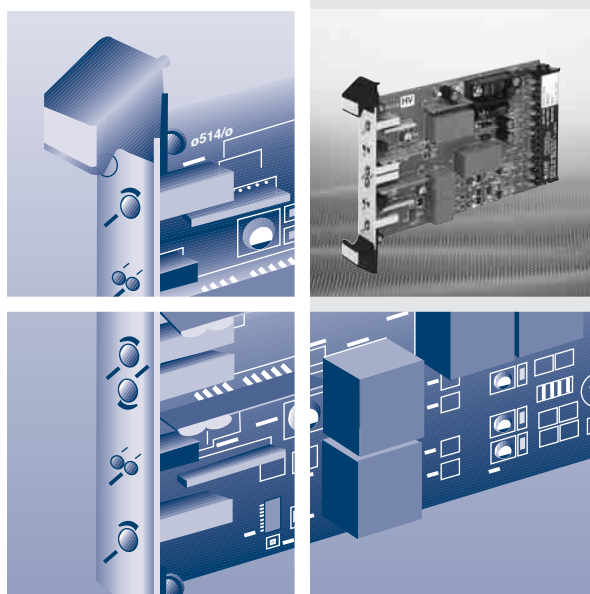


# Eurocards



# Compatibility List DIN-Rail Devices, Eurocards



## Description






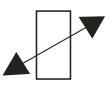

DIN-Rail devices and Eurocards act as signal conditioning devices between field mounted equipment and control systems. All the devices can be hot swapped during operation. This leaves the wiring untouched. The devices are safely galvanically isolated.

## Device table in the order of model codes

Models marked in grey are replaced by the ones without markings. Devices in the same row belonging to the same type are interchangeable. If an exchange involves a change of wiring or a functional change was made, the device model code is printed in *italics and with a spacer*. Details can be taken from the data sheets.




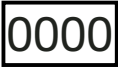
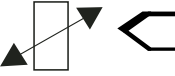

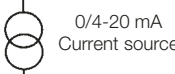
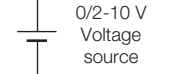




Function	Eurocards				DIN-Rail Devices				
	digi table	CEAG	Hundsbach	CEAG	digi table	Hundsbach	CEAG	2-4 chan.	230V
Frequency-Analog-Converter	fmc 103	EU 103	77746	<i>EU 103</i>			DN 103		
Temperature 2,3 wire Pt100	rnc 124	<i>EU 137A</i>	MT 200	AH 137A		90100	<i>4/125</i>		
Temperature 2,4 wire Pt100	rnc 125	EU 125A	MT 200	AH 137A					
Temperature 2,4 wire Pt100	2/125	EU 125A				90575	<i>4/125</i>		
Voltage, current	umc 126	EU 137A	MT 200	<i>AH 137A</i>			<i>4/126</i>		
Thermocouples	2/127	EU 137A				90525	<i>4/127</i>		
Thermocouples	tlmc 127	EU 137A	MT 200	<i>EU 137A</i>		90100	<i>4/127</i>		
Universal transmitter	1/137	EU 137A							
Trip amplifier	cls 208	2/208	77708	2/208		90716	<i>3/209</i>		90716
Trip amplifier Pt100	rls 208	<i>EU 137A</i>	MT 200	AH 137A	rl 210		DN 218		
Trip amplifier TC	tls 208	<i>EU 137A</i>					DN 218		
Trip amplifier 4 channels		1/209							
Trip amplifier TÜV, 4 channels		2/209							
Trip amp. + transmitter supply	sls 422	3/422							
Loop powered output isolator	cmc 303	EU 303	TR296	<i>EU303</i>	mc 4/303	90696	5/303	5/303	
Isolator for fire / gas detectors							6/303		
Output isolator	cmc 304	6/304	77239	AH334	mc 2/304		5/304		
Output isolator	1/304	<i>6/304</i>							
Output isolator with level shift	2/304	EU 334		AH334		90360	7/304		
Output isolator	3/304	<i>6/304</i>							
Output isolator	4/304	6/304							
Output isolator HART		6/304	AT242	AH304		90242	6/304	DN 332	90242
Analog calculator with trips		1/405							
Transmitter power supply	csmc 418	EU 420	77260	AH420	cs 4/420	90365	7/420		90365
Transmitter supply, rooting	csmc 419	<i>EU 420</i>	77261	<i>AH420</i>					
HART supply, input isolator	3/420	EU 420			cs 3/420		6/420	DN 424	90271
Transmitter supply, input isol.	4/420	EU 420					7/420	DN 424	
HART supply, input isolator	5/420	EU 420	77270	AH420	5/420,8/420	90270/71	6/420	DN 424	
HART supply + trip amp.	2/422	3/422							
HART supply, output isolator							DN 425		
Power AC 230V / DC 24V									1/482
HART Multiplexer		1/485							
Loop powered solenoid driver	2/915				ka 2/915		6/915		
Solenoid driver	4/915		VS929		ka 4/915	90829	7/915	DN 919	
Switch amplifier with transistor	1/941		TS924		ci 1/941	90924	2/941	DN 944	
Switch amplifier with relay	STR 918	2/918	TS920	<i>2/918</i>					
Switch amplifier with relay	1/942	<i>2/918</i>	77920	<i>2/918</i>	ci 1/942	90920	2/942	DN 945	2/942


**Selection chart**

	Application	Function	Type	Preferred version	Page
Binary input	 Switch	Relay output	2/918	GHG 122 2141 E 1009 4 channels (digitable)	4/18
	 Proximity switch	Frequency-analog	EU 103	GHG 121 2101 C 1006 (digitable)	4/6
	 Electronic switch				
Analog input	 4-20 mA Transmitter	HART transmitter supply	EU 420	GHG 124 2121 H 1206 2 channels (digitable)	4/15
		HART supply with 2 trips	3/422	GHG 124 2121 G 1116 (digitable)	4/16
		HART transmitter supply	AH420	GHG 124 2121 K 1206 2 channels (Hundsbach)	5/7
		HART transmitter supply	MS270	MS270-M4233-C011 2 channels (Eckardt)	5/3
		HART transmitter supply	MS271	MS271-B42EE-C010 2 channels (Hundsbach)	5/4
Analog input	 0/4-20 mA Current source	HART input isolator	EU420	GHG 124 2121 H 1206 2 channels (digitable)	4/15
		HART input with 2 trips	3/422	GHG 124 2121 G 1116 (digitable)	4/16
		HART input isolator	AH420	GHG 124 2121 K 1216 2 channels (Hundsbach)	5/7
		input isolator	TV270	TV270-L4233-C011 2 channels (Eckardt)	5/3
		input isolator	TV271	TV271-B42EE-C000 2 channels (Hundsbach)	5/4
Temperature input		2/3/4 wire, RTD	EU125A	GHG 131 2100 N 2006 (digitable)	4/7
		2/3/4 wire, RTD	EU137A	GHG 131 2100 P 2006 (digitable)	4/8
		2/3/4 wire, RTD	AH137A	GHG 131 2100 R 2006 (Hundsbach)	5/2
Temperature input		Thermocouple	EU137A	GHG 131 2100 P 2006 (digitable)	4/8
		Thermostat 12 measuring points	92161	92161-50-K-246 24 V DC	8/4
				Accessories see page	6/9

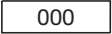






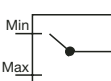


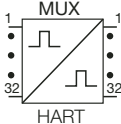

Compatibility printed in brackets.

## Selection chart

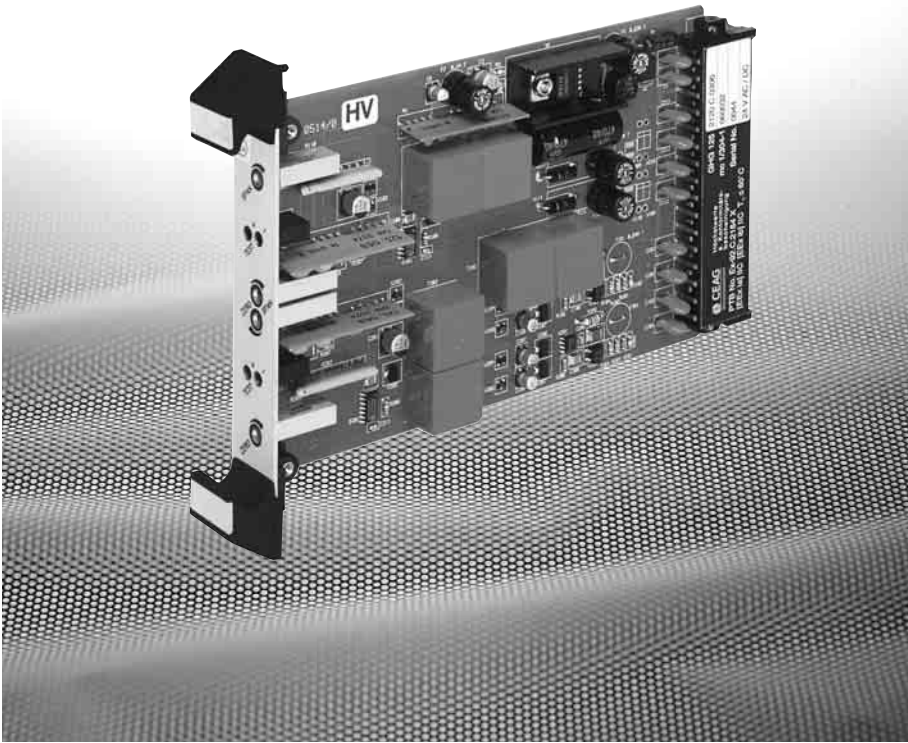
	Application	Function	Type	Preferred version	Page
Analog output	 4-20 mA I/P converter	Loop powered	EU303	EU303A-U02AAC220 2-channels (digitable)	4/12
	 Output isolator 600 Ω load level shift	HART 750 Ω load	6/304	GHG 125 2321 L 1306 2-channels (digitable)	4/13
	 Positioner	Output isolator 600 Ω load Level shift	EU334	GHG 125 2321 M 1306 2-channels (digitable)	4/14
	 Display	HART 750 Ω load	AH304	GHG 125 2321 L 1406 2-channels (Hundsbach)	5/5
Trip Amplifier	 2/3/4 wire, RTD 2 trip points	Output isolator 600 Ω load Level shift	AH334	GHG 125 2321 N 1306 2-channels (Hundsbach)	5/6
	 2/3/4 wire, RTD 2 trip points	2/3/4 wire, RTD 2 trip points	EU125A	GHG 131 2100 N 2006 (digitable)	4/7
	 0/4-20 mA Current source	2/3/4 wire, RTD 2 trip points	EU137A	GHG 131 2100 P 2006 (digitable)	4/8
	 0/2-10 V Voltage source	Thermocouples 2 trip points	EU137A	GHG 131 2100 P 2006 (digitable)	4/8
	 Relay output	2/3/4 wire, RTD 2 trip points	AH137A	GHG 131 2100 R 2006 (Hundsbach)	5/2
	 Relay output	Input 0/4-20 mA 2 trip points	2/208	GHG 137 2011 D 1016 (digitable)	4/9
	 Relay output	1-4 Input 0/4-20 mA 2-4 trip points	1/209	GHG 137 2041 B 2066 (digitable)	4/10
	 Electronic output	1-4 Input 0/4-20 mA 2-4 trip points	2/209	GHG 137 2041 C 4046 TÜV (digitable)	4/11
		HART power supply with 2 trip points	3/422	GHG 124 2121 G 1116 (digitable)	4/16
				Accessories see page	6/9

Compatibility printed in brackets.

