DREHMO
VALVE ACTUATORS

A member of the AUMA Group

Technical Data

Highway Addressable Remote Transducer (HART)

Revision: 1.0
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Keep this manual for future reference.
These datasheet are only valid in conjunction with the supplementary instruction manual for HART

1 Technical Data

Features and functions	
Control and feedback signals	Via HART interface Device category **Actuator**: • Analogue 4−20 mA setpoint with digital HART communication Device category **Current Output**: • Analogue 4−20 mA position feedback signal with digital HART communication
Status indications via HART interface	In combination with device category **Actuator**: • Analogue output signal for position feedback galvanically isolated position feedback 0/4−20 mA (load max. 500 Ω)
Wiring diagram (basic version)	Device category: **Actuator**: • IMC00X-XX-N1-XXX Device category: **Current Output**: • IMC00X-XX-N2-XXX Device category: **Current Output + WirelessHART**: • IMC00X-XX-N3-XXX

Setting/programming the HART interface	
Setting the HART address	The HART address is set via HART command 6 or alternatively via the display of i-matic control (default value: 0)

General HART interface data	
Communication protocol	HART according to IEC 61158 and IEC 61784 (CPF 9)
Network topology	Point-to-point wiring
Communication signal	HART, baud rate 1.2 kbit/s Device category: **Actuator** • FSK (Frequency Shift Key) modulated to 4−20 mA set-point signal • Input impedance: 250 Ω. The impedances of other HART devices connected (parallel or in series) must be within the HART specification • Point-to-point wiring • Signal range: 4 −20 mA • Operating range: 2 mA − 22 mA • Minimum operating voltage: 7 V (at 22 mA) • Integrated reverse polarity protection Device category: **Current Output**: • FSK (Frequency Shift Key) modulated to 4 −20 mA position feedback signal • Input impedance: 40 kΩ. The impedances of other HART devices connected (parallel or in series) must be within the HART specification • Point-to-point or multidrop wiring • Short-circuit-proof current output
HART cable specification	Refer to HART specification
Power supply	Internal power supply of HART interface via actuator controls (apart from HART supply voltage, no other supply required)
Device identification	Manufacturer Name: AUMA Manufacturer ID: 24700 (0x607C) HART protocol revision: 7.4 Number of device variables: 12 Model Name: DREHMO i-matic Device Type Code: 58037 (0xE2B5)

Supported HART commands	• Universal Commands • Common Practice Commands: – Command 33 (Read Device Variables) – Command 40 (Enter/Exit Fixed Current Mode) – Command 42 (Perform Device Reset) – Command 45 (Trim Loop Current Zero) – Command 46 (Trim Loop Current Gain) – Command 50 (Read Dynamic Variable Assignments) – Command 72 (Squawk) – Command 73 (Find Device) – Command 89 (Set Real-Time Clock) – Command 90 (Read Real-Time Clock) – Command 95 (Read Device Communication Statistics)
Supported HART commands	• Device Specific Commands: – Command 128 (Write Operation Command) – Command 131 (Read Software Version) – Command 132 (Reset to Factory Default) – Command 133 (Reset Operational Data) – Command 134 (Reset HART Configuration) – Command 160 (Read Parameter) – Command 161 (Write Parameter) – Command 162 (Read Process Data)

Commands and signals of the HART interface	
Output data	Device category **Actuator**: • Loop Current Mode activated: Analogue 4 – 20 mA control signal for position setpoint • Loop Current Mode deactivated: Digital HART commands for position setpoint (0 – 100.0 %) or for discrete operation in directions OPEN and CLOSE Device category **Current Output**: • Loop Current Mode activated: Analogue 4 – 20 mA output signal for position feedback signal (point-to-point wiring) Digital HART commands for position setpoint (0 – 100.0 %) or for discrete operation in directions OPEN and CLOSE • Loop Current Mode deactivated: Analogue output signal for position feedback signal fixed to 4 mA (multidrop wiring) • Digital HART commands for position setpoint (0 – 100.0 %) or for discrete operation in directions OPEN and CLOSE
Feedback signals	• End positions OPEN, CLOSED • Actual position value • Actual torque value, requires magnetic limit and torque transmitter (MWG) in actuator • Selector switch in position LOCAL/REMOTE • Running indication (directional) • Torque switches OPEN, CLOSED • Limit switches OPEN, CLOSED • Manual operation by hand wheel or via local controls • Analogue (2) and digital (4) customer inputs • Device Status information – Field Device Status – Device Specific Status – Extended Device Status Information – Standardized Status – Analog Channel Saturated – Analog Channel Fixed

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