

Signal Conditioning & *Communication Interfaces* **Product Catalog**

PERFORMANCE
MADE
SMARTER



TEMPERATURE | I.S. INTERFACES | COMMUNICATION INTERFACES | MULTIFUNCTIONAL | ISOLATION | DISPLAY

PR
electronics

Our purpose

is to create market-leading site standard solutions with high signal integrity and simplicity for our customers, concentrating on innovation in six core business areas: Temperature, I.S. Interfaces, Communication Interfaces, Multifunctional, Isolation and Display.

Our products are individually outstanding, but when our point-to-point temperature measurement devices, I.S. interfaces, backplanes, multifunctional signal devices and future-proof communication interfaces are combined, our solutions are truly unrivalled.

We will be

our customer's trusted partner for the best and most innovative signal conditioning solutions in the process and factory automation industries.

We provide

a wide range of benefits to our customers through innovative solutions and close collaboration:

- The highest signal integrity from your measurement point to control system
- Maximum uptime based on our Install and Forget® philosophy
- Easy and cost-effective deployment and monitoring with intuitive communication interfaces
- Site standard devices that are easily programmable to suit your specific application
- Day-to-day delivery

Since 1974, we have been dedicated to perfecting our core competence of innovating high precision technology with low power consumption. With a dedicated R&D center that is integrated with our lean production facility at our headquarters in Denmark, we are today one of the leading companies within signal conditioning.



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MULTIFUNCTIONAL TRANSMITTERS



TYPE	3114	4104	4114	4116	4131
INPUT:	Isolated universal converter	Universal uni-/bipolar signal transmitter	Universal transmitter	Universal transmitter	Universal trip amplifier
RTD, TC, linear resistance, mV, mA, V, potentiometer					
OUTPUT:	mA, V, relays				

INPUT:					
mA, measurement range / min. span	0...23 mA / 16 mA	-23...+23 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA
V, measurement range / min. span	0...12 VDC / 0.8 V	-12...+12 VDC / 0.8 V	0...12 VDC / 0.8 V	0...12 VDC / 0.8 V	0...12 VDC / 0.8 V
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / -	-200...+850°C / -	-200...+850°C / -	-200...+850°C / -
Lin. R, measurement range / min. span	0...10000 Ω / -	0...10000 Ω / -	0...10000 Ω / -	0...10000 Ω / -	0...10000 Ω / -
Potentiometer	10 Ω...100 kΩ		10 Ω...100 kΩ	10 Ω...100 kΩ	10 Ω...100 kΩ
Sensor connection, wires	2 - 3 - 4		2 - 3 - 4	2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr		BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr
Cold junction compensation	Internal		Internal / external	Internal / external	Internal / external
Reference voltage / 2-wire supply	- / > 15 V	- / 16 VDC			
OUTPUT:					
mA, signal range / min. span	0...23 mA / 16 mA	-23...+23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA
Load (@ current output)	≤ 600 Ω	≤ 800 Ω	≤ 800 Ω	≤ 800 Ω	≤ 800 Ω
V, signal range / min. span	0...10 VDC / 0.8 VDC	-10...+10 VDC / 0.8 VDC	0...10 VDC / 0.8 VDC	0...10 VDC / 0.8 VDC	0...10 VDC / 0.8 VDC
Load (@ voltage output)	≥ 10 kΩ	≥ 500 kΩ			
Relays				2 x SPST, AC: 500 VA	2 x SPST, AC: 500 VA
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-25...+70°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, universal AC / DC	- / 16.8...31.2 VDC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V
Max. required power	1.2 W	2.5 W	2.0 W	2.5 W	2.0 W
Isolation voltage, test / operation	2.5 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC
Response time	0.4 / 1.0 s	< 20 ms	< 400 ms	< 400 ms	< 400 ms
Signal dynamics, input / output	24 bit / 16 bit	20 bit / 18 bit	24 bit / 16 bit	24 bit / 16 bit	24 bit / -
Accuracy	< ±0.1% of span	< ±0.05% of span	< ±0.1% of span	< ±0.1% of span	< ±0.1% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE21, NE43	NE21	NE21, NE43	NE21, NE43	NE21, NE43
Channels	1	1	1	1	1
Programming	4500 series devices	4500 series devices	4500 series devices	4500 series devices	4500 series devices