## Selection chart

	Application	Function	Type	Preferred version	Page
	 Counter	Software 	1/209	GHG 137 2041 B 5166	4/10
<b>Specials</b>	 Filter	Software 1/405	GHG 128 2041 A 5316	4/20	
	 Linearisation	Software 1/405	GHG 128 2041 A 5316	4/20	
	 Analog/Frequency	Software 1/209	GHG 137 2011 B 5016	4/10	
	 Gradients	Software 1/209	GHG 137 2011 B 1016	4/10	
	 Sample and hold	Software 1/405	GHG 128 2041 A 5316	4/20	
	 Min/Max select	Software 1/405	GHG 128 2041 A 5316	4/20	
	 Averager	Software 1/405	GHG 128 2041 A 5316	4/20	
	 Test signal generator	Software 1/405	GHG 128 2041 A 5316	4/20	
	 MUX HART	HART Bus coupler 	1/485	GHG 139 2021 B 1009	4/21
				Accessories see page	6/9

## Eurocards digi table compatible



- 1 to 4 channels just 4 units wide
- Mounted in prewired 19" racks with 21 slots or in prefabricated rack systems with 16 plug-in positions
- Plug-in modules for analogue or digital I/O cards
- Safe galvanic isolation
- Status LEDs
- Low power consumption
- EEx ia/ib approved
- Suitable for DCS and PLC

### Description

Eurocards are used as signal conditioning units between field devices and control systems. They plug into standard prewired racks or prefabricated ISES backplane systems. The cards may be mounted or removed from a live circuit.

Eurocards offer advantages in that they are galvanically isolated, they can boost and amplify signals, and are easily mounted as plug-in units. Since they are galvanically isolated they do not require equipotential earth connections normally encountered with safety barriers. Changes in the power supply voltage do not affect the excellent device performance due to the properties of the built-in amplifier circuits.

Light emitting diodes (LEDs) indicate the device status. A green LED shows the operating condition, a yellow LED depicts the switch status as in switch amplifiers, and a red LED signals alarm conditions e.g. line faults and interruptions.

It is often advantageous to employ Eurocards as their properties as amplifiers free you from the restrictions on measuring circuits frequently encountered with barriers.

For safety reasons you have to check that currents, voltages, power, inductance, and capacitance of the Eurocard match those of the connected intrinsically safe circuit.

# Model EU103 Frequency to Analog Converter Pulse Isolator compatible with Model fmc 103



## Product features

- Configurable on-line using PLC or PCs
- Frequency, flow, rotational speed
- EMC to EN 61326 and NE21
- EEx ia/ib approved
- Safe galvanic isolation between input, output and power supply

## Technical data:

Input	Initiator, Vortex
Measuring ranges	1 Hz-10 kHz configurable
Output	0/4 - 20 mA at 750 Ω convertible 0/2 - 10 V at > 1k Ω convertible
Linearity/TK	0.1 % / 0.1 % per 10 K
Transistor output	30 V / 50 mA short circuit protected, 2 kHz max., monostable
Response time	≥ 2 periods
Power supply	20.4 - 24.6 V AC, 4 VA 20 - 30 V DC, 3 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	250 g
Ambient temperature	-20 °C ... +60 °C
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation

## Explosion protection:

Category	II (1) GD [EEx ia/ib] IIC
EC-Type Examination	TUV 00 ATEX 1614 X
Safety values	Vortex: $V_{oc} = 26.3 \text{ V}$ , $I_{sc} = 93 \text{ mA}$ , $P_o = 610 \text{ mW}$ NAMUR: $V_{oc} = 8.6 \text{ V}$ , $I_{sc} = 19 \text{ mA}$ , $P_o = 40 \text{ mW}$

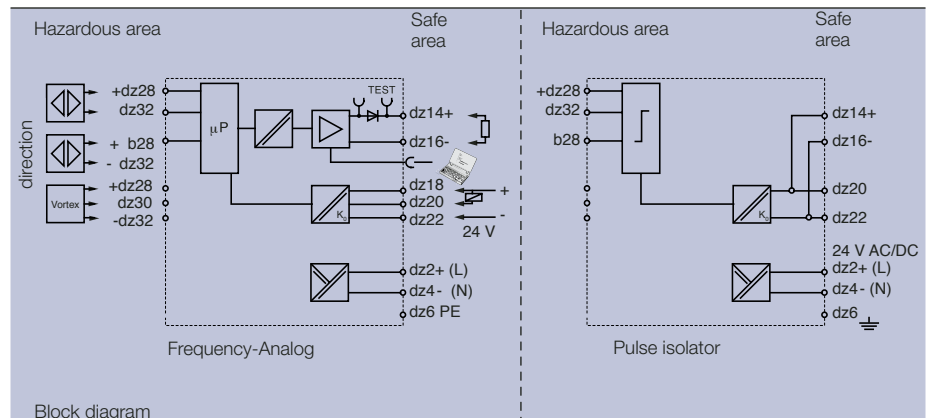
## Ordering details

Input	Output	Pulse output	Ex	Order No.
NAMUR	0/4 - 20 mA	1:1 Impulse*	ia/ib	GHG 121 2101 C 1006
Vortex	0/4 - 20 mA	1:1 Impulse*	ia/ib	GHG 121 2151 C 1006
NAMUR	-	1:1 Impulse	ia/ib	GHG 121 2101 C 2006
Vortex	-	1:1 Impuls e	ia/ib	GHG 121 2151 C 2006

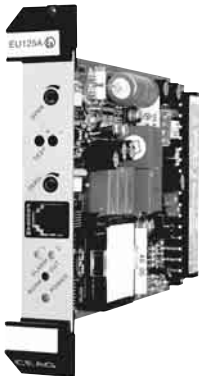
\*Pulse output convertible to trip output, direction of rotation, line monitor

## Accessories

Description	Order No.
ISES 701 System Backplane	GHG 139 4190 A 7016
Programming cable	GHG 139 0004 C 0000



# Model EU125 A Temperature Converter for 2-/3-/4-Wire RTD compatible with Models rmc125, 2/125



## Product features

- Configurable online using PLC or PCs
- Trip output relays
- EMC to EN 61326 and NE21
- EEx ia/ib approved
- Safe galvanic isolation between input, output, power supply and contacts

## Technical data:

-Input RTD	-200 °C ... +850 °C
ex works 4 wire 0-100 °C	0 ... 600 Ω, smallest span 10 Ω (0.1 %)
Output	0/4 - 20 mA, 0/2 - 10 V, convertible
Burn out drive	selectable 0, >100 %, frozen
Load	750 Ω (mA), > 22 kΩ (V)
Output relay	
Voltage rating	AC 125 V    150 V DC
Current rating	1 A AC/DC
Power rating	50 VA        30 W
Linearity	< 0.1 %
Temperature drift	< 0.1 % / 10 K
Response time	0.7 ... 1 s, mode dependant
Power supply	20.4 - 26.4 V AC (<5 VA) DC 20.4 ... 30 V (<2.4 W)
Dimensions (Eurocard)	100 x 160 mm
Weight	300 g
Ambient temperature	- 10 °C ... + 65 °C
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation
Protection	IP20

## Explosion protection:

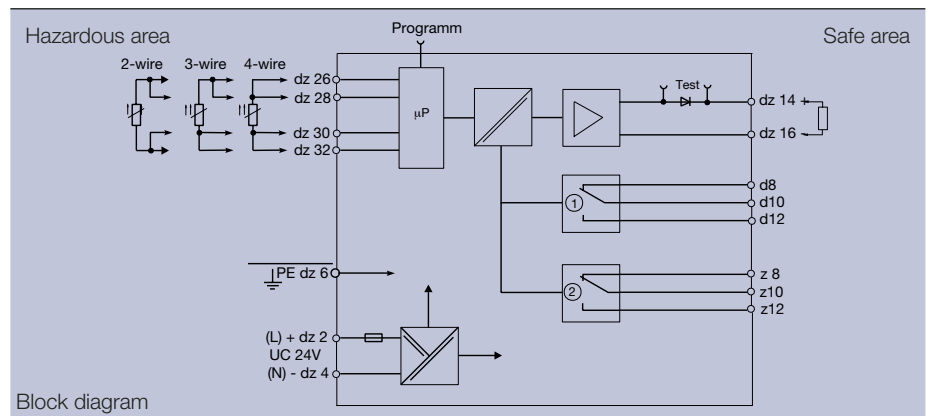
Category	II (1) GD [EEx ia/ib] IIC
EC-Type Examination	TÜV 02 ATEX 1944
Safety values	V <sub>oc</sub> < 6 V, I <sub>oc</sub> < 10 mA, P <sub>o</sub> < 40 mW

## Ordering details

Input	Output	Trip relays	Ex-protection	Order No.
RTD	4 - 20 mA	2	ia/ib	GHG 131 2100 N 2006
RTD	4 - 20 mA	2	-	GHG 131 2000 N 2006

## Accessories

Description	Order No.
Programming cable	GHG 139 0006 C 0000
ISES 701 system backplane	GHG 139 4190 A 7016





# Model EU137 A

## Multi Purpose Converter

### for RTD, Thermocouples, mV

#### compatible with Models t1mc127, 2/127, 1/137, 124, 2/124



### Product features

- Configurable using PC (Online)
- Trip amplifier with relay
- EMC compliant to EN61326, NE21
- EEx ia/ib approved
- Safe galvanic isolation between input, output, power supply and relay output

### Technical data:

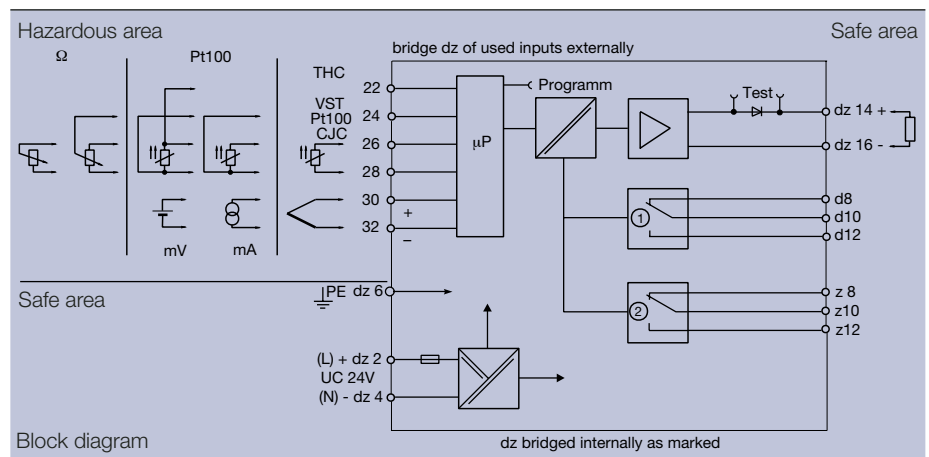
-Input RTD (ex works 4 wire 0-100 °C)	-200 °C ... +850 °C
-Slide wire input	0 ... 600 Ω, smallest span 10 Ω (0.1 %)
-Thermocouple input	B, E, J, K, N, R, S, T, L, U, Pallaplat
-mV	-10 mV ... +80 mV, smallest span 1.5 mV
-Cold junction compensation	internal or external
Output	0/4 - 20 mA, 0/2 - 10 V, convertible
Burn-out drive	selectable 0, >100 %, frozen
Load	750 Ω (mA), > 22 kΩ (V)
Output relay	
Voltage rating	AC 125 V, 150 V DC
Current rating	1 A AC/DC
Power rating	50 VA/30 W
Linearity	< 0.1 %
Temperature drift	< 0.1 % / 10 K
Response time	0.42 ... 0.7 s, mode dependant
Power supply	20.4 - 26.4 V AC (<5 VA) DC 20.4 ... 30 V (<2.4 W)
Dimensions (Eurocard)	100 x 160 mm
Weight	300 g
Ambient temperature	- 10 °C ... + 65 °C
Relative humidity	< 75 % (average)
	< 95 % (30 d/a), no condensation
Protection	IP20

