

AVENTICS™ PROPORTIONAL VALVE SENTRONIC^{PLUS}

DIGITAL ELECTRONIC PRESSURE REGULATOR

SERIES
614

- SENTRONIC^{PLUS} is a highly dynamic 3/2-way proportional valve with digital control
- SENTRONIC^{PLUS} stands for:
 - Digital communication and control
 - Direct operated valve
 - Dynamic behaviour (high speed)
 - Exhausting without power supply
- A special feature of the Sentronic^{PLUS} is its DaS software supplied for optimum adjustment over PC and viewing of setpoint and feedback signals. Other functions are valve diagnostics, parameter setting and maintenance.



| General Valve Information | |
|----------------------------------|--|
| Fluids | Compressed air or inert gases, compressed air according to ISO 8573-1:2010 [7:4:4] |
| Ports | G/NPT 1/8 - 1/4 - 1/2 - 1 |
| Max. allowable pressure | see "How to Order" |
| Pressure range | see "How to Order" |
| Fluid temperature | 0...60 °C |
| Ambient temperature | 0...60 °C |
| Setpoint - analog | 0 - 10 V (impedance 100 KΩ) 0 - 20 mA/4 - 20 mA (impedance 250 Ω) |
| Hysteresis | 0.5 % of span |
| Linearity / pressure measurement | ± 0.5 % of span |
| Repeatability | ± 0.5 % of span |

| Explosion Safety | |
|------------------|--|
| Safety code | Ex II 3D Ex tc IIIC T135 °C Dc X Ex II 3G EX ec IIC T4 Gc X, 0 ≤ Ta ≤ +50 °C |

| Construction | |
|-------------------|---------------------------|
| Body | see "How to Order" |
| Internal parts | Stainless steel and brass |
| Seals | FKM and NBR |
| Note on materials | RoHS compliant |

| Electrical Characteristics | | | | | | |
|----------------------------|-----------------|----------------|-------------------|------------------|----------------------|---|
| Nominal Diameter DN | Voltage * | Max. Power (W) | Max. Current (mA) | Insulation Class | Degree of Protection | Electrical Connection |
| 1 | 24VDC +/-10% | 12 | 500 | F | IP65 | 7-pin M16 connector (included) or 5-pin connector M12 (to be ordered separately) |
| 3 | | 12 | 500 | | | |
| 6 | | 24 (2) | 1000 (2) | | | |
| 12 | | 34 | 1400 | | | |
| 20 | | 44 | 1800 | | | |

* Max. ripple: 10 %

| Specifications | | | | |
|----------------|--------------|------------------------|------|---------|
| Pipe Size | Orifice Size | Flow at 6 bar | | |
| | mm (inches) | Coefficient | | (l/min) |
| | | Kv (m ³ /h) | Cv | |
| G/NPT 1/8 | 1 | 0.05 | 0.06 | 55 |
| G/NPT 1/8 | 3 | 0.13 | 0.15 | 150 |
| G/NPT 1/4 | 6 | 0.60 | 0.69 | 700 |
| G/NPT 1/2 | 12 | 1.20 | 1.39 | 1400 |
| G/NPT 1 | 20 | 4.80 | 5.55 | 5600 |

How To Order

Catalog Number

6 1 4 3 5 7 B A S I D P P

B: CONTROL PANEL

- A = M12 without display - non-explosionproof
- D = M12 with display - non-explosionproof
- E = M12 without display - explosionproof (ATEX)
- F = DIN connector, 7-pin, with display - non-explosionproof
- G = DIN connector, 7-pin without display - non-explosionproof

A: VERSION (ports), body

- | | |
|-------------------------|--------------------------------------|
| 0 = DN6 (G 1/4), Alu | 7 = DN3 (G 1/8), Brass |
| 1 = DN12 (G 1/2), Alu | 8 = DN6 (G 1/4), Brass |
| 2 = DN20 (G 1), Alu | 9 = DN3 (NPT 1/8), Brass |
| 4 = DN6 (NPT 1/4), Alu | A = DN6 (NPT 1/4"), Brass |
| 5 = DN12 (NPT 1/2), Alu | C = DN6 (G 1/4), Stainless Steel |
| 6 = DN20 (NPT 1), Alu | H = DN6 (G 1/4), Brass ²⁾ |
| | J = DN1 (G1/8), Brass |

