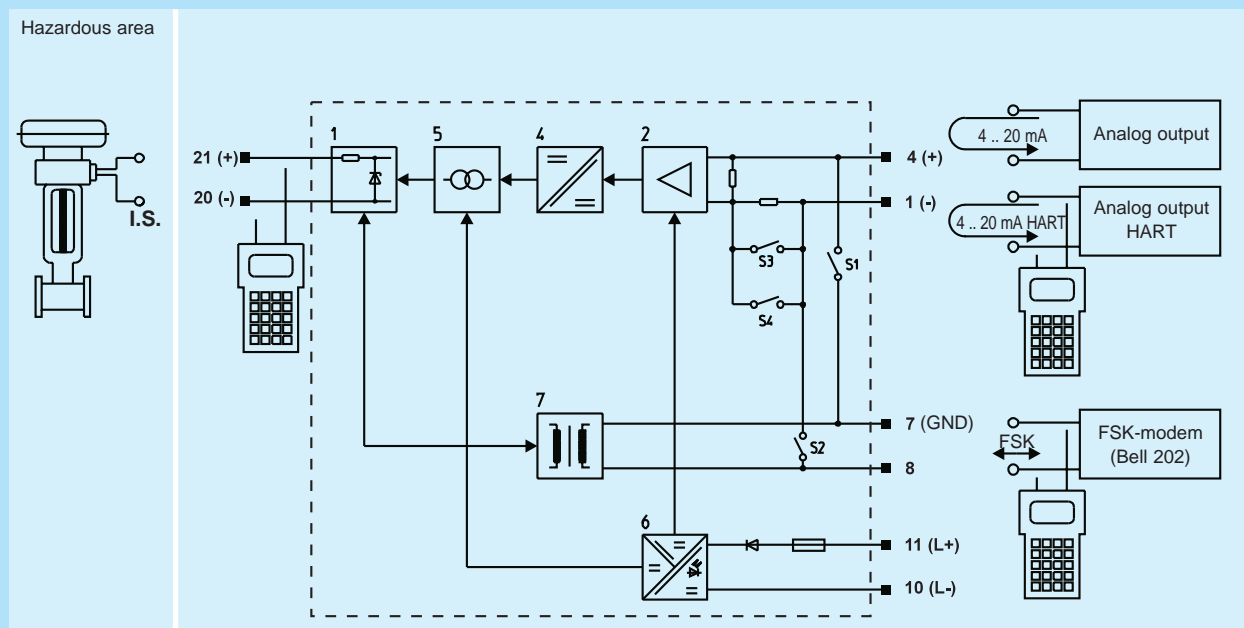


### I.S. Isolators (Modules) mA Isolating Repeater HART Type 9118/16

- Intrinsically safe output [Ex ia] IIC/IIB
- For HART output signals 4 .. 20 mA with superimposed FSK
- Separate connection for Hand Held Terminal, modem etc. with galvanic isolation
- Galvanic isolation between input, output, power supply and communication input
- Power supply 18 .. 35 V DC
- EMC tested, CE marking

Basic function: analog output, 4 .. 20 mA for HART, 1 channel. These isolators are used in the intrinsically safe operation of intelligent HART valves. They enable them to be used on either conventional 4 .. 20 mA outputs not designed for HART operation, or on outputs specially designed for HART operation.

STAHL



| Selection table            |                     |
|----------------------------|---------------------|
| Version                    | Ordering code       |
| mA isolating repeater HART | 9118 / 16 - 22 - 10 |

| Safety data for output                                             |                                                                                                         |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Certifications                                                     | BVS (Europe CENELEC), CSA (Canada), SEV (Switzerland), FTZU (Czech Republic), EVPU (Slovakia), FM (USA) |
| Marking Classification                                             | [EEEx ia] IIC/IIB according to CENELEC associated electrical apparatus                                  |
| Safe maximum values (CENELEC)                                      |                                                                                                         |
| Max. voltage $U_m$                                                 | 25.2 V                                                                                                  |
| Max. current $I_m$                                                 | 96 mA                                                                                                   |
| Max. power $P_m$                                                   | 605 mW                                                                                                  |
| Max. capacitance $C_a$ for [EEEx ia] IIC / IIB                     | 90 nF / 580 nF                                                                                          |
| Max. inductance $L_a$ for [EEEx ia] IIC / IIB                      | 4.4 mH / 16 mH                                                                                          |
| Further information and combinations of values, see certifications |                                                                                                         |

| Technical data                                                                                                                                                                                                       |                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Power supply                                                                                                                                                                                                         |                          |
| Rated voltage $U_N$                                                                                                                                                                                                  | 24 V DC                  |
| Voltage range                                                                                                                                                                                                        | 18 .. 35 V               |
| Rated current (for $U_N$ , $I_L = 20$ mA) $I_N$                                                                                                                                                                      | 55 mA                    |
| Max. power consumption                                                                                                                                                                                               | 1.4 W                    |
| Polarity reversal protection                                                                                                                                                                                         | yes                      |
| Signal transmission                                                                                                                                                                                                  |                          |
| The current ( $I_E$ ) fed to the analog input is transferred linearly to the I.S. output ( $I_L$ ). In addition an FSK HART signal is transferred bidirectionally between analog or communications input and output. |                          |
| Current range                                                                                                                                                                                                        | $I_L = I_E$ 3.5 .. 22 mA |
| Response time analog signal (10 .. 90%)                                                                                                                                                                              | $\leq$ 40 ms             |
| Analog input                                                                                                                                                                                                         |                          |
| Input resistance (DC)                                                                                                                                                                                                |                          |
| for communication via communication input                                                                                                                                                                            | 50 $\Omega$              |
| for communication via analog input                                                                                                                                                                                   | 600 $\Omega$             |
| Impedance for FSK-HART signals (150 Hz .. 10 kHz)                                                                                                                                                                    | $\geq$ 500 $\Omega$      |
| Polarity reversal protection                                                                                                                                                                                         | yes                      |
| Communications input                                                                                                                                                                                                 |                          |
| Impedance for FSK-HART signals                                                                                                                                                                                       |                          |
| 1 kHz .. 10 kHz, output open                                                                                                                                                                                         | $\geq$ 5.8 k $\Omega$    |
| otherwise: = valve impedance                                                                                                                                                                                         |                          |
| Number of parallel connectable comm. inputs:                                                                                                                                                                         |                          |
| Impedance of the parallel connected valves                                                                                                                                                                           | $\geq$ 200 $\Omega$      |
| Output                                                                                                                                                                                                               |                          |
| Range of load resistance $R_L$ (DC)                                                                                                                                                                                  | 0 .. 700 $\Omega$        |
| Impedance for FSK-HART signals                                                                                                                                                                                       |                          |
| (1 kHz .. 10 kHz)                                                                                                                                                                                                    |                          |
| Communication input open                                                                                                                                                                                             | $\geq$ 5.8 k $\Omega$    |
| otherwise: = impedance of HHT at comm. input                                                                                                                                                                         |                          |
| Analog signal error limits                                                                                                                                                                                           |                          |
| Tolerance band setting, in % of the measuring range                                                                                                                                                                  |                          |
| Linearity error at $U_N$ , 23 °C                                                                                                                                                                                     | $\leq$ 0.1 %             |
| Temperature effect                                                                                                                                                                                                   | $\leq$ 0.1 % / 10 K      |

