

AVENTICS™ Proportional Valve SENTRONIC

Highly Dynamic Proportional Pressure Control

Series
625

Features

- Highly dynamic pressure control "thanks to direct control"
- Pressure range vacuum up to 50 bar
- Flow capability from 55 NI/min up to 5600 NI/min
- Exhausting without power supply
- DaS-Software allows easy diagnostics, parameter adjustment and control feedback.



General Valve Information

| | |
|----------------------------------|--|
| Fluids | Compressed air or inert gases, 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 * |

* above 30bar / 1%

Construction

| | |
|-------------------|---------------------------|
| Body | see "How to Order" |
| Internal parts | Stainless steel and brass |
| Seals | FKM and NBR |
| Note on materials | RoHS / REACH 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) 5-pin or 8-pin connector M12 (to be ordered separately) |
| 3 | | 12 | 500 | | | |
| 6 | | 23 ⁽¹⁾ / 44 ⁽²⁾ | 850 ⁽¹⁾ / 1700 ⁽²⁾ | | | |
| 12 | | 34 | 1400 | | | |
| 20 | | 44 | 1800 | | | |

* Max. ripple: 10 %

(1) < 30 bar max. pressure range

(2) > 30 bar max. pressure range

Specifications

| Pipe Size | Orifice Size mm (inches) | Flow at 6 bar | | |
|-----------|-----------------------------|------------------------|------|----------|
| | | Coefficient | | (NI/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 | 1.2 | 1.39 | 1400 |
| G/NPT 1 | 20 | 4.8 | 5.55 | 5600 |

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How To Order

Catalog Number

| | | | | | | | | | | |
|--|----------|------------|----------|----------|----------|----------|----------|----------|------------|--|
| | G | XXX | R | C | S | S | F | V | A00 | PP |
| G: Thread Connection | | | | | | | | | | PP: Pressure Ranges⁴ |
| R = Pad Mount | | | | | | | | | | 01 0-1 bar P1 0-50 psi. |
| G = G-Thread | | | | | | | | | | 02 0-2 bar P2 0-100 psi. |
| 8 = NPT-Thread | | | | | | | | | | 03 0-3 bar P3 0-150 psi. |
| XXX: Product Series | | | | | | | | | | 04 0-4 bar P4 0-200 psi. |
| 625 = Sentronic 625 | | | | | | | | | | 05 0-5 bar P5 0-250 psi. ¹ |
| R: Revision Letter | | | | | | | | | | 06 0-6 bar P6 0-300 psi. ¹ |
| A = Initial Release | | | | | | | | | | 07 0-7 bar P7 0-350psi. ³ |
| C: Connector | | | | | | | | | | 08 0-8 bar M1 0-100 mbar |
| A = M12x5 | | | | | | | | | | 09 0-9 bar M2 0-200 mbar |
| B = M12x5 with Display | | | | | | | | | | 10 0-10 bar M3 0-300 mbar |
| C = M16x7 | | | | | | | | | | 11 0-11 bar M4 0-400 mbar |
| D = M16x7 with Display | | | | | | | | | | 12 0-12 bar M5 0-500 mbar |
| H = M12x8 | | | | | | | | | | 13 0-13 bar ¹ M6 0-600 mbar |
| J = M12x8 with Display | | | | | | | | | | 14 0-14 bar ¹ M7 0-700 mbar |
| S: Size | | | | | | | | | | 15 0-15 bar ¹ M8 0-800 mbar |
| 0 = DN1 / 1/8" / Brass | | | | | | | | | | 16 0-16 bar ¹ M9 0-900 mbar |
| 1 = DN1 / 1/8" / Stainless Steel | | | | | | | | | | 17 0-17 bar ¹ XX No Internal Sensor |
| 2 = DN3 / 1/8" / Brass | | | | | | | | | | 18 0-18 bar ¹ |
| 3 = DN3 / 1/8" / Stainless Steel | | | | | | | | | | 19 0-19 bar ¹ |
| 4 = DN3 / 1/8" / Aluminium / Fine | | | | | | | | | | 20 0-20 bar ¹ |
| 5 = DN6 / 1/4" / Aluminium | | | | | | | | | | 21 0-21 bar ³ |
| 6 = DN6 / 1/4" / Stainless Steel | | | | | | | | | | 22 0-22 bar ³ |
| 7 = DN6 / 1/4" / Brass | | | | | | | | | | 23 0-23 bar ³ |
| 8 = DN6 / 1/4" / Brass HP | | | | | | | | | | 24 0-24 bar ³ |
| 9 = DN12 / 1/2" / Aluminium | | | | | | | | | | 25 0-25 bar ³ |
| A = DN12 / 1/2" / Stainless Steel | | | | | | | | | | 26 0-26 bar ³ |
| B = DN20 / 1" / Aluminium | | | | | | | | | | 27 0-27 bar ³ |
| C = DN20 / 1" / Stainless Steel | | | | | | | | | | 28 0-28 bar ³ |
| S: Setpoint | | | | | | | | | | 29 0-29 bar ³ |
| 0 = 0 - 10V | | | | | | | | | | 30 0-30 bar ³ |
| 1 = 0 - 20mA | | | | | | | | | | 31 0-31 bar ² |
| 2 = 4 - 20mA | | | | | | | | | | 32 0-32 bar ² |
| F: Feedback | | | | | | | | | | 33 0-33 bar ² |
| 0 = 0 - 10V / OUT | | | | | | | | | | 34 0-34 bar ² |
| 1 = 0 - 20mA / OUT | | | | | | | | | | 35 0-35 bar ² |
| 2 = 4 - 20mA / OUT | | | | | | | | | | 36 0-36 bar ² |
| 3 = 0 - 10V / IN | | | | | | | | | | 37 0-37 bar ² |
| 4 = 0 - 20mA / IN | | | | | | | | | | 38 0-38 bar ² |
| 5 = 4 - 20mA / IN | | | | | | | | | | 39 0-39 bar ² |
| V: Version | | | | | | | | | | 40 0-40 bar ² |
| 0 = Digital Out (PNP) | | | | | | | | | | 41 0-41 bar ² |
| 1 = Digital IN | | | | | | | | | | 42 0-42 bar ² |
| 2 = No Documentation / Digital Out (PNP) | | | | | | | | | | 43 0-43 bar ² |
| 3 = No Documentation / Digital IN | | | | | | | | | | 44 0-44 bar ² |
| A00: Option | | | | | | | | | | 45 0-45 bar ² |
| A00 = Standard | | | | | | | | | | 46 0-46 bar ² |
| A01 = Oxygen Suitable | | | | | | | | | | 47 0-47 bar ² |

