

# Proportional-pressure control valve VPPE-3-1-1/4-10-MR-E1-F1A

Part number: 8181691

**FESTO**



## Data sheet

| Feature                                           | Value                                                                                                     |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Nominal width pressurization                      | 5 mm                                                                                                      |
| Exhaust nominal width                             | 2.5 mm                                                                                                    |
| Actuation type                                    | Electrical                                                                                                |
| Sealing principle                                 | Soft                                                                                                      |
| Mounting position                                 | Any<br>Preferably upright                                                                                 |
| Structural design                                 | Pilot-controlled diaphragm regulator                                                                      |
| Short-circuit protection                          | For all electrical connections                                                                            |
| Setpoint input                                    | Digital                                                                                                   |
| Safety instructions                               | VPPE safety position: if the supply cable breaks, the outlet pressure is maintained in uncontrolled form. |
| Reverse polarity protection                       | for all electrical connections                                                                            |
| Reset method                                      | Mechanical spring                                                                                         |
| Type of control                                   | Pilot-controlled                                                                                          |
| Valve function                                    | 3-way proportional pressure control valve                                                                 |
| Display type                                      | LED display<br>3-digit                                                                                    |
| Pressure regulation range MPa                     | 0.01 MPa...1 MPa                                                                                          |
| Pressure regulation range                         | 0.1 bar...10 bar                                                                                          |
| Value range MPa                                   | 0 bit...1000 bit                                                                                          |
| Value range bar                                   | 0 bit...10000 bit                                                                                         |
| Value range psi                                   | 0 bit...1450 bit                                                                                          |
| Inlet pressure 1                                  | 6 bar...11 bar                                                                                            |
| Inlet pressure 1 MPa                              | 0.6 MPa...1.1 MPa                                                                                         |
| Max. pressure hysteresis                          | 0.005 MPa<br>0.05 bar<br>0.725 psi                                                                        |
| Normal nominal flow rate (normalized to DIN 1343) | 2300 l/min                                                                                                |
| DC operating voltage range                        | 21.6 V...26.4 V                                                                                           |
| Max. current consumption                          | 160 mA                                                                                                    |
| Duty cycle                                        | 100%                                                                                                      |
| Max. electrical power consumption                 | 4.2 W                                                                                                     |
| Protocol                                          | Modbus RTU                                                                                                |

| Feature                                            | Value                                                              |
|----------------------------------------------------|--------------------------------------------------------------------|
| Residual ripple                                    | 10 %                                                               |
| Operating medium                                   | Compressed air as per ISO 8573-1:2010 [7:4:4]<br>Inert gas         |
| Information on operating and pilot media           | Operation with oil lubrication not possible                        |
| Certification                                      | RCM compliance mark<br>c UL us - Listed (OL)                       |
| KC characters                                      | KC EMC                                                             |
| CE marking (see declaration of conformity)         | As per EU EMC directive<br>As per EU RoHS directive                |
| UKCA marking (see declaration of conformity)       | To UK instructions for EMC<br>To UK RoHS instructions              |
| Certificate issuing authority                      | UL E322346                                                         |
| Corrosion resistance class (CRC)                   | 2 - Moderate corrosion stress                                      |
| LABS (PWIS) conformity                             | VDMA24364-B2-L                                                     |
| Suitability for the production of Li-ion batteries | Suitable for battery production with reduced Cu/Zn/Ni values (F1a) |
| Temperature of medium                              | 10 °C...50 °C                                                      |
| Degree of protection                               | IP65                                                               |
| Ambient temperature                                | 0 °C...60 °C                                                       |
| Product weight                                     | 390 g                                                              |
| Linearity                                          | 1 %FS                                                              |
| Hysteresis                                         | 0.7 %FS                                                            |
| Reproducibility                                    | 0.5 %FS                                                            |
| Overall accuracy                                   | 1.25 %FS                                                           |
| Temperature coefficient                            | 0.04 %/K                                                           |
| Electrical connection                              | 5-pin<br>M12<br>Plug                                               |
| Serial interface, type                             | RS 485-A                                                           |
| Type of mounting                                   | With through-hole                                                  |
| Pneumatic connection 1                             | G1/4                                                               |
| Pneumatic connection 2                             | G¼                                                                 |
| Pneumatic connection 3                             | G1/8                                                               |
| Note on materials                                  | RoHS-compliant                                                     |
| Housing material                                   | Aluminum, powder-coated                                            |