APPROVALS:					
ATEX, Zone 2	✓				
IECEx, Zone 2	✓				
UKEx, Zone 2	✓				
FM, Zone 2 - DIV 2	✓	✓	✓	✓	✓
UL 61010 / 508	✓ / -	- / ✓	- / ✓	- / ✓	- / ✓
DNV / EU-RO marine	✓ / -	✓ / -	✓ / ✓	✓ / ✓	✓ / ✓
EAC	✓	✓	✓	✓	✓
SIL 2, Hardware Assessment			✓	✓	
CCC	✓				

APPLICATION GUIDE:					
mA / V / temperature input	✓ / ✓ / ✓	✓ / ✓ / -	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Bipolar mA / V input		✓ / ✓			
Lin. R / potentiometer input	✓ / ✓		✓ / ✓	✓ / ✓	✓ / ✓
4...20 mA Tx input	✓	✓	✓	✓	✓
V-curve function		✓			
Buffered voltage output	✓				
Active / passive current output	✓ / -	✓ / ✓	✓ / -	✓ / -	
Analog / relay output	✓ / -	✓ / -	✓ / -	✓ / ✓	- / ✓
Custom sensor linearization					
Process signal calibration	✓	✓	✓	✓	✓
Power rail option	✓				

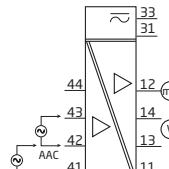
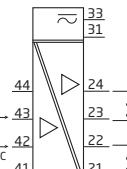
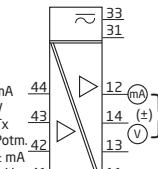
MULTIFUNCTIONAL TRANSMITTERS

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TYPE	4179	4179B	4184	
INPUT: mV, mA, A, V, potentiometer	Universal AC/DC transmitter	Universal trip amplifier	Universal uni-/bipolar signal transmitter	
OUTPUT: mA, V, relays				

INPUT:				
mA, measurement range / min. span			±100 mA / 0.5 mA	
A, measurement range / min. span	0...5 AAC / 0.5 AAC	0...5 AAC / 0.5 AAC		
V, measurement range / min. span	0...300 VAC / 0.5 VAC	0...300 VAC / 0.5 VAC	±300 VDC / 25 mV	
RTD, measurement range / min. span				
Lin. R, measurement range / min. span				
Potentiometer			0...100 %	
Reference voltage / 2-wire supply			2.5 V / 16 V	
3-wire supply			> 18...< 28 V	
OUTPUT:				
mA, signal range / min. span	-23...+23 mA / 16 mA		±23 mA / 4 mA	
Load (@ current output)	≤ 800 Ω		≤ 1000 Ω	
V, signal range / min. span	-10...+10 VDC / 0.8 VDC		-10...+10 VDC / 0.8 VDC	
Load (@ voltage output)	≥ 500 kΩ		≥ 500 kΩ	
Buffered voltage output			± 23 V	
Load, min. (buffered voltage output)			> 2 kΩ	
Relays	2 x SPST, AC: 500 VA			
TECHNICAL SPECIFICATIONS:				
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	
Supply voltage, universal AC / DC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	
Max. required power	1.8 W	1.4 W	2.5 W	
Isolation voltage, test / operation	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	
Response time	< 0.75 s	< 0.75 s	< 20 ms	
Signal dynamics, input / output	20 bit / 18 bit	20 bit / -	24 bit / 18 bit	
Accuracy	< ±0.3% of span	< ±0.3% of span	< ±0.05% of span	
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	
NAMUR	NE21, NE43	NE21, NE43	NE21, NE43	
Channels	1	1	1	
Programming	4500 series devices	4500 series devices	4500 series devices	