### Explosion protection:

Category	II (1/2) GD [EEx ia/ib] II C
EC-Type Examination	TUV 02 ATEX 1945
Safety values	V <sub>oc</sub> < 6 V, I <sub>oc</sub> < 12 mA, P <sub>o</sub> < 47 mW R <sub>i</sub> = 1.56 kΩ, characteristic: trapezoidal

### Ordering details

Input	Output	Trip relays	Ex-protection	Order No.
TC/RTD	4 - 20 mA	2	ia/ib	GHG 131 2100 P 2006
TC/RTD	4 - 20 mA	2	-	GHG 131 2000 P 2006
Programming cable				GHG 139 0006 C 0000
ISES 701 system backplane				GHG 139 4190 A 7016
Cold junction compensation CJC				GHG 139 0010 C 0000



# Model 2/208 Trip Amplifier with 1-2 Trip Points compatible with Models cls 208, 208 E



## Product features

- Digital display
- Trip settings via front push buttons
- Self monitoring
- EMC to EN 61326 and NE21
- Safe galvanic separation between input, power supply and contacts
- Line monitor

## Technical data:

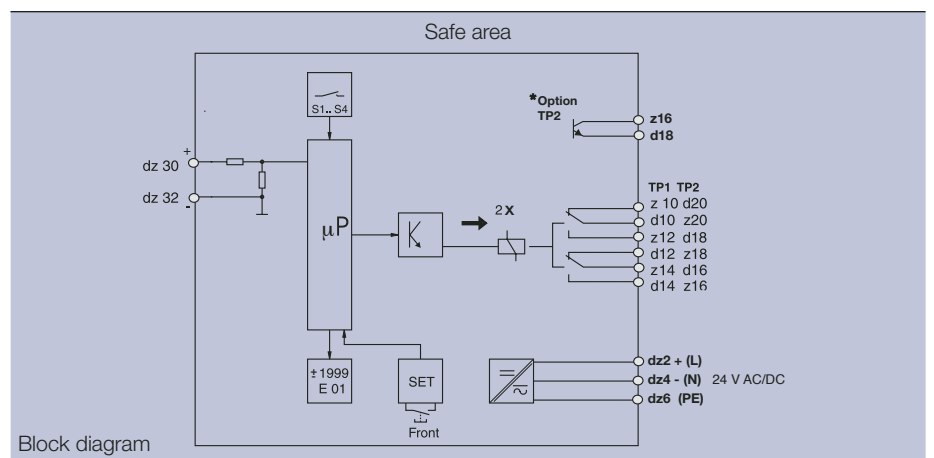
Input	0/4 - 20 mA, (0/1 - 5 V see operating instruction)	
Input impedance	50 Ω (mA) 10 kΩ (V)	
Output		
Relay	Voltage rating	250 V AC / 150 V DC
	Current rating	1.25 A AC / DC
	Power rating	60 VA / 30 W
	Mechanical life	20 Mio. operations
	Electrical life	0.5 Mio. operations
	Response time	> 20 ms (variable)
Transistor	Voltage drop	24 V max. 30 V DC / 100 mA
	Response time	2 V > 10 ms (variable)
Temperature drift	< 0.1 % / 10 K	
Power supply	20 - 26.4 V AC 20 - 30 V DC	
Power consumption	2 VA / 1.5 W	
Dimensions (Eurocard)	100 x 160 mm, 4 uw	
Weight	300 g	
Ambient temperature	-10 °C ... +60 °C	
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation	

## Ordering details

Input	Output	Trip relays	Order No.
0/4 - 20 mA	2 relays	1 min. / 1 max.	GHG 137 2011 D 1016
0/4 - 20 mA	1 relay, 1 Trans.*	1 min. / 1 max. DIP switch selectable	GHG 137 2011 D 9016

## Accessories

Description	Order No.
ISES 720 system backplane	GHG 139 4090 A 7206



# Model 1/209 Trip Amplifier with 1-4 Trip Points



## Product features

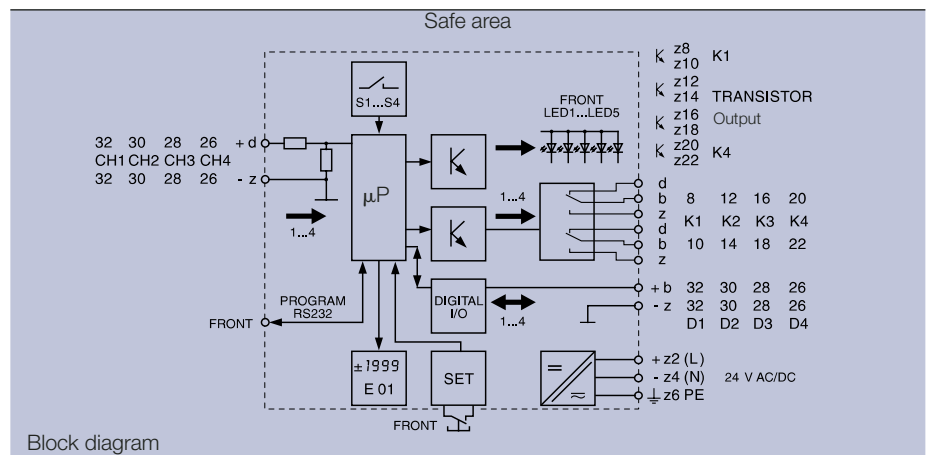
- Programmable 2 of 3 selection, ext. set points, gradients, ratios, min./max.-selection
- Digital display in engineering units
- Self monitoring
- EMC to EN 61326 and NE21
- Safe galvanic isolation between input, power supply and contacts
- Line monitor

## Technical data:

Input	0/4 - 20 mA, (0/1 - 5 V see operating instruction)
Input impedance	25 Ω (mA) 10 kΩ (V)
Output	
Relay	
Voltage rating	250 V AC / 150 V DC
Current rating	2 A AC / DC
Power rating	60 VA / 30 W
Mechanical life	10 Mio. operations
Electrical life	0.5 Mio. operations
Response time	> 20 ms (variable)
Transistor	24 V max. 30 V DC / 100 mA
Voltage drop	2 V
Response time	> 10 ms (variable)
Temperature drift	< 0.1 % / 10 K
Power supply	18 - 26,4 V AC 18 - 30 V DC
Power consumption	2 VA / 1.5 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	300 g
Ambient temperature	-10 °C ... +60 °C
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation

## Ordering details

Input	Output	Software	Order No.
1x 0/4 - 20 mA	2 relays	1 min. / 1 max.	GHG 137 2011 B1016
1x 0/4 - 20 mA	2 rel. 2 Tran.	1 min. / 1 max.	GHG 137 2011 B5016
4x 0/4 - 20 mA	4 relays	4 trip points *	GHG 137 2041 B2066
4x 0/4 - 20 mA	2 rel. 2 Tran.	4 trip points, 4 digital I/O	GHG 137 2041 B5166
soldered jumpers			
Programming cable			GHG 139 0006 C 0000
ISES 720 system backplane			GHG 139 4090 A 7206



# Model 2/209 TÜV Approved Safety Trip Amplifier, 1-4 Trip Points



## Product features

- Programmable (2 out of 3 selection, external set points, gradients, ratios, min./max.-selection)
- Digital display in engineering units, trip settings via front push-buttons
- Self monitoring
- EMC to EN 61326 and NE21
- Safe galvanic isolation between input, power supply and contacts
- Integrated line monitor
- Safety class 4 and 5 to DIN 19250

## Technical data:

Input	0/4 - 20 mA, (0/1 - 5 V see operating instruction)
Input impedance	50 Ω (mA) 10 kΩ (V)
Output relay	Voltage rating 250 V AC / 30 V DC Current rating 2 A AC / DC Power rating 500 VA / 60 W Mechanical life 50 Mio. operations Electrical life 0.5 Mio. operations Response time > 20 ms (variable)
Temperature drift	< 0.1 % / 10 K
Power supply	18 - 26.4 V AC 18 - 30 V DC
Power consumption	2.5 VA / 2 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	300 g
Ambient temperature	-10 °C ... +60 °C
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation

## Ordering details

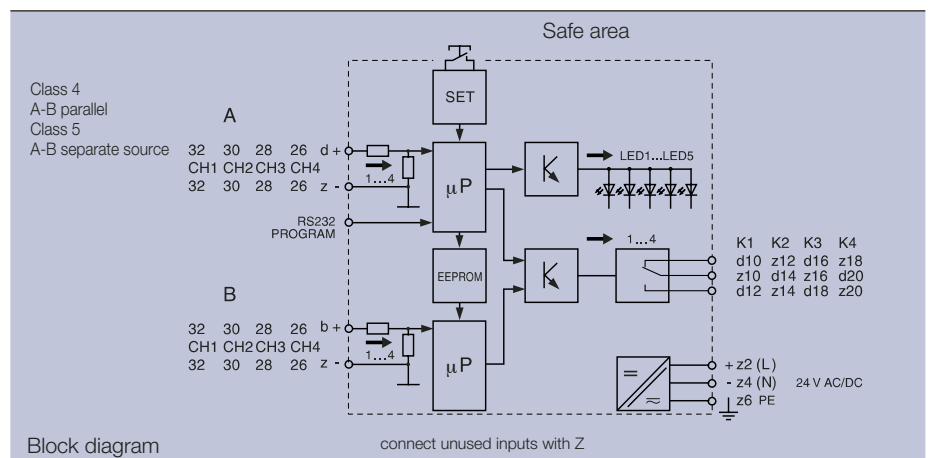
Input	Output	Software	Order No.
4x A 0/4 - 20 mA	4 relays	4 trip points *	GHG 137 2041 C4046
4x B 0/4 - 20 mA			

soldered jumpers

\* standard settings

## Accessories

Description	Order No.
Programming cable	GHG 139 0006 C 0000

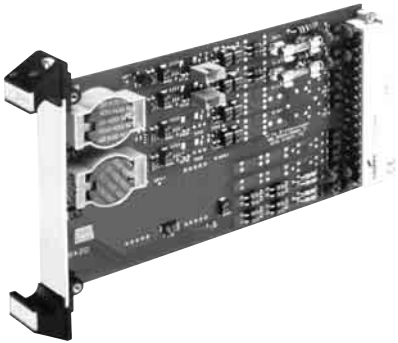


# Model EU303

## Analog Output

## Loop Powered

## compatible with Model cmc 303



### Product features

- Supplies 4 - 20 mA in hazardous areas (I/P converters, indicators, positioners)
- Safe galvanic isolation between input and output
- Short circuit protected outputs
- EMC to EN 61326 and NE21
- EEx ia/ib approved