Notes:

- 1) Size 0,1,2,3,5,6,7 needed
- 2) Size 8 needed
- 3) Size 7,8 needed
- 4) Other on request

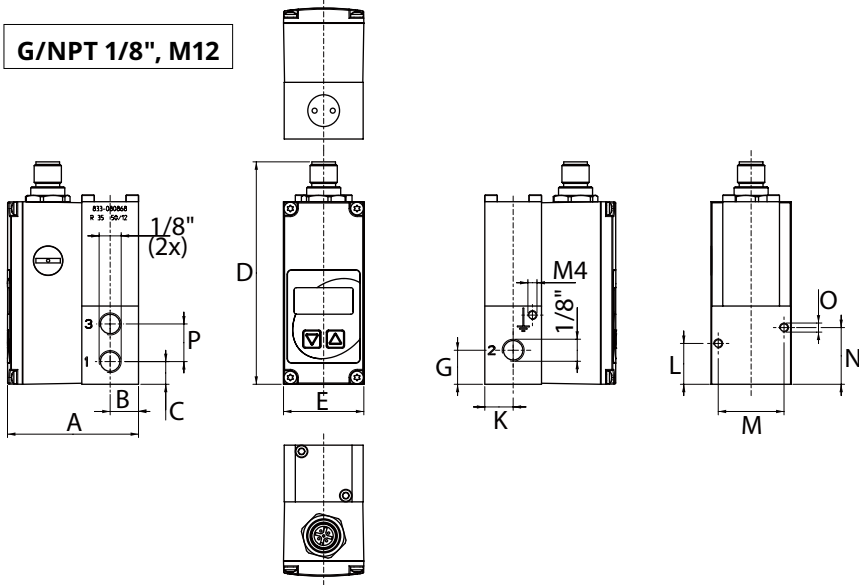
AVENTICS™ Proportional Valve SENTRONIC

Series
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Highly Dynamic Proportional Pressure Control