S: SETPOINT

- 0 = 0 ... 10 Volt
- 1 = 0 ... 20 mA
- 2 = 4 ... 20 mA

I: FEEDBACK

- 1 = Feedback output 0 ... 10 Volt
- 2 = Feedback output 0 ... 20 mA
- 3 = Feedback output 4 ... 20 mA
- 4 = Feedback input 0 ... 10 Volt
- 5 = Feedback input 0 ... 20 mA
- 6 = Feedback input 4 ... 20 mA

PP: PRESSURE RANGE ³⁾

| Relative pressure (bar) | Max. allowable pressure (bar) | Vacuum (relative) |
|-------------------------------|-------------------------------|---|
| 40 = 0 - 100 mbar | 2 | V1 = 0 ... -1 bar shut-off valve (vacuum at port 3) |
| 50 = 0 - 500 mbar | 2 | V2 = 0 ... -1 bar Bypass version |
| 60 = 0 - 1 bar | 2 | V3 = 0 ... -1 bar shut-off valve (vacuum at port 1) |
| 02 = 0 - 2 bar | 3 | |
| 03 = 0 - 3 bar | 8 | |
| 05 = 0 - 5 bar | 8 | |
| 06 = 0 - 6 bar | 12 | |
| 10 = 0 - 10 bar | 12 | |
| 12 = 0 - 12 bar | 14 | |
| 16 = 0 - 16 bar ¹⁾ | 18 | |
| 20 = 0 - 20 bar ¹⁾ | 22 | |
| 3H = 0 - 30 bar ²⁾ | 40 | |
| 5H = 0 - 50 bar ²⁾ | 60 | |
| PA = 0-50 psi | 116 psi | |
| PB = 0-100 psi | 125 psi | |
| PC = 0-150 psi | 174 psi | |
| PD = 0-200 psi ¹⁾ | 261 psi | |
| PE = 0-250 psi ¹⁾ | 275 psi | |
| PF = 0-300 psi ¹⁾ | 319 psi | |
| PG = 0-350psi ²⁾ | 377 psi | |

Notes:

- 1) Only for DN1, DN3 and DN 6
- 2) Only for DN6, brass / 1,8 A 44 W
Other versions available on request.
- 3) Other pressure ranges on request