### Technical data:

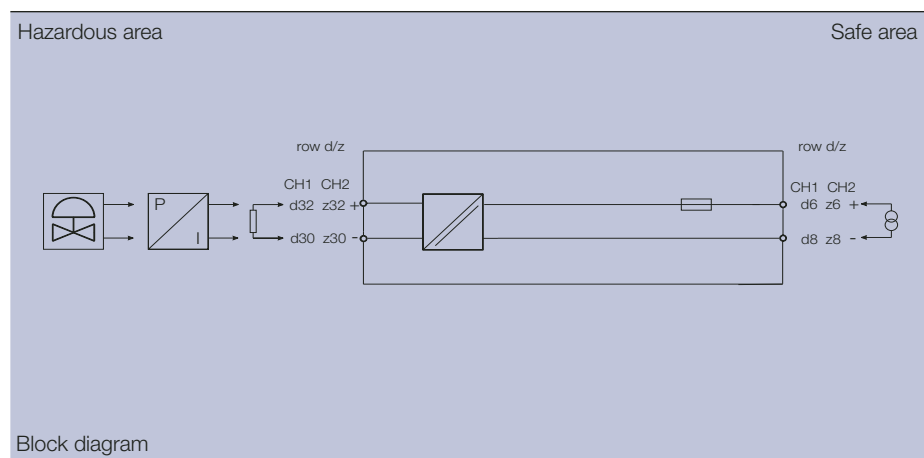
Loop supply to EEx ( $V_{oc}$ 12.6 V)	5.4 V + 0.02 x load
Loop supply to EEx ( $V_{oc}$ 16.8 V)	5.4 V + 0.02 x load
Loop supply to EEx ( $V_{oc}$ 25.2 V)	8.4 V + 0.02 x load
Linearity	< 0.1 %
Temperature drift	< 0.1 % / 10 K
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	300 g
Ambient temperature	- 20 °C ... + 65 °C
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation

### Explosion protection:

Category	II (1) G [EEx ia/ib] II C
EC-Type Examination	TUV 99 ATEX 1516
Safety values	$V_{oc}$ < 25.2 V, $I_{sc}$ < 93.3 mA, $P_o$ < 588 mW $V_{oc}$ < 16.8 V, $I_{sc}$ < 141 mA, $P_o$ < 594 mW $V_{oc}$ < 12.6 V, $I_{sc}$ < 106 mA, $P_o$ < 334 mW

### Ordering details

Type	Channels	Ex-protection	Order No.
EU303	2	ia/ib $V_{oc}$ < 25.2 V	EU303A-U02AAC220
EU303	2	ia/ib $V_{oc}$ < 16.8 V	EU303A-U02AAC520
EU303	2	ia/ib $V_{oc}$ < 12.6 V	EU303A-U02AAC420



# Model 6/304

## Analog Output

## HART

### compatible with Models 4/304, 2/304, cmc 304



#### Product features

- Analog output for 4 - 20 mA Signals (I/P converter, displays, positioners)
- Short circuit protected outputs
- EMC to EN 61326 and NE21
- EEx ia/ib approved
- Safe galvanic isolation between input, output and power supply
- HART Communication for field devices of all majors brands

#### Technical data:

Input impedance	dyn. 250 Ω, static 50 Ω, 300 Ω on power failure
Load	750 Ω
Linearity	< 0.1 %
Temperature drift	< 0.1 % / 10 K
Response time	22 ms (10 - 90 %)
Power supply	20 - 26.4 V AC 20 - 30 V DC
Power consumption	
1 channel	22 VA / 1.4 W
2 channels	4 VA / 2.6 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	250 g
Ambient temperature	-20 °C ... +70 °C (60 °C Ex)
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation

#### Explosion protection:

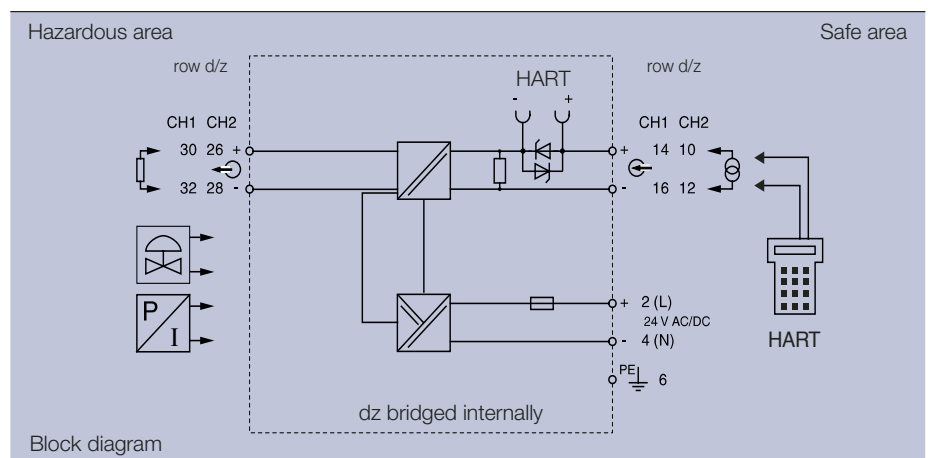
Category	II (1) G [EEx ia] IIC
EC-Type Examination	TÜV 98 ATEX 1278 X
Safety values	V <sub>oc</sub> < 27.3 V, I <sub>sc</sub> < 93 mA, P <sub>o</sub> < 635 mW

#### Ordering details

Type	Input/Output	Channels	Ex-protection	Order No.
6/304	0/4 - 20 mA	1	ia/ib	GHG 125 2311 L 1306
6/304	0/4 - 20 mA	2	ia/ib	GHG 125 2321 L 1306
6/304	0/4 - 20 mA	1	-	GHG 125 2011 L 1306
6/304	0/4 - 20 mA	2	-	GHG 125 2021 L 1306

#### Accessories

Type	Order No.
ISES 701 System Backplane	GHG 139 4190 A 7016



# Model EU334 Output Isolator with Level Shift Option compatible with Models 6/304, 4/304, 2/304, cmc 304



## Product features

- Output isolator for 0/4 - 20 mA (I/P converter, displays, valve positioners)
- Short circuit protected outputs
- EMC compliant to EN 61326, NE21
- EEx ia/ib approved
- Safe galvanic isolation between input and output
- Live-Zero-converter (pluggable)

## Technical data:

Input resistance	25 $\Omega$
Load	600 $\Omega$
Linearity	$\leq 0.1\%$
Temperature drift	$\leq 0.1\%$ / 10 K
Response time	100 ms (10 - 90 %)
Power supply	20 - 26.4 V AC 20 - 30 V DC
Power consumption	
1 channel	2.3 VA / 1.4 W
2 channels	4 VA / 2.6 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	250 g
Ambient temperature	- 20 °C ... + 70 °C (60 °C Ex)
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation

## Explosion protection:

Category	II (1/2) G D [EEx ia/ib] II C
EC-Type Examination	PTB 02 ATEX 2175 X
Safety values	$V_{oc} < 27.3$ V, $I_{sc} < 93$ mA, $P_o < 635$ mW

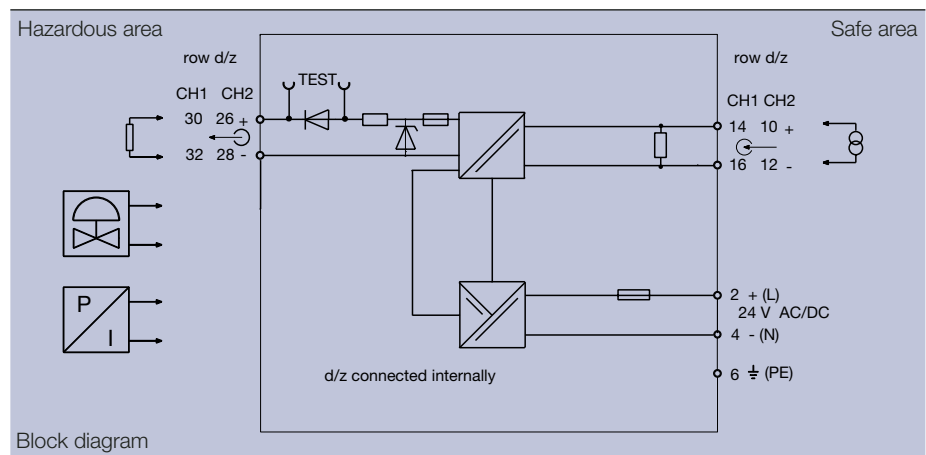
## Ordering details

Type	Input/Output	Channels	Ex-protection	Order No.
EU334	0/4 - 20 mA	1	ia/ib	GHG 125 2311 M 1306
EU334	0/4 - 20 mA	2	ia/ib	GHG 125 2321 M 1306
EU334	0/4 - 20 mA	1	-	GHG 125 2011 M 1306
EU334	0/4 - 20 mA	2	-	GHG 125 2021 M 1306

Level shifting 0 - 20 mA to 4 - 20 mA via jumper  
Voltage input available via solder jumper (5 V, 10 V)

## Accessories

Type	Order No.
ISES 701 system backplane	GHG 139 4190 A 7016



Block diagram

# Model EU420

## Transmitter Power Supply, Input Isolator

### HART

compatible with Models 419, 2/419, 420, 2/420, 3/420, 4/420



#### Product features

- Supplies 2-wire (4 - 20 mA) transmitter in the hazardous area
- EMC to EN 61326 and NE21
- EEx ia/ib approved
- Safe galvanic separation between input, output and power supply
- HART Communication for field devices of all major brands
- Test connector HART/ma

#### Technical data:

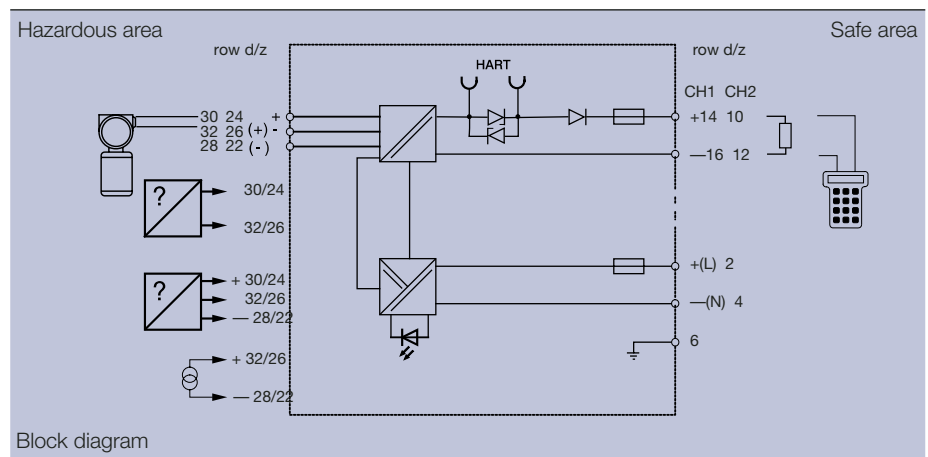
Field device power supply	15.5 V at 20 mA ( $V_{oc}$ 27 V)
input isolator	14.5 V at 20 mA ( $V_{oc}$ 24 V)
Input impedance (input isolator)	150 $\Omega$ , dyn. 250 $\Omega$ (HART)
Load	$\leq$ 750 $\Omega$ , at HART/FSK $<$ 500 $\Omega$
Response time	$<$ 22 ms (10 - 90 %)
HART communication	across load or front connector
Linearity	$\leq$ 0.2 %
Temperature drift	$\leq$ 0.2 % / 10 K
Power supply	DC 20-30 V ( $<$ 4.5 W 2-channel) AC 20-26.4 V ( $<$ 3 VA / channel)
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	300 g
Ambient temperature	- 20 °C ... + 60 °C
Relative humidity	$<$ 75 % (average) $<$ 95 % (30 d/a), no condensation

#### Explosion protection:

Category	II (1/2) GD [EEx ia/ib] II C/B
EC-Type Examination	TUV 02 ATEX 1937 X
Safety values	$V_{oc} <$ 27 V, $I_{sc} <$ 92 mA, $P_o <$ 620 mW $V_{oc} <$ 24 V, $I_{sc} <$ 82 mA, $P_o <$ 490 mW $V_{oc} <$ 5 V, $I_{sc} <$ 50 mA, $P_o <$ 62 mW (Isolator)

