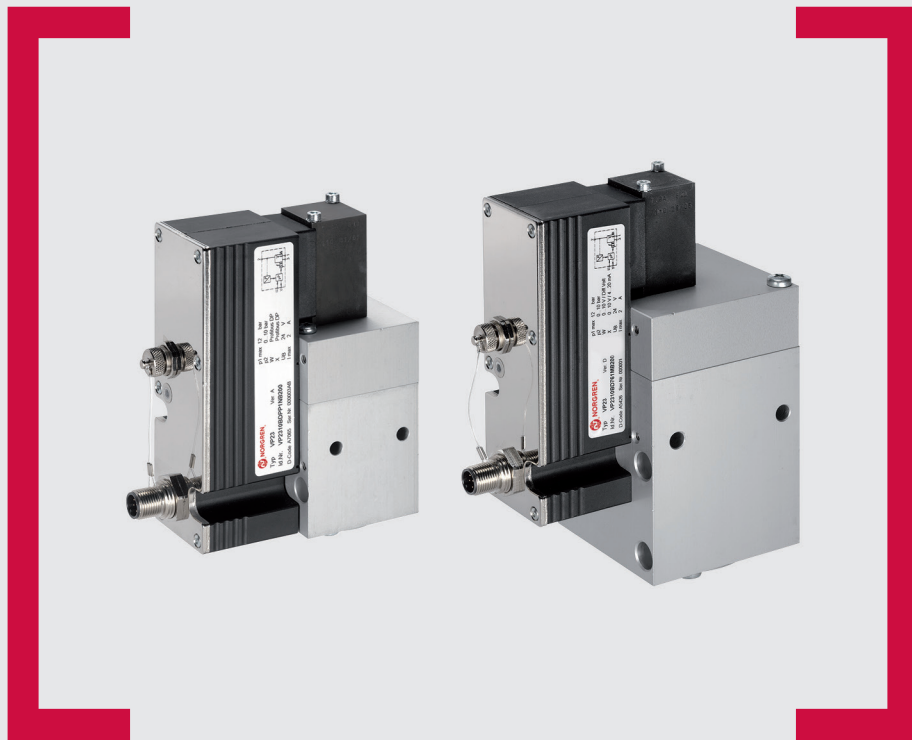


Operation & Service Manual

VP23



Before starting work read these instructions.

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1. Description

The Profibus-DP option provides a facility for integrating the VP23 proportional valve directly into industrial networks. An 10-bit read/write resolution is available for reference and actual values, at a maximum data transmission rate of 12 Mbit/s, which is detected automatically.

Please also refer to the Installation and Operating Instructions for the standard VP23 valve in addition to these Installation and Operating Instructions.

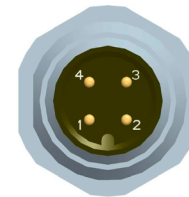
2. Electrical connection

2.1. Connector pin assignments

2.1.1. Supply voltage

M12 4-pin male connector, A-coded:

Pin	Function
1	+24V (+- 10%) control voltage (electronics)
2	+24V (+- 10%) actuator voltage (drive)
3	GND
4	FE

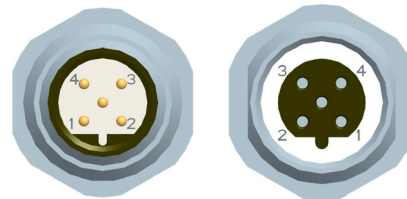


The supply voltages can be connected separately from each other. This means that the actuator voltage can be switched off without interrupting bus communication.

2.1.2. Bus in/out

M12 5-pin male connector, B-coded / M12 5-pin female connector, B-coded

Pin	Signal
1	VP (+5V)
2	RxD/TxD-N (A)
3	D GND
4	RxD/TxD-P (B)
5	nc



Please note: In order to ensure reliable signal transmission, a terminating resistor must be connected to the "Bus out" connector on the last bus device in the network.

2.2. Cable routing

Data lines (PROFIBUS cables) should not be laid parallel to power cables. If the only option is to lay them in parallel, the distance between cables should be as large as possible. If such power cables do lie parallel to PROFIBUS cables, they can produce interference and hence errors in the data transmission.

Please also refer to the Installation Guide for Profibus version 1.0.6, dated May 2006, order no. 8.021 published by the PROFIBUS User Organization e.V. (PNO).

2.3. Functional earth

When fitting the valve, ensure a secure connection between the metal valve housing and the functional earth of the installation. Tooth-lock washers or equivalent should be used here to provide optimum contact.

2.4. Meaning of LEDs

Power (green):
+24V control voltage present.

Bus active – BA (green):
The Profibus master is performing cyclical data exchange with the device.

Status (green):
Valve in working order

Status (red):
Valve has a fault. Possible faults are: +24V actuator voltage out of tolerance, 15V internal device voltage out of tolerance, W does not equal X, over-temperature, current limiting active.

3. Specific parameters of bus device

3.1. GSD file

The GSD file "IMI_06E8.GSD" can be downloaded from the Norgren Homepage at <http://www.norgren.com/de/products/download.asp>.

This is an extract from the GSD file:

Vendor_Name = "Norgen GmbH"

Model_Name = "Proportionalregelventil VPxx"

Ident_Number = 0x06E8 (hex)

Implementation_Type = "LSPM2"

Module="2 Byte Out, 2 Byte In" 0xA1,0x91

3.2. Setting the device station address

The device station address is set by the Profibus master. Optionally, the address can be set via the serial interface using VPtool. A change in address takes immediate effect and is saved in an EEPROM by the device.

To set the address using VPtool, there must be no communication between master and slave, i.e. the "BA" LED must not be illuminated. Otherwise the change in address will not be accepted by the slave.

The valid device station address lies in the range 1 to 126 (dec.). The station address is set to 126 (dec.) at delivery. This signals to the bus master that an address has not been assigned yet for this device.

3.3. Parameter data

The device works with 2 bytes (16 bits) of input data and 2 bytes (16 bits) of output data. Please refer to section 1.3.5 for the device-specific bit assignments.

3.4. Diagnostics

The device provides simple shared diagnostics, with a diagnostic fault having several possible causes. Bits 10 to 14 in the output data provide precise information on the cause.

3.5. Parameter data specific to the VP23

Input data:

bit 0 – bit 9: 10-bit reference value

bit 10 – bit 15: unassigned

Output data:

bit 0 – bit 9: 10-bit actual value

bit 10: +24V actuator voltage out of tolerance

bit 11: 15V internal device voltage out of tolerance

bit 12: W does not equal X

bit 13: over-temperature

bit 14: current limiting active

bit 15: not assigned

If the actuator voltage is disconnected intentionally, then bit 10 of the output data confirms that "actuator is disconnected from supply".

Electromagnetic compatibility (EMC)

This valve has been tested in accordance with EMC Directive 2004/108/EC to standards EN 61000-6-2:2005 EMC part 6-2: Generic standards, Immunity standard for industrial environments, and EN 61000-6-4: 2001 EMC part 6-4: Generic standards, Emission standard for industrial environments.

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