D: DIGITAL OUTPUT

- 1 = Pressure switch output
PNP ± 5 %

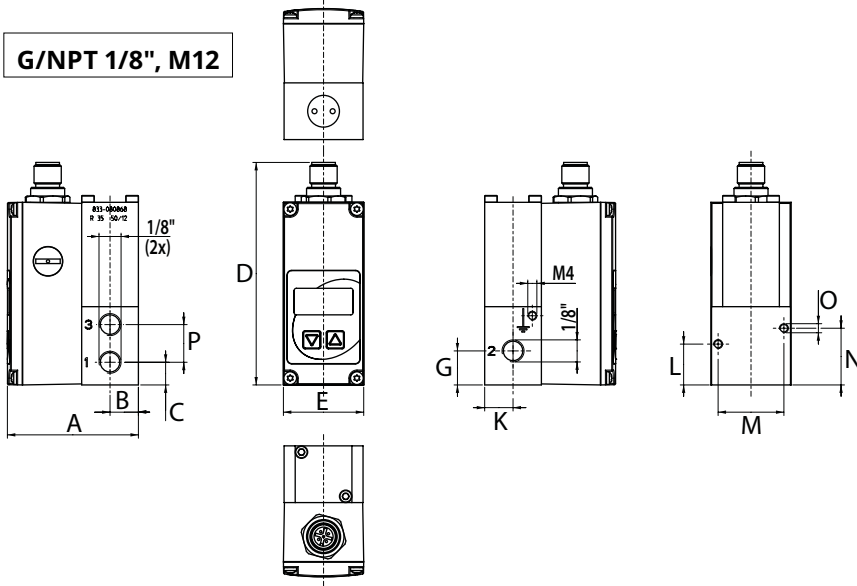
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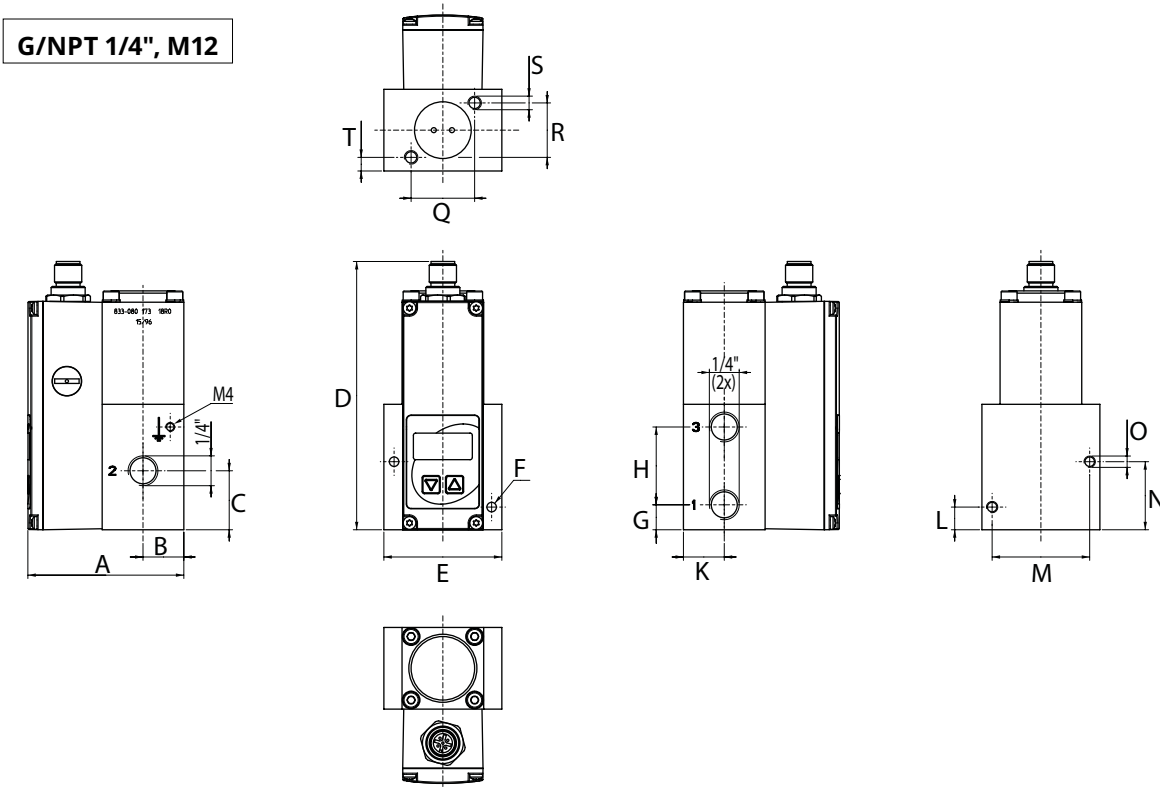
Dimensions: mm (inches)

G/NPT 1/8", M12



| A | B | C | D | E | G | K | L | M | N | O | P | Weight kg |
|------------------|-----------------|---------------|-----------------|-----------------|---------------|-----------------|---------------|---------------|---------------|-----------------------|-----------------|-----------|
| 57.75 (2.274) | 12.5 (0.492) | 10 (0.394) | 98.1 (3.862) | 35.4 (1.394) | 15 (0.591) | 12.5 (0.492) | 18 (0.709) | 29 (1.142) | 25 (0.984) | M4x10 (0.394) (2x) | 16.6 (0.654) | 0.600 |