APPROVALS:				
ATEX, Zone 2				
IECEx, Zone 2				
FM, Zone 2 - DIV 2				
UL 61010 / 508	- / ✓	- / ✓	- / ✓	
DNV				
EAC				
SIL 2, Hardware Assessment	✓	✓	✓	

APPLICATION GUIDE:				
mA / V / temperature input	✓ / ✓ / -	✓ / ✓ / -	✓ / ✓ / -	
Bipolar mA / V input			✓ / ✓	
Lin. R / potentiometer input			- / ✓	
4...20 mA Tx input			✓	
V-curve function	✓		✓	
Buffered voltage output			✓	
Active / passive current output	✓ / ✓		✓ / ✓	
Analog / relay output	✓ / -	- / ✓	✓ / -	
Custom sensor linearization				
Process signal calibration	✓	✓	✓	
Power rail option				

MULTIFUNCTIONAL TRANSMITTERS



TYPE	5114A	5115A	5116A	5131A	9116A
INPUT:	Programmable transmitter	Signal calculator	Programmable transmitter w. limit switch	2-wire programmable transmitter	Universal converter
RTD, TC, linear resistance, mV, mA, V, potentiometer					

INPUT:					
mA, measurement range / min. span	0...100 mA / 4 mA	0...23 mA / 16 mA			
V, measurement range / min. span	0...250 VDC / 5 mV	0...12 VDC / 0.8 V			
mV, measurement range / min. span	-150...+150 mV / 5 mV	-150...+150 mV / 5 mV	-2500...+2500 mV/5 mV	-150...+150 mV / 5 mV	
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...10000 Ω / -			
Potentiometer	200 Ω...100 kΩ	200 Ω...100 kΩ	200 Ω...100 kΩ	200 Ω...100 kΩ	10 Ω...10000 Ω
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr
Max. offset	50% of selec. max. value				
Cold junction compensation	Internal / external	Internal / external	Internal / external	Internal / external	Internal / external
Reference voltage / 2-wire supply	2.5 VDC / > 17.1 VDC	2.5 VDC / > 17.1 VDC	2.5 VDC / > 16.5 VDC		- / > 16.5 VDC
OUTPUT:					
mA, signal range / min. span	0...23 mA / 10 mA	0...23 mA / 10 mA	0...23 mA / 10 mA	3.5...23 mA / 10 mA	0...23 mA / 16 mA
Load (@ current output)	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω	≤ (V _{supply} -7.5)/0.023 [Ω]	≤ 600 Ω
V, signal range / min. span	0...10 VDC / 0.5 VDC	0...10 VDC / 0.5 VDC	0...10 VDC / 0.5 VDC		
Load (@ voltage output)	≥ 500 kΩ	≥ 500 kΩ	≥ 500 kΩ		
Relays			2 x SPST, AC: 500 VA		1 x SPST, AC: 500 VA
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, universal AC / DC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	- / 7.5...35 VDC	- / 19.2...31.2 VDC
Max. required power, 1 / 2 channels	2.1 W / 2.8 W	2.1 W / 2.8 W	2.4 W / -	0.8 W	≤ 2.1 W
Isolation voltage, test / operation	3.75 kVAC / 250 VAC	2.6 kVAC / 250 VAC			
Response time	250 ms...60 s	250 ms...60 s	250 ms...60 s	1...60 s	0.4 / 1...60 s
Signal dynamics, input / output	22 bit / 16 bit	24 bit / 16 bit			
Accuracy	< ±0.05% of span	< ±0.1% of span			
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C			
NAMUR	NE21, NE43	NE21, NE43	NE21, NE43	NE21, NE43	NE21, NE43
Channels	1 or 2	2	1	1 or 2	1
Programming	5909 + DIP-switch	5909 + DIP-switch	5909	5909 + DIP-switch	4500 series devices

APPROVALS:					
ATEX, Zone 2					✓
IECEx, Zone 2					✓
UKEX, Zone 2					✓
FM, Zone 2 - DIV 2					✓
INMETRO, Zone 2					✓
UL 61010 / 508 / 913			- / ✓ / -		✓ / - / ✓
DNV	✓	✓	✓		✓
EAC	✓	✓	✓	✓	✓
SIL 2 Full Assessment IEC 61508					✓
CCC / KCs					✓ / ✓