#### Ordering details

Type	Ex-protection	Channels	HART	Order No.
EU420	ia/ib $V_{oc} <$ 27 V, $I_{sc} <$ 92 mA	1	X	GHG 124 2111 H 3206
EU420	ia/ib $V_{oc} <$ 24 V, $I_{sc} <$ 82 mA	1	X	GHG 124 2411 H 3206
EU420	-	1	X	GHG 124 2011 H 3206
EU420	ia/ib $V_{oc} <$ 27 V, $I_{sc} <$ 92 mA	2	X	GHG 124 2121 H 3206
EU420	ia/ib $V_{oc} <$ 24 V, $I_{sc} <$ 82 mA	2	X	GHG 124 2421 H 3206
EU420	-	2	X	GHG 124 2021 H 3206
EU420	ia/ib $V_{oc} <$ 27 V, $I_{sc} <$ 92 mA	1	-	GHG 124 2111 H 1006
EU420	ia/ib $V_{oc} <$ 24 V, $I_{sc} <$ 82 mA	1	-	GHG 124 2411 H 1006
EU420	-	1	-	GHG 124 2011 H 1006
EU420	ia/ib $V_{oc} <$ 27 V, $I_{sc} <$ 92 mA	2	-	GHG 124 2121 H 1006
EU420	ia/ib $V_{oc} <$ 24 V, $I_{sc} <$ 82 mA	2	-	GHG 124 2421 H 1006
EU420	-	2	-	GHG 124 2021 H 1006
Access.	ISES 701 system backplane			GHG 139 4190 A 7016





# Model 3/422

## Transmitter Power Supply, Trip Amplifier

### Input Isolator HART

compatible with Models sls 422, 2/422



#### Product features

- Supplies 2- or 3-wire (4 - 20 mA) transmitter in the hazardous area
- Trip monitoring with 2 relays
- LCD
- Short circuit protected outputs
- EMC to EN 61326 and NE21
- EEx ia/ib approved
- Safe galvanic isolation between input, output, power supply and contacts

#### Technical data:

Field device power supply	17 V at 20 mA (U <sub>z</sub> 28 V) 15 V at 20 mA (U <sub>z</sub> 24 V)
Input resistor for externally powered field devices	150 Ω, dyn. 250 Ω
Load	750 Ω (mA)
Burn out monitor	< 3.6 mA, > 21 mA
Relay	Voltage rating 250 V AC / 150 V DC Current rating 1.2 A AC / DC Power rating 60 VA / 30 W Service life/operations 10 Mio. mech./0.5 Mio. elect. Response time 20 ms (relay)
Response time	22 ms (10-90 %)
Linearity	< 0.2 %
Temperature drift	< 0.2 % / 10 K
Power supply	20 - 30 V DC / 20 - 26.4 V AC
Power consumption	5.3 VA / 3.6 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	300 g
Ambient temperature	-20 °C ... +70 °C (60 °C Ex)
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation

#### Explosion protection:

Category	II (1) GD [EEx ia] IIC
EC-Type Examination	TUV 98 ATEX 1373 X
Safety values	V <sub>oc</sub> < 27.1 V, I <sub>sc</sub> < 93 mA, P <sub>o</sub> < 630 mW V <sub>oc</sub> < 24 V, I <sub>sc</sub> < 74 mA, P <sub>o</sub> < 444 mW V <sub>oc</sub> < 5 V, I <sub>sc</sub> < 50 mA, P <sub>o</sub> < 62 mW (Isolator)

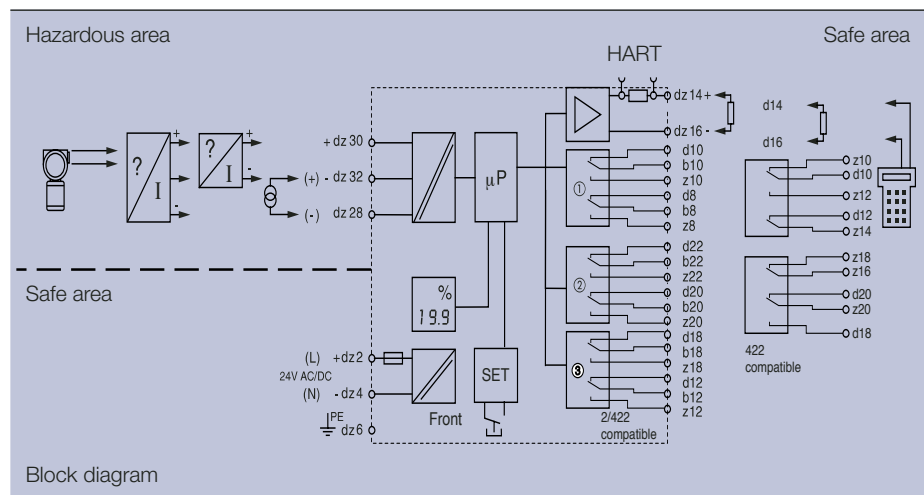
#### Ordering details

Type	Input	Output	Trip points	Ex ia/ib		Order No.
				V <sub>oc</sub> /V	I <sub>sc</sub> /mA	
3/422-1	0/4 - 20 mA	0/4 - 20 mA	2 relays	27.1	93	GHG 124 2121 G 1116
3/422-4	0/4 - 20 mA	0/4 - 20 mA	2 relays	24	74	GHG 124 2421 G 1116

Standard setting 1 min., 1 max. line monitor affects both relays, 2/422 compatibility

3/422-1	0/4 - 20 mA	0/4 - 20 mA	2 relays	27.1	93	GHG 124 2121 G 1216
3/422-4	0/4 - 20 mA	0/4 - 20 mA	2 relays	24	74	GHG 124 2421 G 1216

Standard setting 1 min., 1 max. line monitor affects both relays, sls 422 compatibility



# Model 2/918

## Multi Channel Switch Amplifier

### 2 Contacts per Channel

### compatible with Model STR 918



#### Product features

- 4 signal isolators on one Eurocard
- Input circuits suitable for mechanical contacts, two-wire proximity switches acc. to DIN 19234 or NAMUR or for opto-electronic switches
- Individual internal inversion of the mode of operation
- Individual switching-off of line break monitor for each channel possible
- Indication of relay switching state by means of LED on the front panel
- Galvanic isolation between the input circuits, the relay contacts and the power supply
- EMC to EN 61326 and NE21

#### Technical data:

Input	max. 4 proximity switches DIN 19234
Output	max. 4 relays with twin contacts, optional configuration as make or break contact
Output relay	max. 250 V AC / 30 V DC
Voltage rating	2 A
Current rating	120 VA (AC)/60 W (DC)
Power rating	10 Mio. operations
Mechanical life	20 Hz relay limit
Max. input frequency	via jumpers
Phase reversal	20.4 V bis 30 V DC
Power supply	1 W (2-channel)/1.8 W (4-channel)
Power consumption	- 20 °C to + 60 °C
Ambient temperature	3K3 acc. to EN 60721-3
Climatic conditions	approx. 140 g
Weight	IP 20
Protection	

#### Explosion protection:

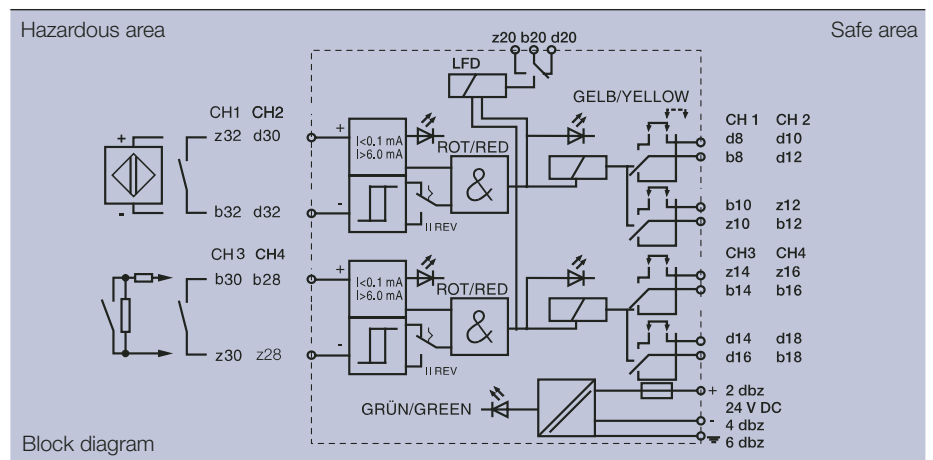
Category	II (1) GD [EEx ia/ib] II C
EC-Type Examination	TUV 99 ATEX 1483 X
Safety values	4 channel: $V_{oc} < 13.3 \text{ V}$ , $I_{sc} < 48 \text{ mA}$ , $P_o < 150 \text{ mW}$ 2 channel: $V_{oc} < 13.3 \text{ V}$ , $I_{sc} < 32 \text{ mA}$ , $P_o < 100 \text{ mW}$

#### Ordering details

Type	Channels	Order No.
2/918 multiple switch amplifier 918 compatible	2	GHG 122 2121 E1009
2/918 multiple switch amplifier 918 compatible	4	GHG 122 2141 E1009

#### Accessories

Type	Order No.
ISES 711 system backplane	GHG 139 4190 A 7116



## Specials

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### **Model 1/405**

With software for different tasks e.g.  
Analogue filter  
Linearization  
Analog/Frequency-conversion  
Gradient-Monitoring  
Counter  
Min./Max. select  
Sample and hold  
Averager  
Test signal generator

### **Model 1/485**

HART communication  
with Bus-connection

# Model 1/405 Analog Calculator with 1-4 Inputs and Trip Points



## Product features

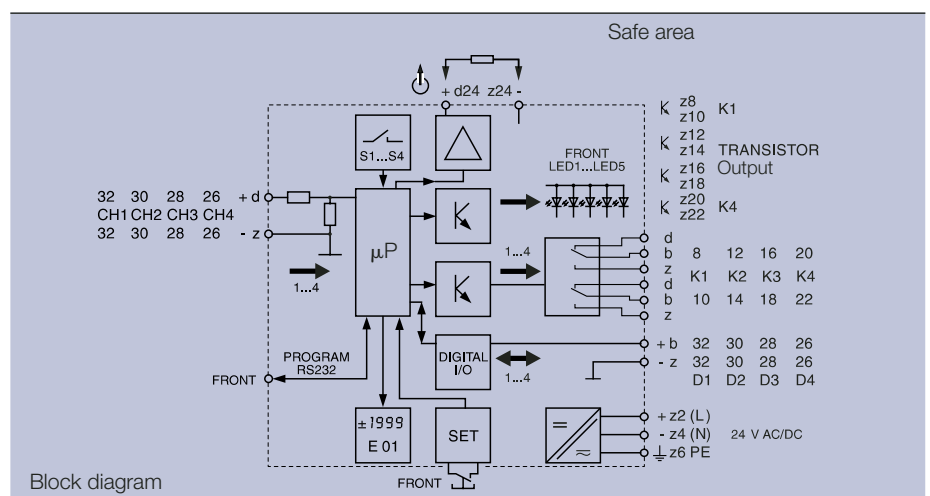
- Computes flow, consumption, efficiency factor, ratios, sums, differences etc.
- 2 or 3 selection, ext. set points, gradients
- 1-4 inputs, 1 output,
- 1-4 trip relays
- EMC to EN 61326 and NE21
- Safe galvanic separation between input, power supply and contacts