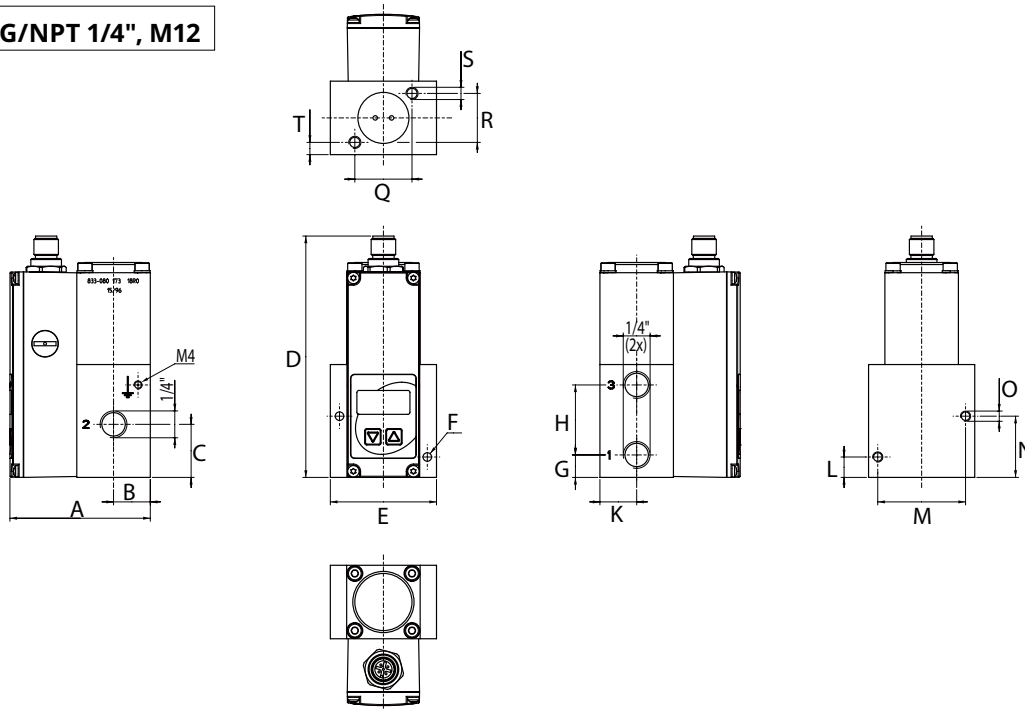
Dimensions: mm (inches)