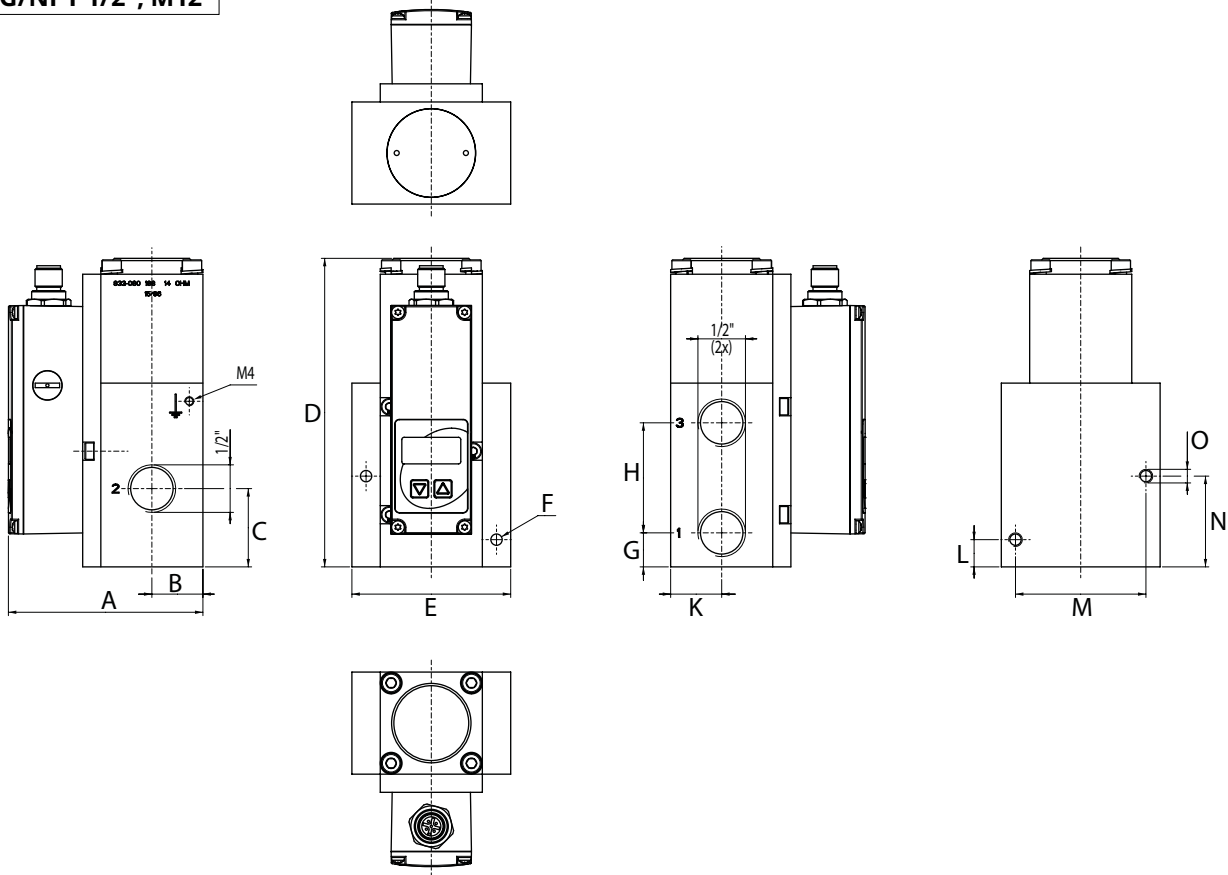
G/NPT 1/4", M12



| A | B | C | D | E | F | G | H | K | L | M | N | O | Q | R | S | T | Weight kg |
|------------------|---------------|---------------|-------------------|---------------|-----------------------|---------------|----------------|---------------|---------------|---------------|---------------|-----------------------|---------------|---------------|----------------------|--------------|-----------|
| 68.75 (2.707) | 18 (0.709) | 26 (1.024) | 118.25 (4.656) | 52 (2.047) | ∅ 4.2 (0.165) (2x) | 11 (0.433) | 34.3 (1.35) | 18 (0.709) | 10 (0.394) | 43 (1.693) | 30 (1.181) | M5x10 (0.394) (2x) | 28 (1.102) | 24 (0.945) | M6x8 (0.315) (2x) | 6 (0.236) | 0.900 |

Dimensions: mm (inches)

G/NPT 1/2", M12



| A | B | C | D | E | F | G | H | K | L | M | N | O | Weight kg |
|------------------|-----------------|-----------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|-----------------|---------------|-----------------------|--------------|
| 85.75 (3.376) | 22.5 (0.886) | 34.5 (1.358) | 136 (5.354) | 70 (2.756) | Ø5 (0.197) | 15 (0.591) | 48.5 (1.909) | 22.5 (0.886) | 12 (0.472) | 57.5 (2.264) | 40 (1.575) | M6x10 (0.394) (2x) | 1.900 |