## Technical data:

Function	PC-programmable (Standard Menu)	
Input impedance	50 Ω (mA) / 10 kΩ (V)	
A/D-converter	0.1 % resolution	
Output:		
Relay	Voltage rating	250 V AC / 150 V DC
	Current rating	2 A AC / DC
	Power rating	60 VA / 30 W
	Service life/operations	10 Mio. mechan. / 0.5 Mio. electr.
Transistor	Voltage drop	2 V
	Response time	> 10 ms (variable) max. 500 Hz
Analog output	0/4 - 20 mA	
Load	500 Ω	
Linearity	< 0.1 %	
Temperature drift	< 0.1 % / 10 K	
Power supply	18 - 26.4 V AC / 18 - 30 V DC	
Power consumption	2.5 VA / 2 W (24V)	
Dimensions (Eurocard)	100 x 160 mm, 4 uw	
Weight	300 g	
Ambient temperature	-10 °C ... +60 °C	
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation	

## Ordering details

Input	Analog output	Digital output	Order No.
4x 0/4-20 mA	1x 0/4-20 mA	4 ports / 4 relays	GHG 128 2041 A 2316
4x 0/4-20 mA	1x 0/4-20 mA	4 ports / 4 transistors	GHG 128 2041 A 4316
4x 0/4-20 mA	1x 0/4-20 mA	4 ports / 2 relays / 2 trans.	GHG 128 2041 A 5316
Accessories	Programming cable		GHG 139 0006 C 0000
Accessories	ISES 720 System Backplane (limited)		GHG 139 4090 A 7206



# Model 1/485 HART Interface Module for 32 SMART/HART Transmitters



## Product features

- Connects 32 HART transmitters to a PC, can be expanded to 992 inputs via an RS 485 BUS
- HART protocol on the RS 485 BUS and FSK for communication with transmitters
- Inputs are statically separated
- Saves wiring by employing backplane racks
- Galvanically isolated from the power supply and the RS 485 BUS

## Technical data:

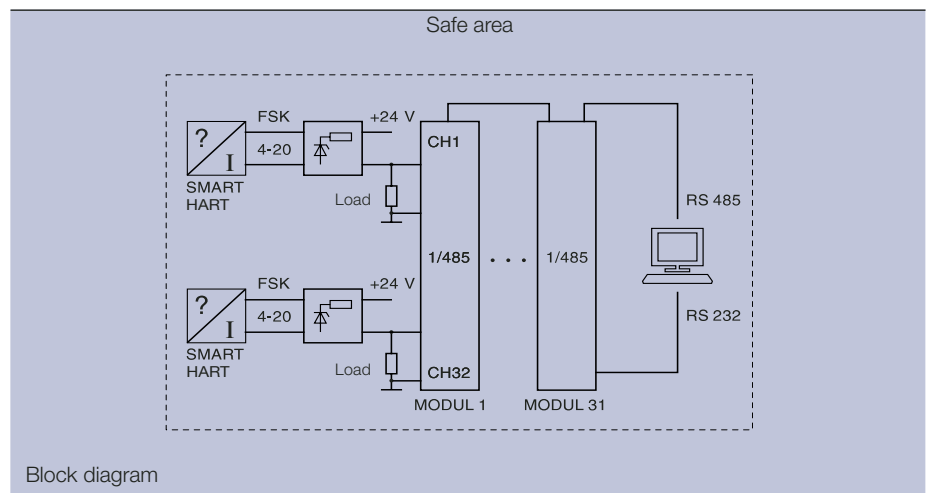
Application	Non IS or Ex-i via barriers or SMART transmitter supplies
PC-Software	works with any HART software supplied by major manufacturers
Data links	RS 232 front access for direct links to a PC RS 485 via DIN connector as a BUS connection to the PC and 31 Racks max. All channels are directly connected across the DCS inputs in the safe area.
Addressing	Card does not need to be configured. All participants accessed via HART protocol
Input impedance	static > 10 MΩ
Filter per channel	High pass > 1000 Hz
Power supply	18 - 30 V DC
Power consumption	1.4 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	250 g
Ambient temperature	-20 °C ... +70 °C
Relative humidity	< 75 % (average) < 95 % (30 d/a), no condensation

## Ordering details

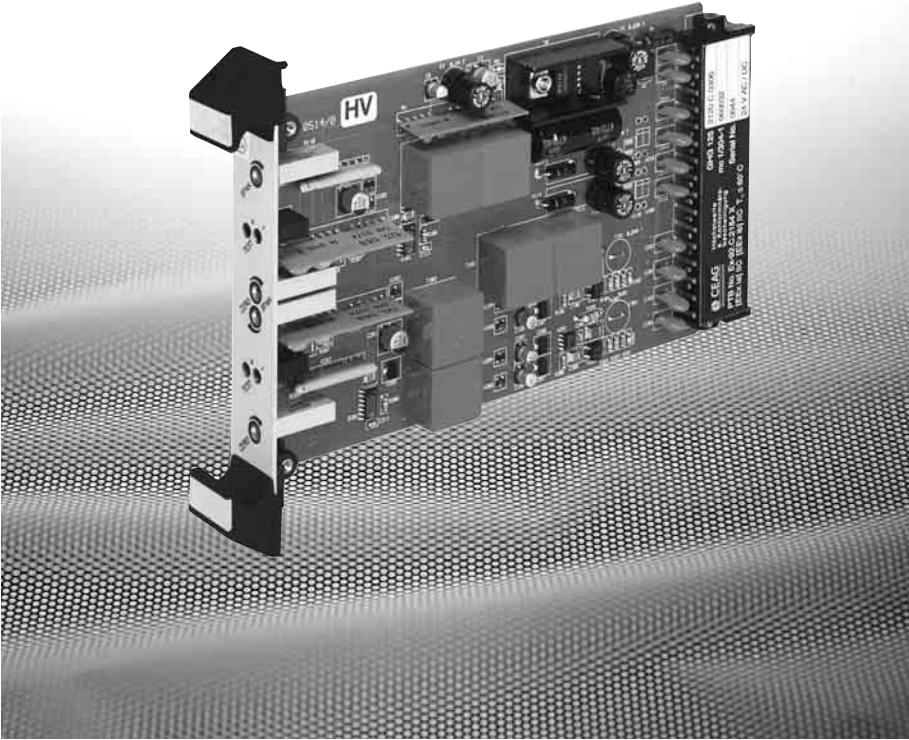
Type	Channels	Order No.
1/485	32	GHG 139 2021 B 1009

## Accessories

Description	Order No.
ISES 701 system backplane	GHG 139 4190 A 7016



## Eurocards Apparatebau Hundsbach compatible



- 1 to 2 channels just 4 units wide
- Mounted in prewired 19" racks with 21 slots or in prefabricated rack systems with 16 plug-in positions
- Plug-in modules for analogue or digital I/O cards
- Safe galvanic isolation
- Status LEDs
- Low power consumption
- EEx ia/ib approved
- Suitable for DCS and PLC

### Description

Eurocards are used as signal conditioning units between field devices and control systems. They plug into standard prewired racks or prefabricated ISES backplane systems. The cards may be mounted or removed from a live circuit.

Eurocards offer advantages in that they are galvanically isolated, they can boost and amplify signals, and are easily mounted as plug-in units. Since they are galvanically isolated they do not require equipotential earth connections normally encountered with safety barriers. Changes in the power supply voltage do not affect the excellent device performance due to the properties of the built-in amplifier circuits.

Light emitting diodes (LEDs) indicate the device status. A green LED shows the operating condition, a yellow LED depicts the switch status as in switch amplifiers, and a red LED signals alarm conditions e.g. line faults and interruptions.

It is often advantageous to employ Eurocards as their properties as amplifiers free you from the restrictions on measuring circuits frequently encountered with barriers.

For safety reasons you have to check that currents, voltages, power, inductance, and capacitance of the Eurocard match those of the connected intrinsically safe circuit.

# Model AH137 A RTD-Converter compatible with Model MT200



## Product features

- Configurable via PC (Online)
- Trip amplifier with relays
- EMC fully compliant to EN 61326, NE21
- Ex ia/ib approved
- Safe galvanic isolation between input, output, power supply as well as contacts

## Technical data:

- RTD input	-200 °C...+850 °C
- Slide wire input	0 ... 600 Ω, smallest span 10 Ω (0.1 %)
Output	0/4 - 20 mA, 0/2 - 10 V configurable
Burn-out drive	0, > 100 %, frozen: selectable
Load	750 Ω ( mA), > 22 kΩ (V)
Output relay	
Voltage rating	AC 125 V    150 V DC
Current rating	1 A AC/DC
Power rating	50 VA        30 W
Linearity	< 0.1 %
Temperature drift	< 0.1 % / 10 K
Response time	0.42 ... 0.7 s, mode dependant
Power supply	20.4 - 26.4 V AC (<5 VA), DC 20.4 ... 30 V (<2.4 W)
Dimensions (Eurocard)	100 x 160 mm
Weight	300 g
Ambient temperature	-10 °C ... +65 °C
Relative humidity	< 75% (average)
	< 95% (30 d/a), no condensation
Protection category	IP20

## Explosion protection:

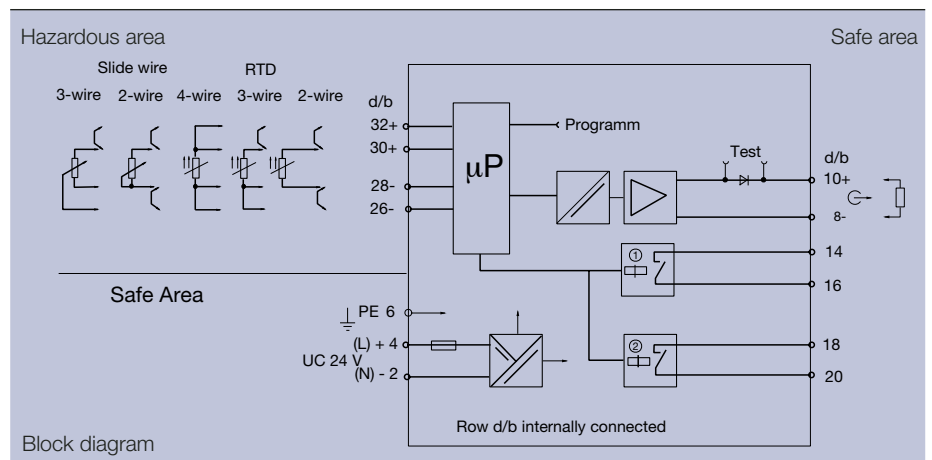
Category	II (1/2) GD [EEx ia/ib] IIC
EC-Type Examination	TUV 02 ATEX 1967
Safety values	V <sub>oc</sub> < 6 V, I <sub>sc</sub> < 10 mA, P <sub>o</sub> < 40 mA

## Ordering details

Input	Output	Trip relays	Ex-protection	Order No.
RTD	4 - 20 mA	2	ia/ib	GHG 131 2100 R 2006
RTD	4 - 20 mA	2	-	GHG 131 2000 R 2006

## Accessories

Type	Order No.
Programming cable	GHG 139 0006 C 0000

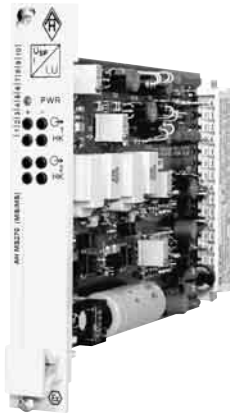


# Model MS270

## Transmitter Power Supply, Input Isolator

### HART

#### compatible with Foxboro-Eckardt MUS/TV 80, MS280



### Product features

- Power supply for 2-wire 4 - 20 mA transmitters
- Signal duplication (1 input, 2 outputs)
- EMC fully compliant to EN 61326, NE21
- Ex ia/ib approved
- Safe galvanic isolation between input, output and power supply
- HART communication for all major brands