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 |

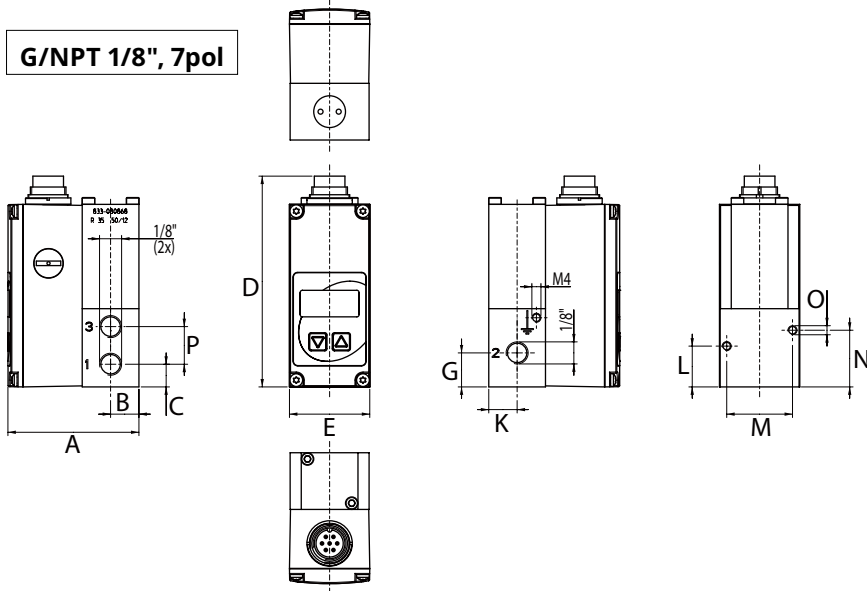
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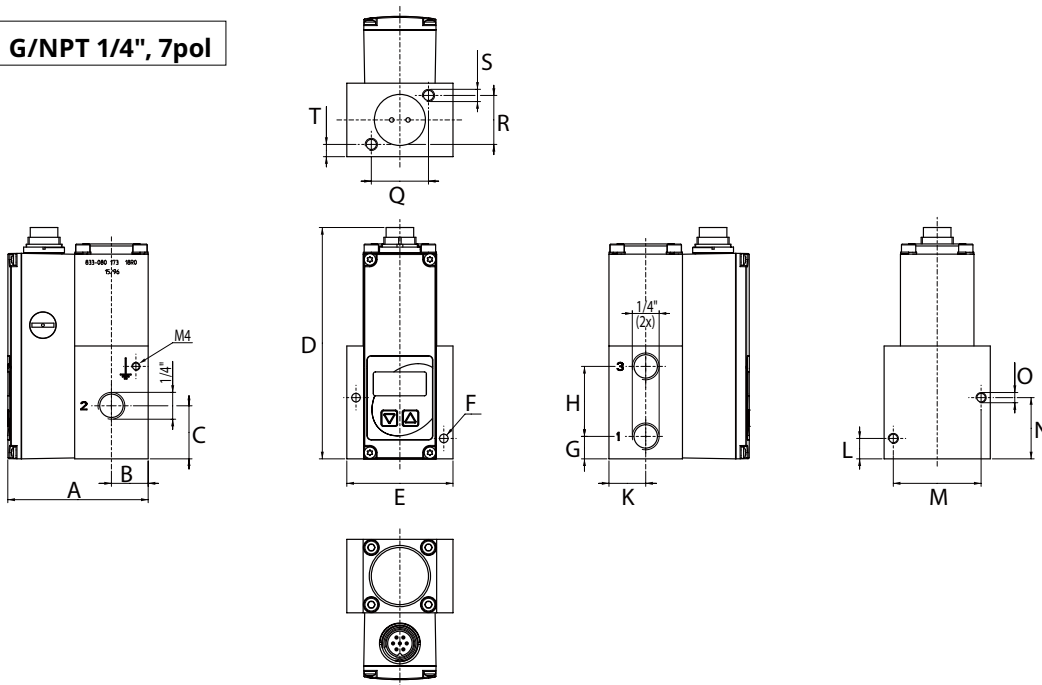
Dimensions: mm (inches)

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 |

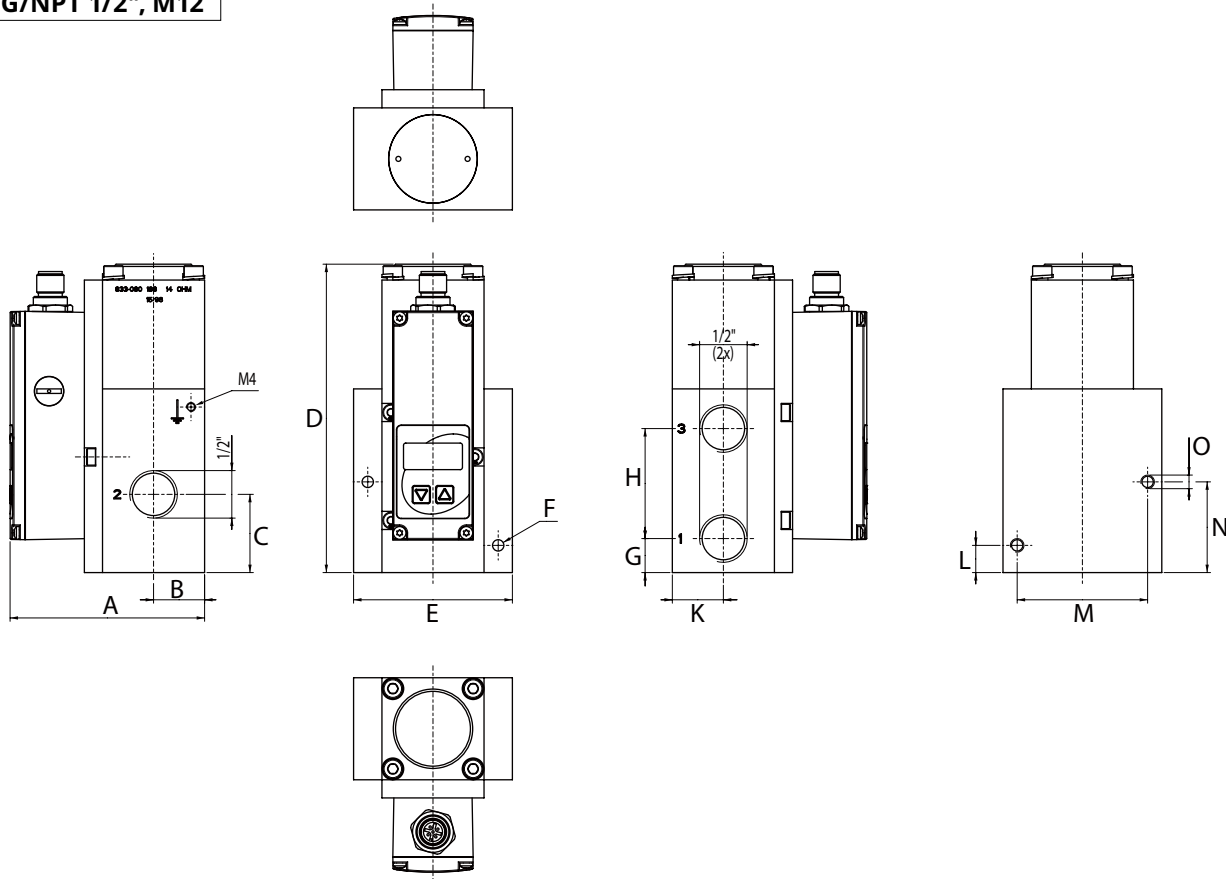
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Dimensions: mm (inches)