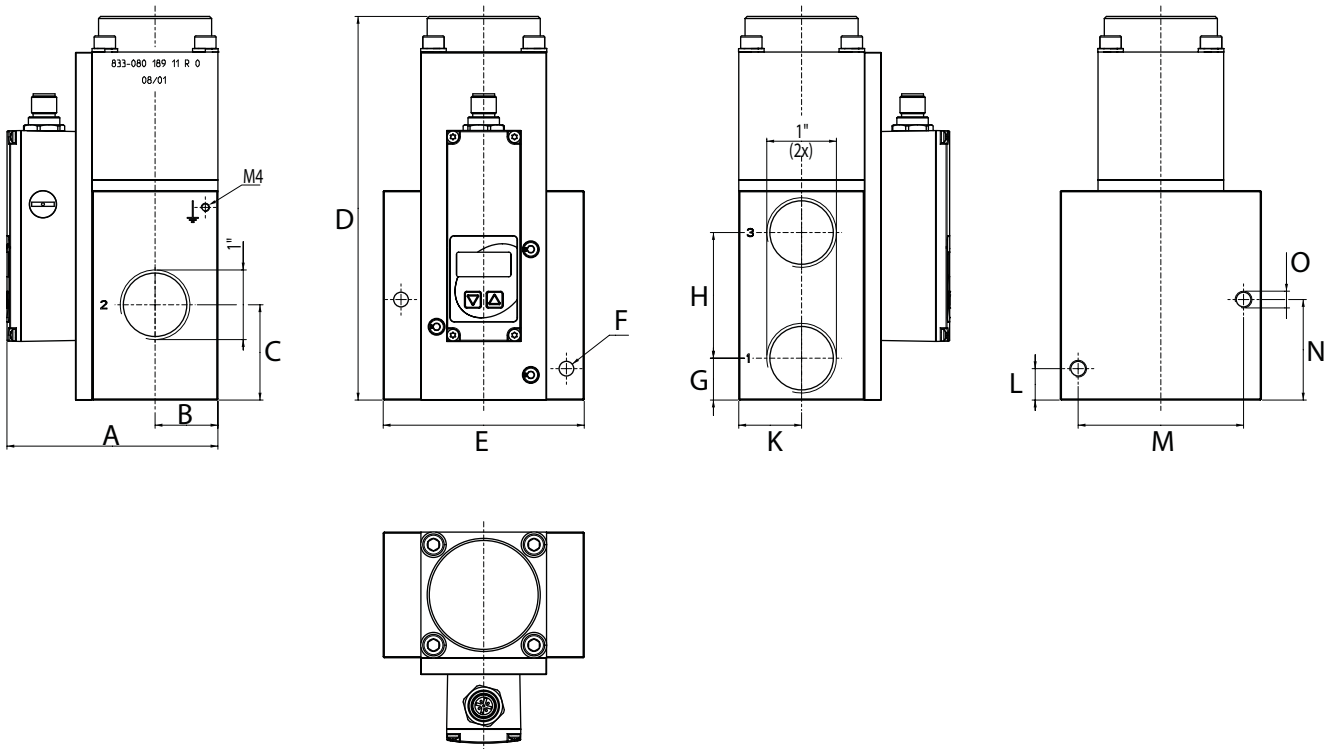
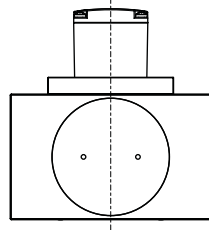
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Dimensions: mm (inches)

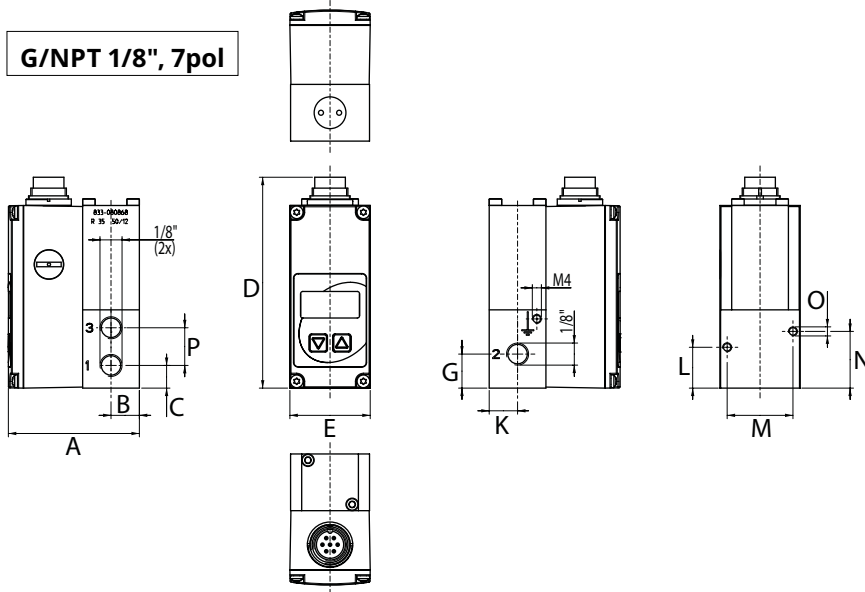
G/NPT 1", M12



| A | B | C | D | E | F | G | H | K | L | M | N | O | Weight kg |
|-------------------|---------------|-----------------|------------------|---------------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------------|--------------|
| 100.75 (3.967) | 30 (1.181) | 45.5 (1.791) | 183.2 (7.213) | 96 (3.780) | Ø7 (0.276) (2x) | 20 (0.787) | 60 (2.362) | 30 (1.181) | 15 (0.591) | 79 (3.110) | 48 (1.890) | M8x15 (0.591) (2x) | 3.900 |