APPLICATION GUIDE:					
mA / V / temperature input	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Bipolar mV input	✓	✓	✓	✓	
Lin. R / potentiometer input	✓ / ✓	✓ / ✓	✓ / ✓	✓ / -	✓ / ✓
4...20 mA Tx input	✓	✓	✓	✓	✓
Dual input - math functions		✓			
Buffered voltage output					
Active / passive current output	✓ / ✓	✓ / ✓	✓ / ✓	✓	✓ / ✓
Analog / relay output	✓ / -	✓ / -	✓ / ✓	✓ / -	✓ / ✓
Custom sensor linearization	✓	✓	✓		
Process signal calibration	✓	✓	✓	✓	✓
Power rail option					✓



= Full assessment acc. to IEC 61508

Of span = Of the presently selected range



TYPE	3202	3225	4222	4225
INPUT: Frequency, pulse, V, mA, Pt100, TC, mV OUTPUT: mA, V, pulse, relays	Pulse isolator / switch amplifier 	Universal frequency converter 	Universal I/f converter 	Universal f/I-f/f converter

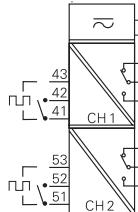
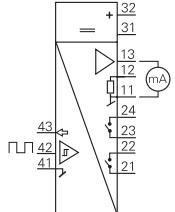
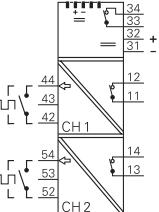
INPUT:	NAMUR / NPN / switch	All standard sensors	All standard sensors
Hz, measurement range / min. span	0...5 kHz	0...100 kHz / 0.001 Hz	0...100 kHz / 0.001 Hz
Min. pulse width	> 100 µs	4 µs	4 µs
mA, measurement range / min. span		0...23 mA / 16 mA	
V, measurement range / min. span		0...12 VDC	
RTD, measurement range / min. span		200...+850°C / -	
Lin. R, measurement range / pot.-meter		0 Ω...10 kΩ/10 Ω...100 kΩ	
Sensor connection, wires		2 - 3 - 4	
TC types		BEJKLNRSTUW3W5Lr	
OUTPUT:			
mA, signal range / min. span	0...23 mA / 16 mA		0...23 mA / 16 mA
V, signal range / min. span	0...11.5 VDC / 0.8 VDC		0...11.5 VDC / 4 VDC
Hz, signal range / min. span		0...25000 Hz / 0.001 Hz	0.001 Hz...100 kHz/0.001 Hz
Pulse output	NPN / relay		NPN / PNP / TTL
Relays	2 x SPST, AC: 100 VA	1 (3225B)	1 (4225A) / 2 (4225B)
Max. output frequency	5 kHz	25 kHz	100 kHz
Sensor supply	8.2 VDC	5...17 VDC	5...17 VDC
TECHNICAL SPECIFICATIONS:			
Ambient temperature	-25...+70°C	-25...+70°C	-20...+60
Supply voltage, AC / DC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	21.6...253V / 19.2...300V
Max. required power, 1 / 2 channels	1.2 W / -	1.2 W	2.6 W
Isolation voltage, test / operation	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.3 kVAC / 250 VAC
Response time	< 20 ms	< 30 ms	< 1 s
Signal dynamics, input / output		- / 18 bit	24 bit / -
Accuracy	< 0.06% of span	< 0.1% of span	< 0.06% of span
Temperature coefficient	0.006% / °C	< ±0.01% of span / °C	0.006% / °C
NAMUR	NE21, NE44	NE21, NE43	NE21
Channels	1	1	1
Programming	DIP-switch	DIP-switch, PR 4590	4500 series devices

APPROVALS:				
ATEX, Zone 2	✓	✓		
IECEx, Zone 2	✓	✓		
UKEx, Zone 2	✓	✓		
FM, Zone 2 - DIV 2	✓		✓	
UL 61010 / 508 / 913	✓ / - / -	✓ / - / -	- / ✓ / -	- / ✓ / -
DNV				
EAC			✓	
SIL 2, Hardware Assessment				✓
SIL 2 Full Assessment IEC 61508				
CCC	✓	✓		

