I.S. Isolators

I.S. Isolators (Modules)
mA Isolating Repeater
Loop Powered
Type 9111/52

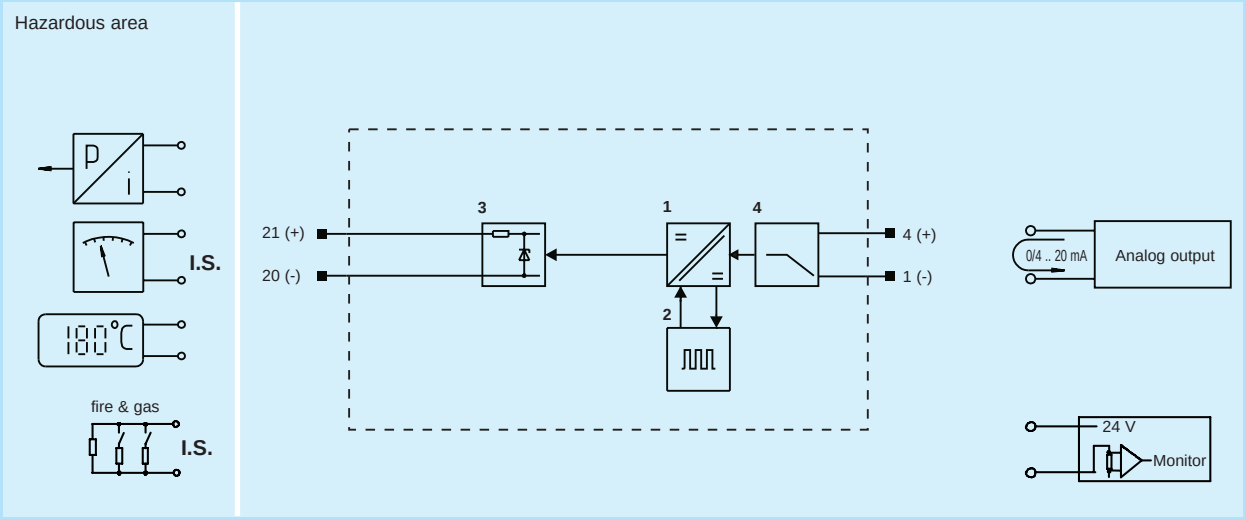
- Intrinsically safe output [EEx ia] IIC
- Galvanic isolation between input and output
- Loop powered
- Extremely low internal resistance
- HART signal transmission, bidirectional (units with revision number B and higher)
- EMC tested, CE marking

STAHL

Basic function; analog output, mA, 1 channel.

The mA isolating repeaters are used for intrinsically safe operation of control valves, i/p transmitters, analog and digital displays etc.

9111/52 is also suitable for fire & gas detectors.



Selection table	
Version	**Ordering code**
mA isolating repeater	**9111 / 52 - 11 - 00**

Safety data for output	
Certifications	BVS (Europe, CENELEC), CSA (Canada), SEV (Switzerland), FTZU (Czech Republic), EVPU (Slovakia), FM (USA)
Marking	[EEx ia] IIC/IIB according to CENELEC
Classification	associated electrical apparatus

Safe maximum values (CENELEC)	
Max. voltage U_m	25.2 V
Max. current I_m	92 mA
Max. capacitance C_a for [EEx ia] IIC / IIB	90 nF / 580 nF
Max. inductance L_a for [EEx ia] IIC / IIB	4.8 mH / 17 mH

Further information and combinations of values, see certifications

Technical data (units with revision number B and higher)

Signal transmission

The current (I_E) fed to the analog input is transferred linearly to the I.S. output (I_A). In addition a HART signal is transferred bidirectionally.

Current range (specified accuracy)	$I_A=I_E$	0..20 mA
Internal resistance (for $I_A \leq 20$ mA)	$R_{i20} \leq$	400 Ω
Response time (10 .. 90%)	$\leq$	1 ms

Input		
Input voltage	$U_E \leq$	35 V
Max. effective voltage $U_{E\ eff}$		24.5 V
Polarity reversal protection		yes

Output		
Load resistance (for I_A = 20 mA, $U_{E\ eff}$)	$R_L \leq$	820 Ω

Open-circuit		
Input behavior on open-circuit	$I_E \leq$	1.0 mA

Error limits		
in % of the measuring range		
Linearity error for R_L = 0 Ω, 23 °C		
Internal consumption	$\leq$	0.15 %
Temperature effect	$\leq$	± 0.05 % / 10K

Engineering

Calculation of input voltage U_E:
(see also Technical data)

In range I = 0 .. 22 mA:
$U \geq \underline{U_E} \geq U_L + (R_{i20}+R_l) \cdot I$

In range 22 mA < I ≤ I_m:
$U \geq \underline{U_E} \geq U_L + \Delta U + (R_i+R_l) \cdot I$

<u>The calculated value of U_E has to be smaller than the value $U_{E,eff}$ (internal limitation)!</u>