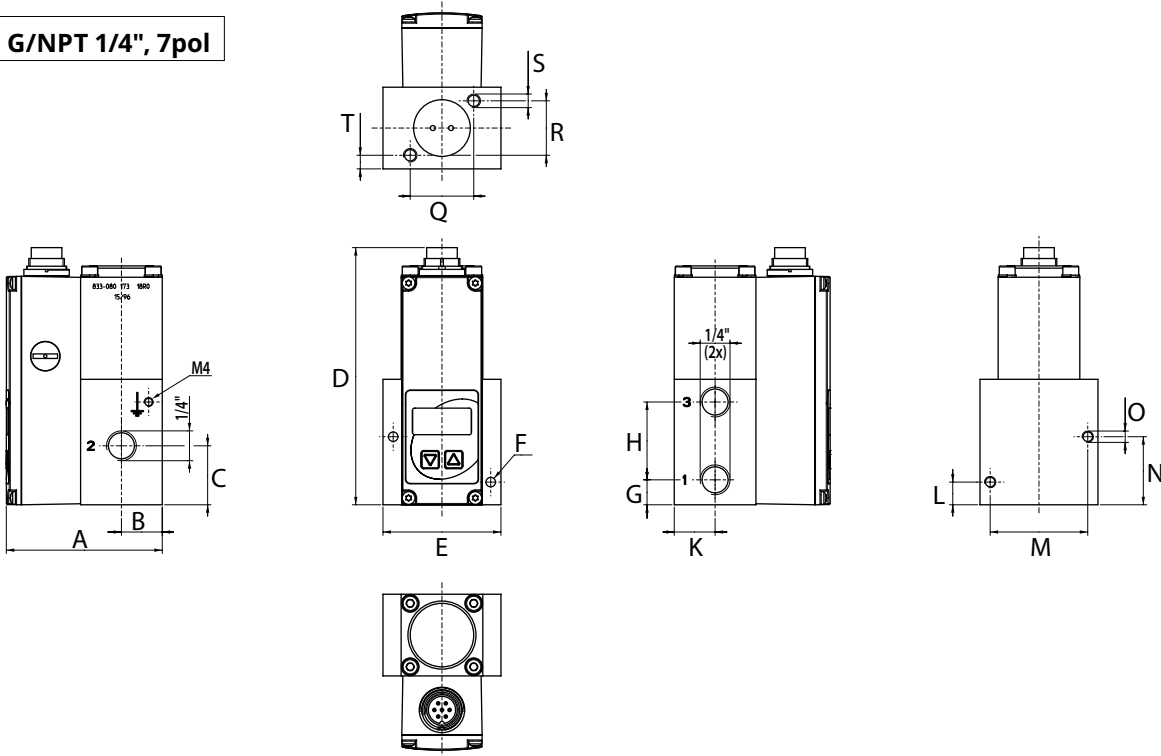
Dimensions: mm (inches)

G/NPT 1/8", 7pol



| A | B | C | D | E | G | K | L | M | N | O | P | Weight kg |
|------------------|-----------------|---------------|------------------|-----------------|---------------|-----------------|---------------|---------------|---------------|-----------------------|-----------------|-----------|
| 57.75 (2.274) | 12.5 (0.492) | 10 (0.394) | 92.95 (3.659) | 35.4 (1.394) | 15 (0.591) | 12.5 (0.492) | 18 (0.709) | 29 (1.142) | 25 (0.984) | M4x10 (0.394) (2x) | 16.6 (0.654) | 0.600 |

G/NPT 1/4", 7pol



| A | B | C | D | E | F | G | H | K | L | M | N | O | Q | R | S | T | Weight kg |
|------------------|---------------|---------------|-------------------|---------------|-----------------------|---------------|----------------|---------------|---------------|---------------|---------------|-----------------------|---------------|---------------|----------------------|--------------|-----------|
| 68.75 (2.707) | 18 (0.709) | 26 (1.024) | 113.35 (4.463) | 52 (2.047) | ∅ 4.2 (0.165) (2x) | 11 (0.433) | 34.3 (1.35) | 18 (0.709) | 10 (0.394) | 43 (1.693) | 30 (1.181) | M5x10 (0.394) (2x) | 28 (1.102) | 24 (0.945) | M6x8 (0.315) (2x) | 6 (0.236) | 0.900 |