APPLICATION GUIDE:				
Frequency to analog converter		✓		✓
Analog to frequency converter			✓	
Lin. R / potentiometer input			✓ / ✓	
Concurrent f/I and f/f				
Pulse converter / scaler				
Pulse isolator 1:1 / splitter	✓ / ✓			
Dual input - math functions				
Digital output	✓		✓	✓
Relay output	✓	✓		✓
Process signal calibration		✓	✓	
Power rail option	✓	✓		

ISOLATORS



TYPE	5202A	5223A	5225A	9202A	
INPUT: Frequency, pulse	Pulse isolator	Programmable f/I - f/f converter	Programmable f/I - f/f converter	Pulse isolator	
OUTPUT: mA, V, pulse, relays					
INPUT:					
Sensor type	NAMUR / switch	All standard sensors	All standard sensors	NAMUR / switch	
Hz, measurement range / min. span	0...5 kHz	0...20 kHz / 0.001 Hz	0...20 kHz / 0.001 Hz	0...5 kHz	
Min. pulse width	> 100 µs	25 µs	25 µs	> 100 µs	
OUTPUT:					
mA, signal range / min. span		0...23 mA / 5 mA	0...23 mA / 5 mA		
V, signal range / min. span		0...10 VDC / 0.25 VDC	0...10 VDC / 0.25 VDC		
Hz, signal range / min. span	0...5 kHz / -			0...5 kHz	
Pulse output	NPN / relay	NPN / PNP or relays	NPN / PNP or relays	NPN / relay	
Relays	2 x SPDT, AC: 100 VA	2 x SPST, AC: 500 VA	2 x SPST, AC: 500 VA	1 x SPST, AC: 500 VA	
Max. output frequency		1000 Hz	1000 Hz		
Sensor supply		5...17 VDC	5...17 VDC		
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	
Supply voltage, AC / DC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	- / 19.2...28.8 VDC	- / 19.2...31.2 VDC	
Max. required power, 1 / 2 channels	- / 1.5 W or 1.8 W*	3 W	3.5 W	≤ 1.1...1.3 W / ≤ 1.5...1.9 W	
Isolation voltage, test / operation	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	2.6 kVAC / 250 VAC	
Response time		60 ms...1000 s	60 ms...1000 s	200 ms	
Signal dynamics, input / output		- / 16 bit	- / 16 bit		
Accuracy		≤ ±0.1% of span	≤ ±0.1% of span		
Temperature coefficient		≤ ±0.01% of span / °C	≤ ±0.01% of span / °C		
NAMUR	NE21			NE21	
Channels	2	1	1	1 or 2	
Programming	DIP-switch	5909 + DIP-switch	5909 + DIP-switch	4500 series devices	

APPROVALS:

ATEX, Zone 2 / UKEX, Zone 2			✓ / ✓	
IECEx, Zone 2			✓	
FM, Zone 2 - DIV 2			✓	
INMETRO, Zone 2			✓	
UL 61010 / 508 / 913	- / ✓ / -		✓ / - / ✓	
DNV			✓	
EAC	✓	✓	✓	✓
SIL 2, Hardware Assessment	✓			✓
SIL 2 Full Assessment IEC 61508			✓	
CCC / KCs			✓ / ✓	

APPLICATION GUIDE:

Frequency to analog converter		✓	✓	
Analog to frequency converter				
Lin. R / potentiometer input				
Concurrent f/I and f/f			✓	
Pulse converter / scaler		✓	✓	
Pulse isolator 1:1				✓
Dual input - math functions	✓	✓		
Digital output		✓	✓	✓
Relay output	✓	✓	✓	✓
Process signal calibration	✓	✓	✓	
Power rail option				✓



= Full assessment acc. to IEC 61508



= FMEDA report

*1.5 W (2 relays) / 1.8 W (4 relays)