G/NPT 1/2", 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 |

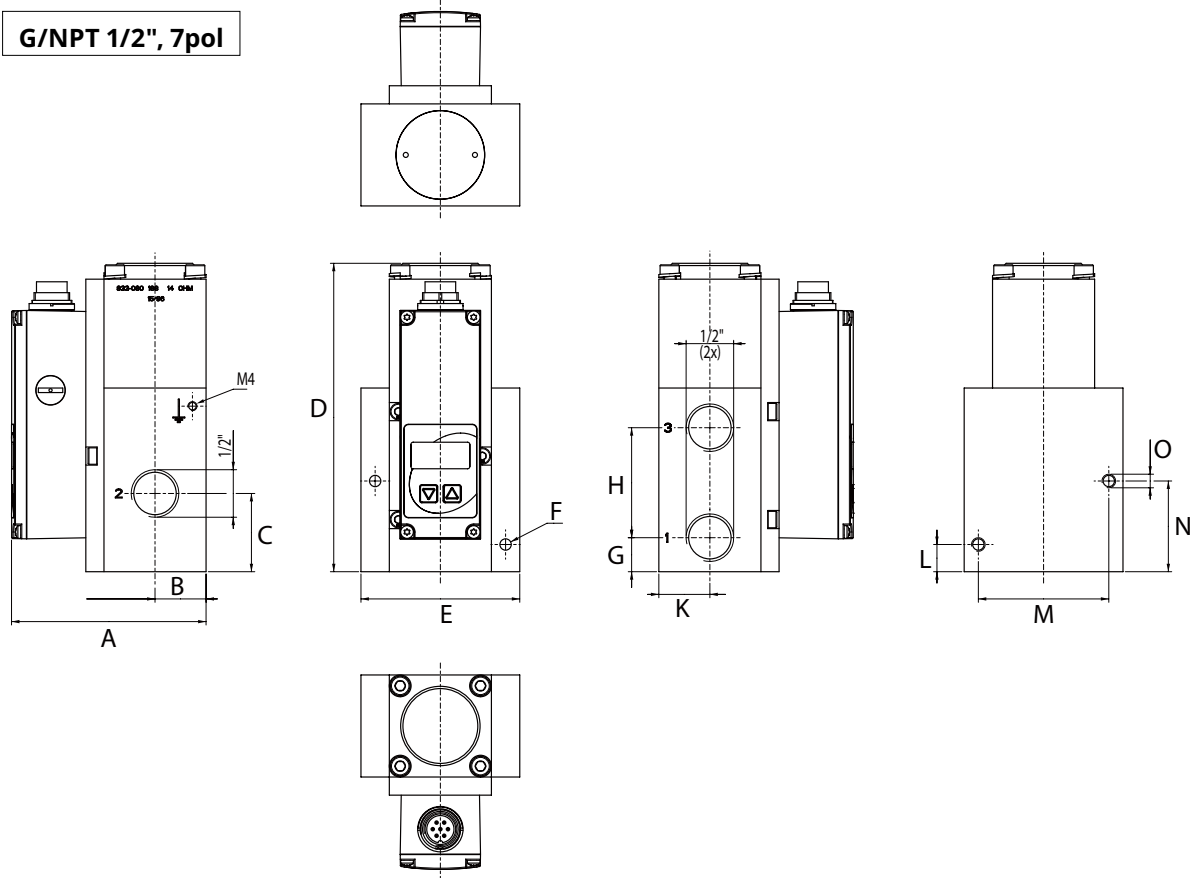
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Dimensions: mm (inches)

