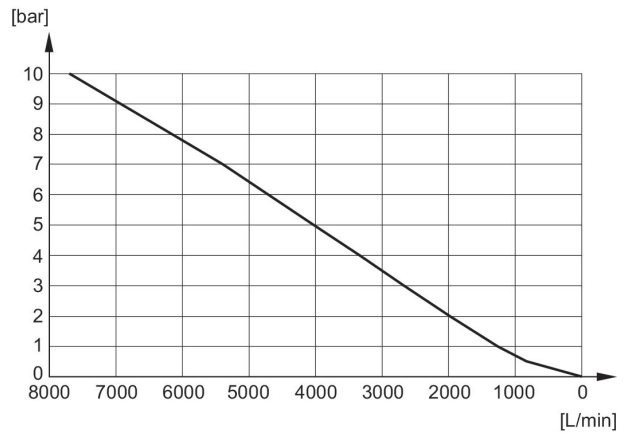
Flow diagram



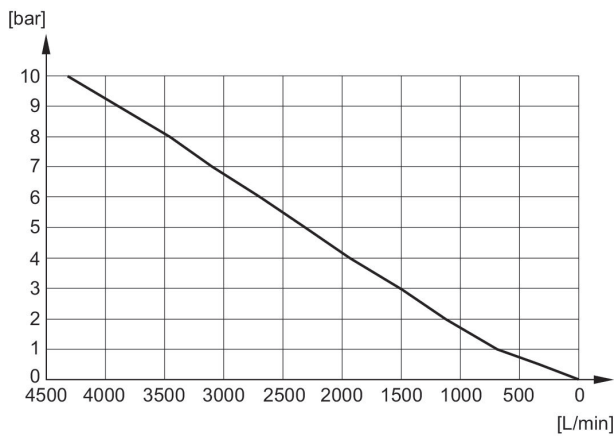
Flow diagram



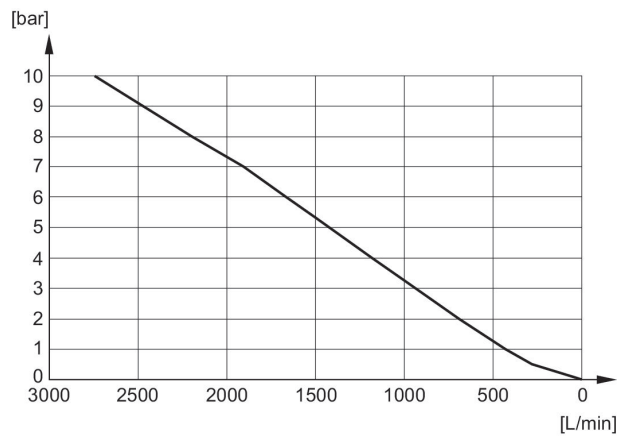
Flow diagram



Flow diagram







Flow diagram



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air supply management, proportional pressure
control valves



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