Of span = Of the presently selected range

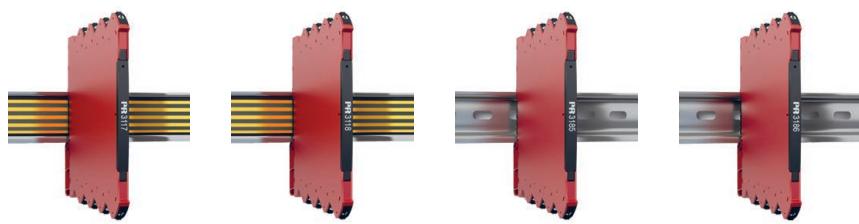
ISOLATORS



TYPE	3103	3104	3105	3108	3109
INPUT: mA, V, potentiometer	Isolated repeater 	Isolated converter 	Isolated converter 	Isolated repeater / splitter 	Isolated converter / splitter
INPUT: mA, measurement range / min. span V, measurement range / min. span Reference voltage / 2-wire supply	0...23 mA / 1:1 0...10.25 VDC / 4 VDC -/ > 17 V	0...23 mA / 16 mA 0...10.25 VDC / 4 VDC	0...23 mA / 16 mA 0...10.25 VDC / 4 VDC	0...23 mA / 1:1	0...23 mA / 16 mA 0...10.25 VDC / 4 VDC -/ > 17 V
OUTPUT: mA, signal range / min. span Load (@ current output) V, signal range / min. span Load (@ voltage output)	0...23 mA / 1:1 ≤ 600 Ω 0...10 VDC / 4 VDC ≥ 10 kΩ	0...23 mA / 16 mA ≤ 600 Ω 0...10 VDC / 4 VDC ≥ 10 kΩ	0...23 mA / 16 mA ≤ 600 Ω 0...10 VDC / 4 VDC ≥ 10 kΩ	0...23 mA / 1:1 ≤ 300 Ω per channel 0...10 VDC / 4 VDC ≥ 10 kΩ	0...23 mA / 16 mA ≤ 300 Ω per channel 0...10 VDC / 4 VDC ≥ 10 kΩ
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-25...+70°C	-25...+70°C	0...+70°C	-25...+70°C	-25...+70°C
Supply voltage, AC / DC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC
Max. required power*	0.65 W	1.2 W	0.8 W	0.75 W	1.2 W
Isolation voltage, test / operation	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC
Response time	< 7 ms	< 7 ms	< 7 ms	< 7 ms	< 7 ms
Signal dynamics, input / output	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain
Accuracy	< ±0.05% of span	< ±0.05% of span	< ±0.2% of span	< ±0.05% of span	< ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.015% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE21	NE21	NE21	NE21	NE21
Channels	1	1	1	1	1
Programming	No	DIP-switch	DIP-switch	No	DIP-switch
APPROVALS:					
ATEX, Zone 2	✓	✓		✓	✓
IECEx, Zone 2	✓	✓		✓	✓
UKEx, Zone 2	✓	✓		✓	✓
FM, Zone 2 - DIV 2	✓	✓		✓	✓
UL 61010 / 508	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
DNV	✓	✓	✓	✓	✓
EAC	✓	✓	✓	✓	✓
CCC	✓	✓		✓	✓
APPLICATION GUIDE:					
Signal repeater	✓			✓	
Signal converter		✓	✓		✓
Signal splitter				✓	✓
mA / V bipolar input		✓			✓
4...20 mA Tx input		✓			✓
Buffered voltage output		✓	✓		✓
mA / V output	✓ / -	✓ / ✓	✓ / ✓	✓ / -	✓ / ✓
Active / passive mA output	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
Mounting in Zone 2 / Div 2	✓	✓	✓	✓	✓
Power rail option	✓	✓	✓	✓	✓