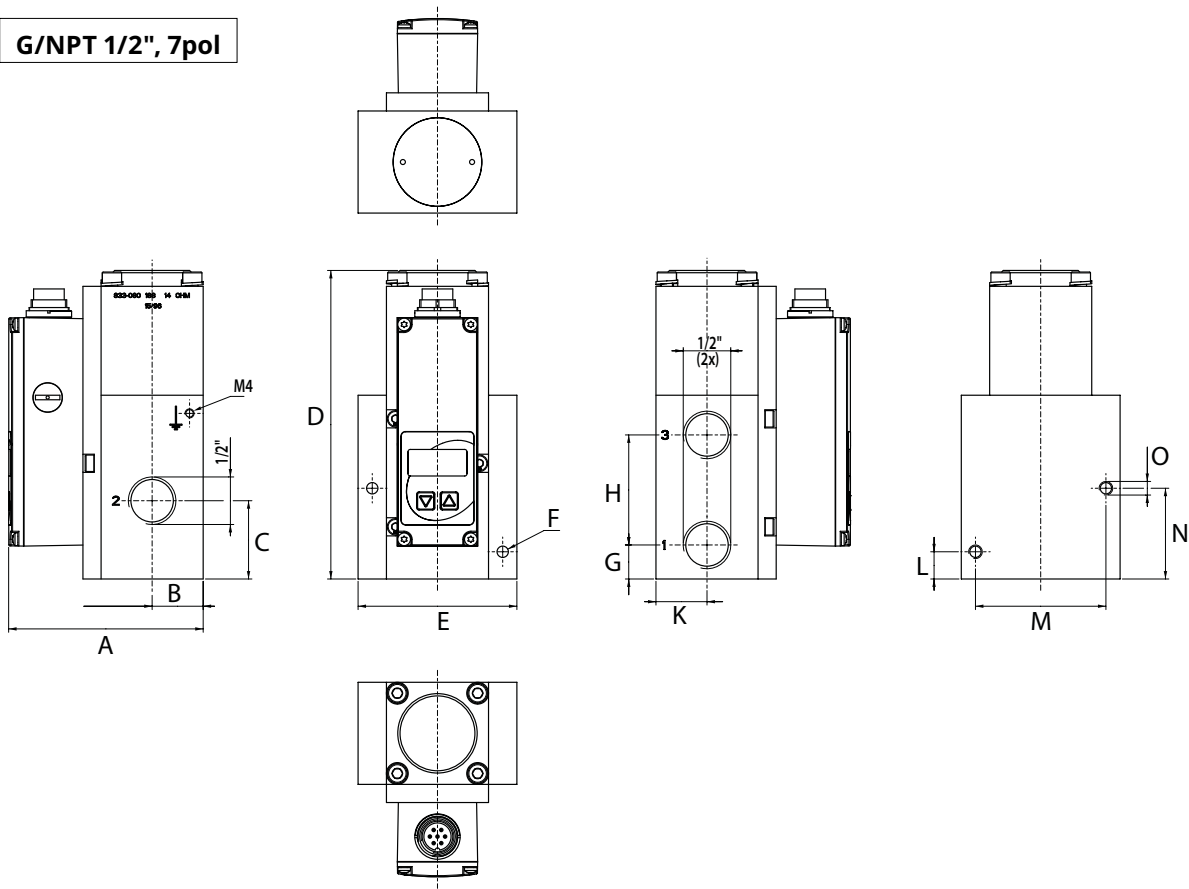
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Dimensions: mm (inches)