G/NPT 1/2", 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 |

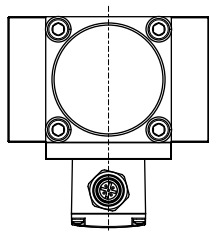
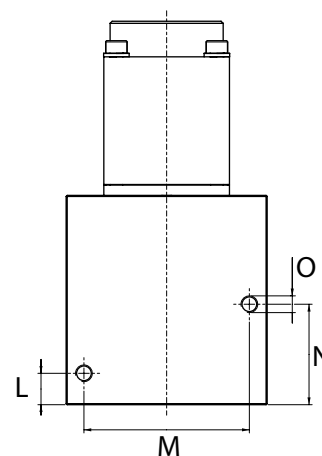
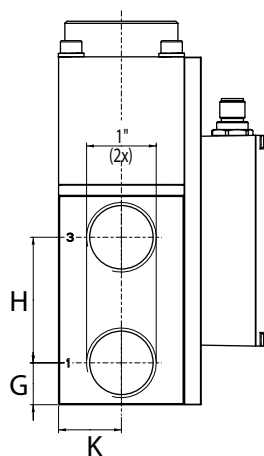
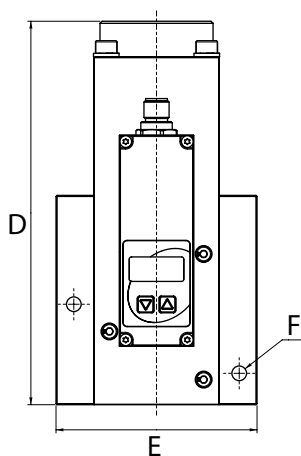
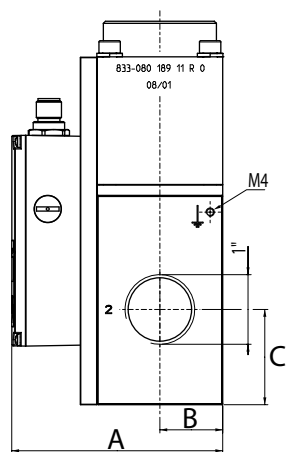
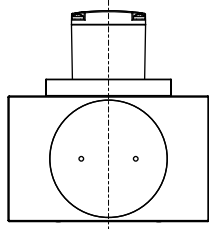
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Dimensions: mm (inches)

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 |

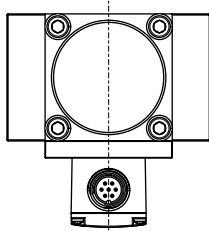
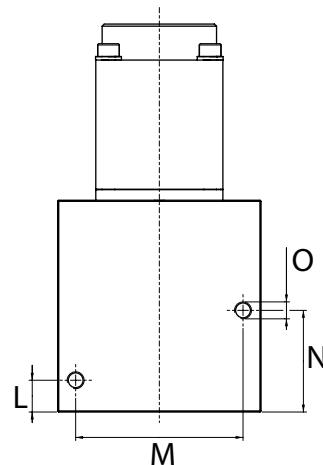
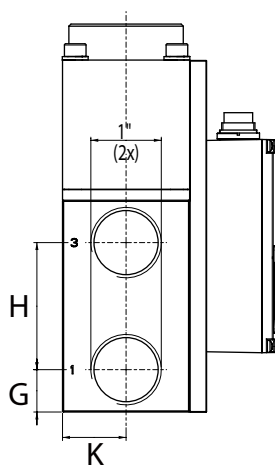
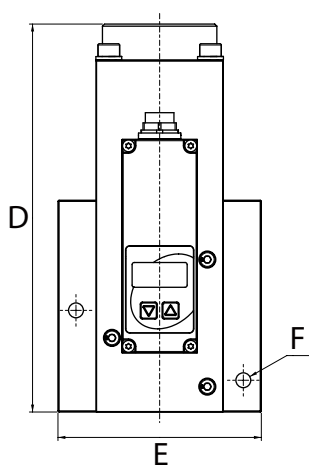
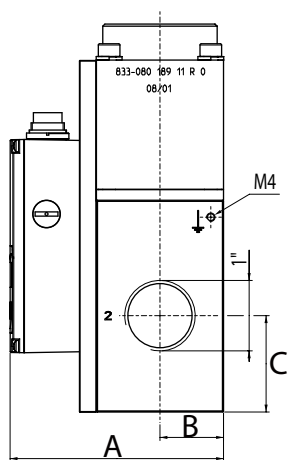
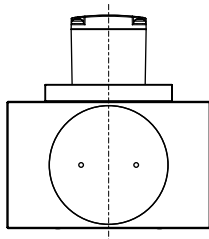
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Dimensions: mm (inches)