### Technical data:

Field device power supply	16 V at 20 mA ( $V_{oc}$ 27.5 V) 14 V at 20 mA ( $V_{oc}$ 25 V)
Input impedance (input isolator)	approx. 80 $\Omega$
Load	$\leq 750 \Omega$ , at HART/FSK $< 500 \Omega$
Response time	$< 0.2$ ms
Smart-Communication	in parallel to load or via front sockets
Linearity	$\leq 0.15$ %
Temperature drift	$\leq 0.1$ % / 10 K
Power supply	DC 18-32 V ( $< 2.5$ W, 1-chan.) ( $< 4.5$ W 2-chan.) AC 20.4-27.6 V ( $< 3$ VA / channels)
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	300 g
Ambient temperature	-20 °C ... +65 °C
Relative humidity	$< 75$ % (average) $< 95$ % (30 d/a), no condensation

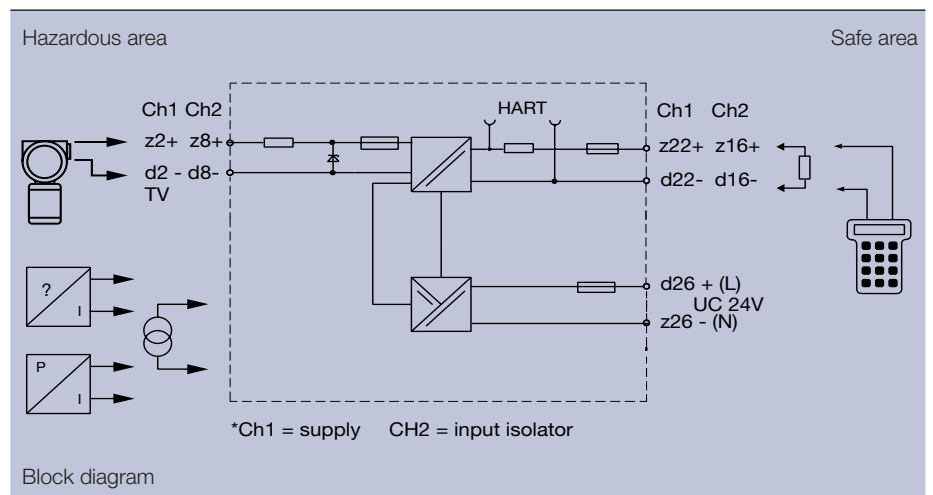
### Explosion protection:

Category	$\text{Ex}$ II (1/2) GD [EEEx ia/ib] II C
EC-Type Examination	DMT 02 ATEX E 058 X
Safety values	$V_{oc} < 27.5$ V, $I_{sc} < 96$ mA, $P_o < 662$ mW $V_{oc} < 25$ V, $I_{sc} < 87.4$ mA, $P_o < 547$ mW $V_{oc} < 5.88$ V, $I_{sc} < 2.7$ mA, $P_o < 4$ mW (Isolator)

### Ordering details

Type	Ex-protection	Channels/Version	Order No.
MS270	ia/ib $V_{oc} < 27.5$ V, $I_{sc} < 92$ mA	1 Power supply	MS270-M4133-C011
MS270	ia/ib $V_{oc} < 25$ V, $I_{sc} < 87.4$ mA	1 Power supply	MS270-M4133-G011
MS270	-	1 Power supply	MS270-M4133-A011
MS270	ia/ib $V_{oc} < 27.5$ V, $I_{sc} < 92$ mA	2 Power supply	MS270-M4233-C011
MS270	ia/ib $V_{oc} < 25$ V, $I_{sc} < 87.4$ mA	2 Power supply	MS270-M4233-G011
MS270	-	2 Power supply	MS270-M4233-A011
MS270	ia/ib $V_{oc} < 6$ V, $I_{sc} < 2.7$ mA	1 isolator	MS270-L4133-C011
MS270	ia/ib $V_{oc} < 6$ V, $I_{sc} < 2.7$ mA	2 isolator	MS270-L4233-C011
MS270*	ia/ib $V_{oc} < 27.5$ V, $I_{sc} < 92$ mA	2 Power supply/isol.	MS270-M4333-C011
MS270*	ia/ib $V_{oc} < 25$ V, $I_{sc} < 87.4$ mA	2 Power supply/isol.	MS270-M4333-G011
Accessories	IMAH 70781 system backplane		70781-B1001-AA

HART-Communication only possible with power supply version





# Model MS271 Transmitter Power Supply HART Input Isolator compatible with AH77261



## Product features

- Power supply for 2-wire 4 - 20 mA transmitters
- Signal duplication (1 input, 2 outputs)
- EMC fully compliant to EN 61326, NE21
- Ex ia/ib approved
- Safe galvanic isolation, between input, output and power supply
- HART communication for all major brands

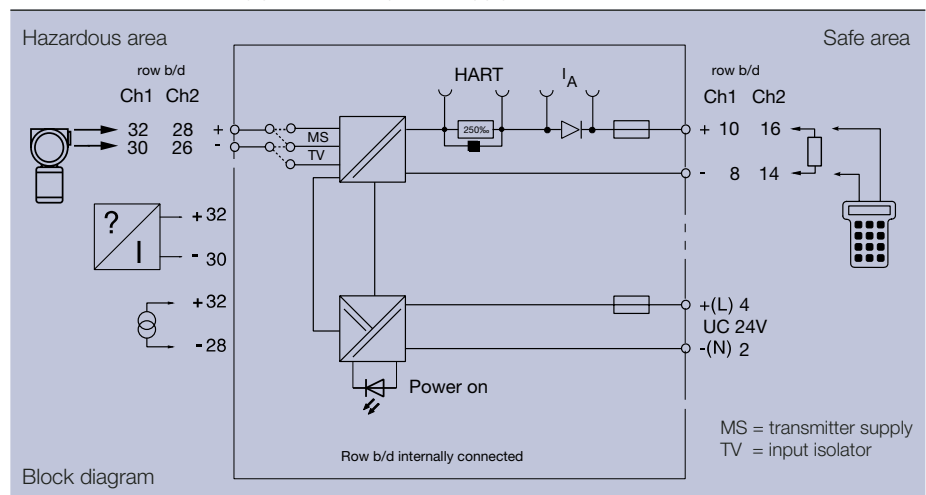
## Technical data:

Field device power supply	16 V at 20 mA ( $V_{oc}$ 27.5 V) 14 V at 20 mA ( $V_{oc}$ 25 V)
Input resistance (input isolator)	80 $\Omega$
Load	$\leq 750 \Omega$ , at HART/FSK $< 500 \Omega$
Response time	$< 0.2$ ms
HART communication	in parallel to load or via front sockets
Linearity	$\leq 0.15$ %
Temperature drift	$\leq 0.1$ % / 10 K
Power supply	DC 18-32 V ( $< 2.5$ W, 1-chan.) ( $< 4.5$ W 2-chan.) AC 20.4-27.6 V ( $< 3$ VA / channel)
Dimensions (Eurocards)	100 x 160 mm, 4 uw
Weight	300 g
Ambient temperature	-20 °C ... +65 °C
Relative humidity	$< 75$ % (average) $< 95$ % (30 days/a), no condensation
<b>Explosion protection:</b>	
Category	$\text{Ex}$ II (1/2) GD [EEEx ia/ib] II C
EC-Type Examination	DMT 02 ATEX E 056 X
Safety values	$V_{oc} < 27.51$ V, $I_{sc} < 96.2$ mA, $P_o < 662$ mW $V_{oc} < 25$ V, $I_{sc} < 87.7$ mA, $P_o < 547$ mW $V_{oc} < 5.88$ V, $I_{sc} < 2.7$ mA, $P_o < 4$ mW (Isolator)

## Ordering details

Type	Ex-protection	Channels/Version	Order No.
MS271	ia/ib $V_{oc} < 27.5$ V, $I_{sc} < 96.2$ mA	1 Power supply	MS271-B41EE-C010
MS271	ia/ib $V_{oc} < 25$ V, $I_{sc} < 87.7$ mA	1 Power supply	MS271-B41EE-G010
MS271	-	1 Power supply	MS271-B41EE-A010
MS271	ia/ib $V_{oc} < 27.5$ V, $I_{sc} < 96.2$ mA	2 Power supply	MS271-B42EE-C010
MS271	ia/ib $V_{oc} < 25$ V, $I_{sc} < 87.7$ mA	2 Power supply	MS271-B42EE-G010
MS271	-	2 Power supply	MS271-B42EE-A010
MS271	ia/ib $V_{oc} < 25$ V, $I_{sc} < 87.7$ mA	1 Power supply/Isol.	MS271-B43EE-G010
MS271	ia/ib $V_{oc} < 25$ V, $I_{sc} < 87.7$ mA	1 Power supply/relay	MS271-B41EE-G011
TV271	ia/ib $V_{oc} < 5.88$ V, $I_{sc} < 2.7$ mA	1 Isolator	TV271-B41EE-C000
TV271	ia/ib $V_{oc} < 5.88$ V, $I_{sc} < 2.7$ mA	2 Isolator	TV271-B42EE-C000
Accessories	IMAH 70781 system backplane		70781-B1001-AA

HART-communication only possible with power supply version



# Model AH304 Output Isolator HART compatible with Type AH77239, AH77241, AHAT242



## Product features

- analog output for 4 - 20 mA Signals (I/P converter, displays, positioners)
- Short circuit protected outputs
- EMC compliant to EN 61326, NE21
- EEx ia/ib approved
- Safe galvanic isolation between input, output and power supply
- HART communication for all major brands

## Technical data:

Input resistance	dyn. 250 $\Omega$ , static 50 $\Omega$ ; 300 $\Omega$ on power failure
Load	<750 $\Omega$
Linearity	< 0.1 %
Temperature drift	< 0.1 % / 10 K
Response time	22 ms (10 - 90 %)
Power supply	20 - 26.4 V AC 20 - 30 V DC
Power consumption	
1 channel	2.3 VA / 1.4 W
2 channels	4 VA / 2.6 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	250 g
Ambient temperature	-20 °C ... +70 °C (60 °C Ex)
Relative humidity	< 75% (average) < 95% (30 d/a), no condensation

## Explosion protection:

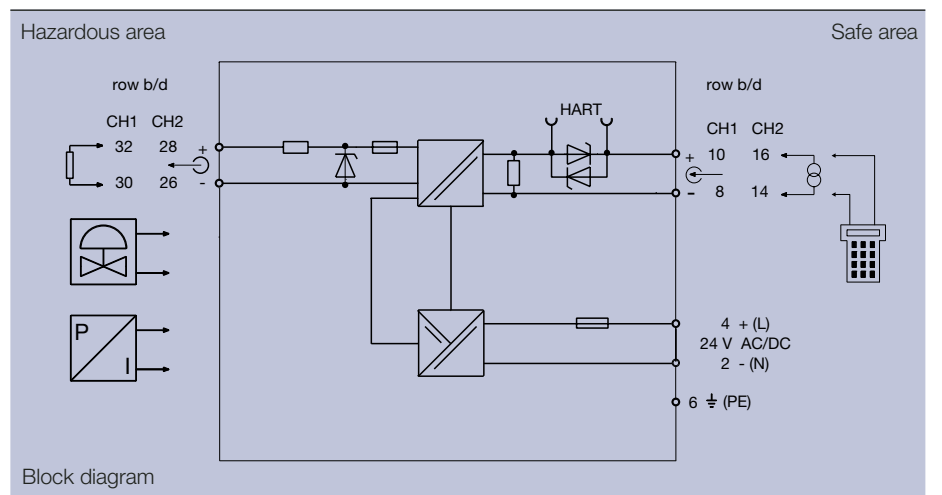
Category	II (1) GD [EEx ia] II C
EC-Type Examination	TÜV 98 ATEX 1278 X
Safety values	$V_{oc} < 27.3$ V, $I_{sc} < 93$ mA, $P_o < 635$ mW