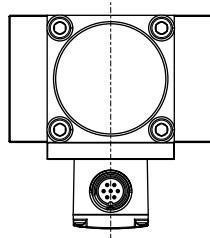
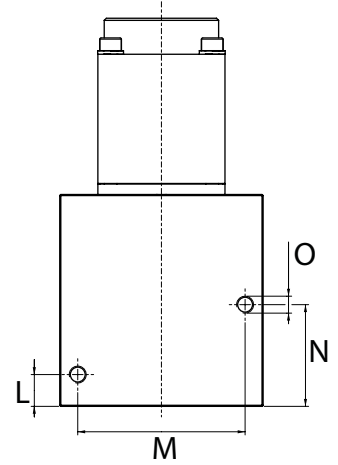
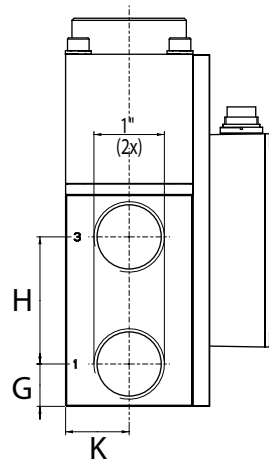
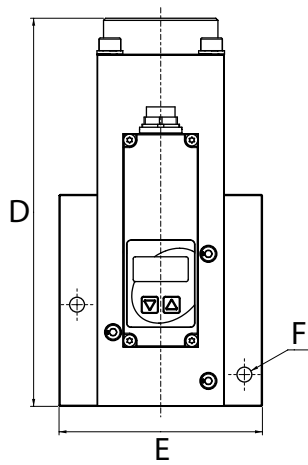
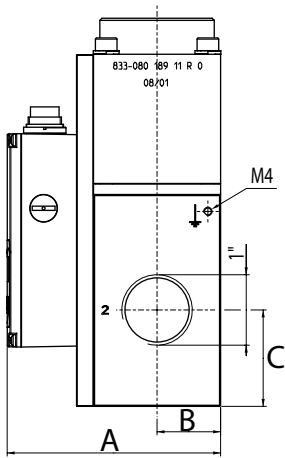
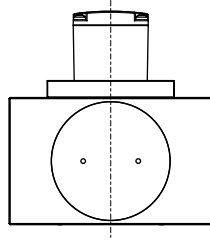
G/NPT 1/2", 7pol



| A | B | C | D | E | F | G | H | K | L | M | N | O | Weight kg |
|------------------|-----------------|-----------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|-----------------|---------------|-----------------------|--------------|
| 85.75 (3.376) | 22.5 (0.886) | 34.5 (1.358) | 136 (5.354) | 70 (2.756) | Ø5 (0.197) | 15 (0.591) | 48.5 (1.909) | 22.5 (0.886) | 12 (0.472) | 57.5 (2.264) | 40 (1.575) | M6x10 (0.394) (2x) | 1.900 |

Dimensions: mm (inches)

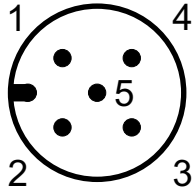
G/NPT 1", 7pol



| A | B | C | D | E | F | G | H | K | L | M | N | O | Weight kg |
|-------------------|---------------|-----------------|------------------|---------------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------------|--------------|
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Connector Pinning / Cable Wiring

VERSION: **5 Pol. M12**

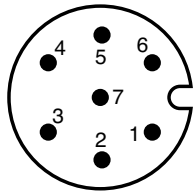


| Pin | Description | 5-wire cable (2 m) | 6-wire cable (5 m, 10 m) |
|------|----------------------------------|--------------------|--------------------------|
| 1 | 24 V voltage supply | brown | brown |
| 2 | Analog setpoint input | white | white |
| 3 | Supply ground | blue | green |
| | Analog ground * | - | yellow |
| 4 | Analog output (Feedback) | black | pink |
| 5 | Digital output (Pressure switch) | grey | grey |
| Body | EMC screen | shield | shield |

* A 6-wire cable with separate analog ground is used for cable lengths over 2 m to set off the voltage drop for the setpoint.

Connector Pinning / Cable Wiring

VERSION: **7 Pol. M16**



View from soldering side

| Pin | Description |
|-----|---|
| 1 | +24 V |
| 2 * | Supply ground (24 V) |
| 3 | Analog setpoint input |
| 4 | Supply ground (Setpoint) |
| 5 | |
| 6 | Outlet pressure (Analog output feedback) - max. 10 mA (optional). For external electrical pressure sensor: Feedback input (optional) |
| 7 | Output pressure switch (optional) |

* Pin 2 must be connected with supply ground!

Accessories

| Description | Catalog Number |
|---|-----------------|
| Straight M12 female connector, 5 pins, with screw terminals | 88100256 |
| Right-angle M12 female connector, 5 pins, with screw terminals | 88100725 |
| Supply cable 2 m; M12 5x0,25 mm ² ; straight connector | 88100726 |
| Supply cable 2 m; M12 5x0,25 mm ² ; right-angle connector | 88100727 |
| Supply cable 5 m; M12 6x0,50 mm ² ; straight connector | 88100728 |
| Supply cable 5 m; M12 6x0,50 mm ² ; right-angle connector | 88100729 |
| Supply cable 10 m; M12 6x0,50 mm ² ; straight connector | 88100730 |
| Supply cable 10 m; M12 6x0,50 mm ² ; right-angle connector | 88100731 |
| Parameter adapter USB, 1 m cable | N50930300100000 |