G/NPT 1", 7pol



| 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 |

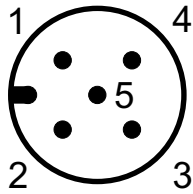
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Connector Pinning / Cable Wiring

VERSION: 5 Pin M12

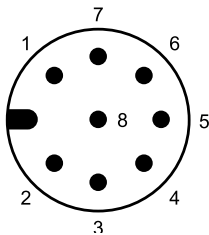


| Pin | Description | 5-wire cable (2 m) | 6-wire cable (5 m, 10 m) |
|------|----------------------------------|--------------------|--------------------------|
| 1 | 24 V voltage supply | brown | brown |
| 2 | Analog setpoint input | white | white |
| 3 | Supply ground | blue | green |
| | Analog ground * | - | 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: 8 Pin M12

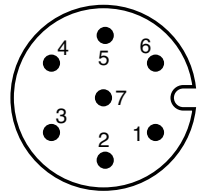


| Pin | Description | 8-wire cable (5 m, 10 m) |
|------|----------------------------------|--------------------------|
| 1 | Digital IN | white |
| 2 * | 24 V voltage supply | brown |
| 3 | Analog ground (Setpoint) | green |
| 4 | Analog setpoint input | yellow |
| 5 | Analog output 2 | grey |
| 6 | Analog output (Feedback) | pink |
| 7 | Supply ground | blue |
| 8 | Digital output (Pressure switch) | red |
| Body | EMC screen | shield |

* Pin 2 must be connected with supply ground!

Connector Pinning / Cable Wiring

VERSION: 7 Pin M16



| Pin | Description |
|-----|---|
| 1 | +24 V |
| 2 * | Supply ground |
| 3 | Analog setpoint input |
| 4 | Supply ground (Setpoint) |
| 5 | |
| 6 | Analog output (Feedback) |
| 7 | Digital output (Pressure Switch Optional) |

* Pin 2 must be connected with supply ground!

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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 |
| Supply cable 5 m; 8x0,50 mm ² ; straight connector | N43802302700000 |
| Supply cable 10 m; 8x0,50 mm ² ; straight connector | N43802302800000 |
| Supply cable 10 m; 8x0,50 mm ² ; right-angle connector | N43802302900000 |
| Communication Mod. RJ45. Ethernet TCP/IP 0.4 m cable | N52480010000000 |

Accessories Americas

| Description | Catalog Number |
|---|------------------|
| M12 , straight, 5-pin, 12 mm Cable fitting PG9 | TC05F20000000000 |
| M12 , angled, 5-pin, 90°, 12 mm Cable fitting PG9 | TC05F20000000000 |
| supply cable, 6-wire, straight electrical connector, 5-pin M12, 24 AWG, 3 m | TC0503MMS000671Y |
| supply cable, 6-wire, straight electrical connector, 5-pin M12, 24 AWG, 5m | TC0505MMS000671Y |
| supply cable, 6-wire, angled electrical connector, 5-pin M12, 24 AWG, 3 m | TD0503MMS000671Y |
| supply cable, 6-wire, angled electrical connector, 5-pin M12, 24 AWG, 5 m | TD0505MMS000671Y |
| Supply cable 5 m; 8x0,50 mm ² ; straight connector | N43802302700000 |
| Supply cable 10 m; 8x0,50 mm ² ; straight connector | N43802302800000 |
| Supply cable 10 m; 8x0,50 mm ² ; right-angle connector | N43802302900000 |
| Communication Mod. RJ45. Ethernet TCP/IP 0.4 m cable | N52480010000000 |

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