## Ordering details

Type	Input/Output	Channel	Ex-protection	Order No.
AH 304	0/4 - 20 mA	1	ia/ib	GHG 125 2311 L 1406
AH 304	0/4 - 20 mA	2	ia/ib	GHG 125 2321 L 1406

## Accessories

Type	Order No.
IMAH 70781 system backplane	70781-B1011-AB



# Model AH334 Output Isolator with Level Shift Option compatibel with AH77239, AH77241, AHAT242, AH304



## Product features

- Output isolator for 0/4 - 20 mA (I/P converter, displays, valve positioners)
- Short circuit protected outputs
- EMC to EN 61326, NE21
- Ex ia/ib approved
- Safe galvanic isolation between input, output and power supply
- Level shifting 0/4 ... 20 mA (by jumper)
- Voltage to current converter (Option)

## Technical data:

Input resistance	25 $\Omega$
Load	600 $\Omega$
Linearity	< 0.1 %
Temperature drift	< 0.1 % / 10 K
Response time	100 ms (10 - 90 %)
Power supply	20 - 26.4 V AC 20 - 30 V DC
Power consumption	
1 channel	2.3 VA / 1.4 W
2 channels	4 VA / 2.6 W
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	250 g
Ambient temperature	-20 °C ... +70 °C (60 °C Ex)
Relative humidity	< 75% (average) < 95% (30 days/a), no condensation

## Explosion protection:

Category	II (1/2) G D [Ex ia/ib] II C
EC-Type Examination	PTB 02 ATEX 2176 X
Safety values	$V_{oc} < 27.3$ V, $I_{sc} < 93$ mA, $P_o < 635$ mW

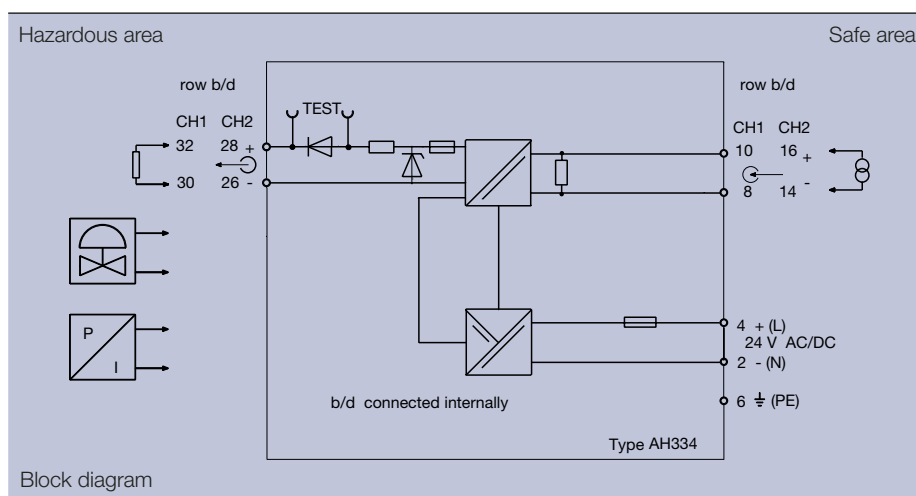
## Ordering details

Type	Input/Output	Channels	Ex-protection	Order No.
AH334	0/4 - 20 mA	1	ia/ib	GHG 125 2311 N 1306
AH334	0/4 - 20 mA	2	ia/ib	GHG 125 2321 N 1306
AH334	0/4 - 20 mA	1	-	GHG 125 2011 N 1306
AH334	0/4 - 20 mA	2	-	GHG 125 2021 N 1306

Level shifting 0 - 20 mA to 4 - 20 mA via jumper  
Voltage input via solder jumper (5 V, 10 V)

## Accessories

Type	Order No.
IMAH 70781 system backplane	70781-B1011-AB



# Model AH420

## Transmitter Power Supply, Input Isolator

### HART

#### compatible to AH77261, MS271, TV271



### Product features

- Power supply for 2-wire 4 - 20 mA transmitter
- EMC compliant to EN 61326, NE21
- Ex ia/ib approved
- Safe galvanic isolation between input, output and power supply
- HART communication for all major brands

### Technical data:

Field device power supply	16 V at 20 mA ( $V_{oc}$ 27 V) 15 V at $V_{oc}$ 24 V
Input resistance (Input isolator)	150 $\Omega$ , dyn. 250 $\Omega$ (HART)
Load	$\leq$ 750 $\Omega$ , with HART/FSK $<$ 500 $\Omega$
Response time	$<$ 20 ms (10-90 %)
HART communication	in parallel to load or via front sockets
Linearity	$\leq$ 0.2 %
Temperature drift	$\leq$ 0.2 % / 10 K
Power supply	DC 20-30V ( $<$ 4.5 W 2-chan.) AC 20-26.4V ( $<$ 3 VA/chan.)
Dimensions (Eurocard)	100 x 160 mm, 4 uw
Weight	300 g
Ambient temperature	-20 °C ... +65 °C
Relative humidity	$<$ 75% (average) $<$ 95% (30 days/a), no condensation

### Explosion protection:

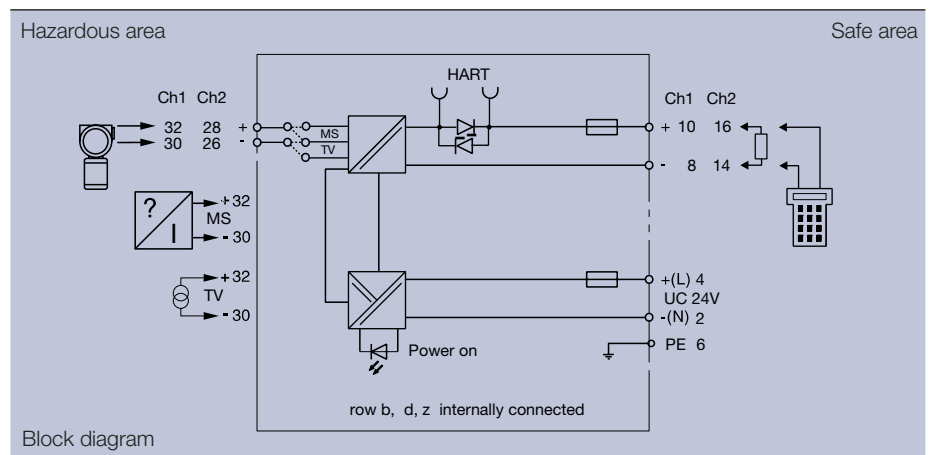
Category	II (1/2) GD [EEx ia/ib] II C/B
EC-Type Examination	TUV 02 ATEX 1938 X
Safety values	$V_{oc}$ $<$ 27 V, $I_{sc}$ $<$ 92 mA, $P_o$ $<$ 620 mW $V_{oc}$ $<$ 24 V, $I_{sc}$ $<$ 82 mA, $P_o$ $<$ 480 mW $V_{oc}$ $<$ 5 V, $I_{sc}$ $<$ 50 mA, $P_o$ $<$ 62 mW (Isolator)

### Ordering details

Type	Ex-protection	Channels/Version	HART	Order No.
AH420	ia/ib $V_{oc}$ $<$ 27 V, $I_{sc}$ $<$ 92 mA	1 Power supply	X	GHG 124 2111 K 3206
AH420	ia/ib $V_{oc}$ $<$ 24 V, $I_{sc}$ $<$ 82 mA	1 Power supply	X	GHG 124 2411 K 3206
AH420	-	1 Power supply	X	GHG 124 2011 K 3206
AH420	ia/ib $V_{oc}$ $<$ 27 V, $I_{sc}$ $<$ 92 mA	2 Power supply	X	GHG 124 2121 K 3206
AH420	ia/ib $V_{oc}$ $<$ 24 V, $I_{sc}$ $<$ 82 mA	2 Power supply	X	GHG 124 2421 K 3206
AH420	-	2 Power supply	X	GHG 124 2021 K 3206
AH420	ia/ib $V_{oc}$ $<$ 27 V, $I_{sc}$ $<$ 92 mA	1 Power supply	-	GHG 124 2111 K 1006
AH420	ia/ib $V_{oc}$ $<$ 24 V, $I_{sc}$ $<$ 82 mA	1 Power supply	-	GHG 124 2411 K 1006
AH420	-	1 Power supply	-	GHG 124 2011 K 1006
AH420	ia/ib $V_{oc}$ $<$ 27 V, $I_{sc}$ $<$ 92 mA	2 Power supply	-	GHG 124 2121 K 1006
AH420	ia/ib $V_{oc}$ $<$ 24 V, $I_{sc}$ $<$ 82 mA	2 Power supply	-	GHG 124 2421 K 1006
AH420	-	2 Power supply	-	GHG 124 2021 K 1006
AH420	ia/ib $V_{oc}$ $<$ 5 V, $I_{sc}$ $<$ 50 mA	1 Isolator	-	GHG 124 2111 K 1016
AH420	ia/ib $V_{oc}$ $<$ 5 V, $I_{sc}$ $<$ 50 mA	2 Isolators	-	GHG 124 2121 K 1016

Accessories IMAH 70781 system backplane

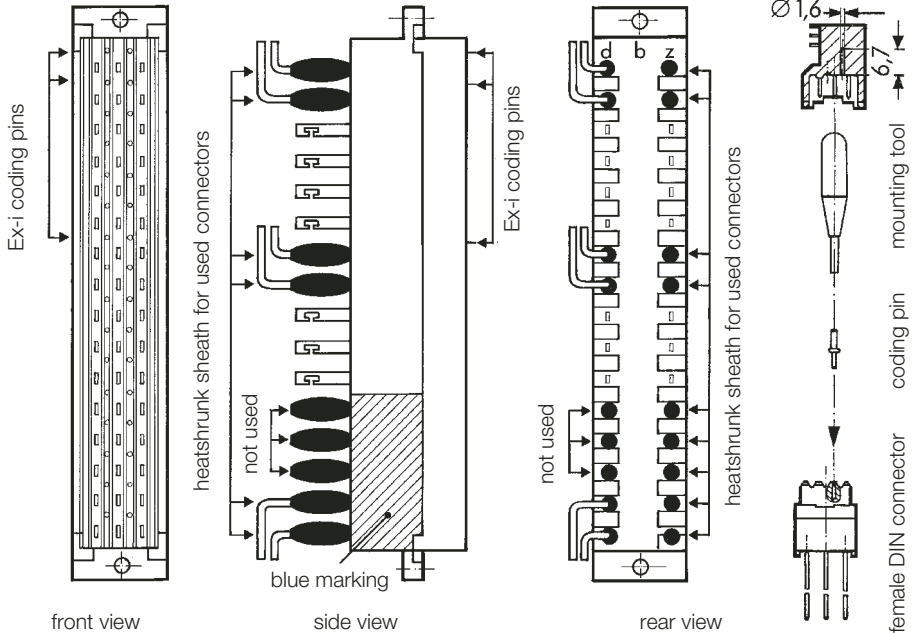
70781-B1001-AA



# Intrinsically Safe Connectors

## Intrinsically safe connectors

### Example of female DIN connector



### Intrinsic Safety

Intrinsically safe connectors can be mechanically coded to avoid loop mix-ups. For details see the rules and regulations of the user country. CEAG offer metal pins to code the female connector. The pins match bore holes in the device's male connector (fig.). This enables you to carry out changes when required. It also allows you to mount devices from several manufactures side by side as long as the Ex regulations are observed. Sheaths ensure IP 20 protection. Unused terminals should also be covered by sheaths (see fig.).

## Eurocards

