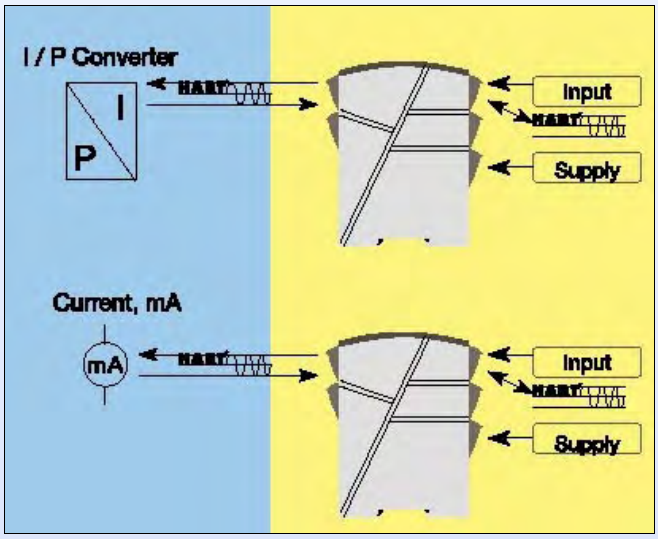
Issue July 2003

5107B HART ® TRANSPARENT DRIVER

- 1- or 2-channel version
- 3- / 5-port 3.75 kVAC galvanic isolation
- < 1.3 V voltage drop on input
- 16 V driving voltage on Ex output
- Universal supply by AC or DC

Application:



- Safety barrier for current signals and 2-way HART ® communication transmitted to I/P converters mounted in hazardous area.
- Safety barrier for 2-way HART ® communication and analogue current signals transmitted to hazardous area.
- Signal isolator with low response time on analogue current signals transmitted to hazardous area.

Technical characteristics:

- PR's HART ® transparent driver primarily pro-cesses current signals of 4...20 mA.
- PR5107B is based on microprocessor technology for gain and offset. The analogue signal is transmitted at a response time of less than 25ms.
- Inputs, outputs, and supply are floating and galvanically separated.

Mounting / installation:

- Mounted vertically or horizontally on a DIN rail. As the modules can be mounted without distance between neighbouring units, up to 84 channels can be mounted per metre.

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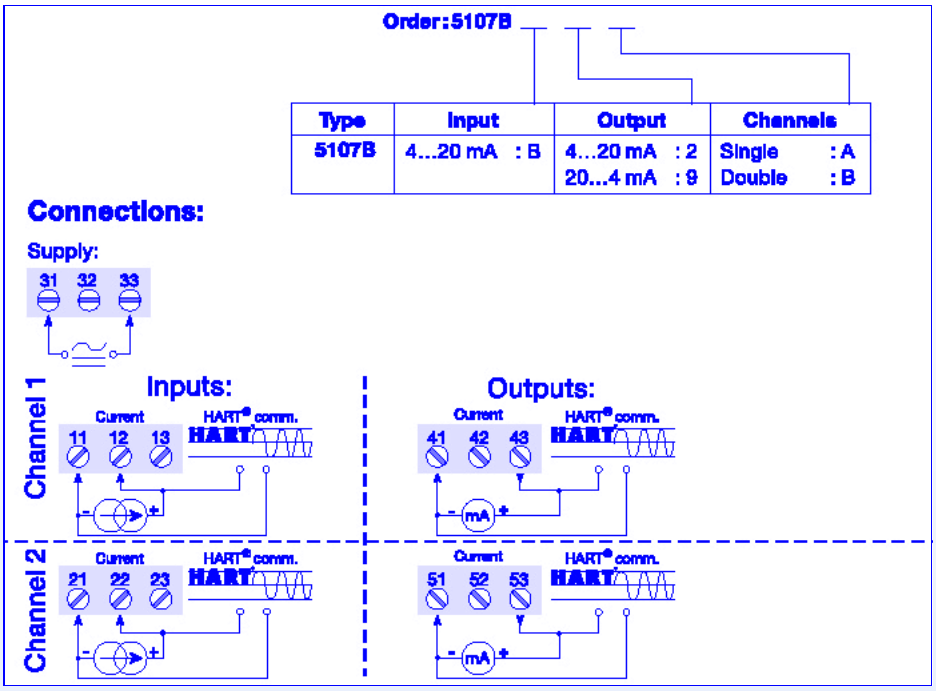

Electrical specifications:

Specifications range:

-20°C to +60°C

Common specifications:

Supply voltage universal	24...230 VAC ±10% 50...60 Hz 24...250 VDC ±20%
Internal consumption	≤2 W (2 channels)
Max. consumption	≤2 W (2 channels)
Fuse	400 mA SB / 250 VAC
Isolation voltage, test / operation	3.75 kVAC / 250 VAC
Long-term stability, better than	±0.1% of span / Year
Signal / noise ratio	Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%)	< 25 ms
Calibration temperature	20...28°C

Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
mA	≤±0.1% of span	≤±0.01% of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
mA	≤±16 µA	≤±1.6 µA/°C

EMC immunity influence	< ±0.5% of span
Extended EMC immunity:	
NAMUR NE 21, A criterion, burst	< ±1% of span

Effect of supply voltage change (24...250 VAC / VDC)	< ±10 µA
Max. wire size	1 x 2.5 mm2
Screw terminal torsion	0.5 Nm
Relative humidity	< 95% RH (non-cond.)
Dimensions (HxWxD)	109 x 23.5 x 130 mm
DIN rail type	DIN 46277
Tightness (enclosure / terminals)	IP50 / IP20
Weight	260 g

Current inputs:

Measurement range	4...20 mA
Min. measurement range (span)	16 mA
Input resistance:	
Supplied unit	10 Ω + PTC, VDROP < 1.3 V
Non-supplied unit	RSHUNT = ∞, VDROP < 3.5 V

Current outputs:

Signal range (span)	4...20 mA
Min. signal range (span)	16 mA
Load (max.)	20 mA / 800 Ω/ 16 VDC
Load stability	≤0.01% of span / 100 Ω
Current limit	≤28 mA

Ex data:

U m	: 250 V
U o	: 28 VDC
I o	: 93 mADC
P o	: 0.644 W
L o	: 3 mH
C o	: 0.08 µF

EEx approval CENELEC:

DEMKO 01	ATEX 127484
ATEX	0539 Ex II (1) G [EEx ia] IIC
Applicable for	Zone 0, 1, or 2

Observed authority requirements: Standard:

EMC 89/336/EEC, Emission	EN 50 081-1, EN 50 081-2
Immunity	EN 50 082-2, EN 50 082-1
Emission and immunity	EN 61 326
LVD 73/23/EEC	EN 61 010-1
PELV/SELV	IEC 364-4-41 and EN 60 742
ATEX 94/9/EC	EN 50 014 and EN 50 020

Of span = of the presently selected range

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