* = @ 24 VDC

Of span = Of the presently selected range



TYPE	3117	3118	3185	3186	
INPUT: mA, V, potentiometer	Bipolar isolated converter	Bipolar isolated converter / splitter	Loop-powered isolator	2-wire transmitter isolator	
OUTPUT: mA, V					
INPUT:					
mA, measurement range / min. span	-23...+23 mA	-23...+23 mA	0...23 mA / 1:1	3.5...23 mA / 1:1	
V, measurement range / min. span	±5 and ±10 VDC	±5 and ±10 VDC			
Reference voltage / 2-wire supply				- / V _{loop} -2.5 VDC	
OUTPUT:					
mA, signal range / min. span	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 1:1	3.5...23 mA / 1:1	
Load (@ current output)	≤ 600 Ω	≤ 300 Ω per channel	≤ 600 Ω		
V, signal range / min. span	0...10 VDC / 4 VDC	0...10 VDC / 4 VDC			
Load (@ voltage output)	≥ 10 kΩ	≥ 10 kΩ			
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C	
Supply voltage, AC / DC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	≤ 1.25 V + (0.015 x Vout)	- / 6...35 VDC	
Max. required power	*0.8 W	*0.8 W	30 mW per channel	50 mW per channel	
Isolation voltage, test / operation	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	
Response time	< 7 ms	< 7 ms	< 5 ms	< 5 ms	
Signal dynamics, input / output	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain	
Accuracy	< ±0.05% of span	< ±0.05% of span	< ±0.1% of span	< ±0.05% of span	
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	
NAMUR	NE21	NE21	NE21	NE21	
Channels	1	1	1 or 2	1 or 2	
Programming	DIP-switch	DIP-switch	No	No	
APPROVALS:					
ATEX, Zone 2	✓	✓	✓	✓	
IECEx, Zone 2	✓	✓	✓	✓	
UKEX, Zone 2	✓	✓	✓	✓	
FM, Zone 2 - DIV 2	✓	✓	✓	✓	
UL 61010 / 508	✓ / -	✓ / -	✓ / -	✓ / -	
DNV	✓	✓	✓	✓	
EAC	✓	✓	✓	✓	
CCC	✓	✓	✓	✓	

APPLICATION GUIDE:				
Signal repeater			✓	✓
Signal converter	✓	✓		
Signal splitter		✓		
mA / V bipolar input	✓	✓ / ✓		
4...20 mA Tx input				✓
Buffered voltage output	✓	✓		
Active / passive input signal			✓ / -	✓ / ✓
mA / V output	✓ / ✓	✓ / ✓	✓ / -	✓ / -
Active / passive mA output	✓ / -	✓ / -	✓ / -	- / ✓
Mounting in Zone 2 / Div 2	✓	✓	✓	✓
Power rail option	✓	✓		

* = @ 24 VDC

Of span = Of the presently selected range



TYPE	5104A	5106A	6185		
INPUT: mA, mV, V, HART transparent	Repeater / power supply 	HART transparent repeater 	Loop-powered isolator 		
OUTPUT: mA, V, HART transparent					

INPUT: mA, measurement range / min. span V, measurement range / min. span Max. offset Reference voltage / 2-wire supply	0...23 mA / 16 mA 0...10 VDC / 8 VDC 20% of selec. max. value - / > 17.1 VDC	3.5...23 mA / 1:1 0...10 VDC / 0.8 VDC - / > 17 VDC	0...23 mA / 1:1 0...10 VDC / 0.8 VDC - / > 17 VDC		
OUTPUT: mA, signal range / min. span Load (@ current output) V, signal range / min. span Load (@ voltage output) Max. offset	0...23 mA / 16 mA ≤ 600 Ω 0...10 VDC / 0.8 VDC ≥ 500 kΩ 20% of selec. max. value	3.5...23 mA / 1:1 ≤ 600 Ω 0...10 VDC / 0.8 VDC - / ≤ 600 Ω 20% of selec. max. value	0...23 mA / 1:1 ≤ 600 Ω 0...10 VDC / 0.8 VDC - / ≤ 600 Ω 20% of selec. max. value		
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C		
Supply voltage, AC / DC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	- / ≤ 1.8 VDC		
Max. required power, 1 / 2 channels	2.0 W / 2.8 W	2.0 W / 2.8 W	40 mW per channel		
Isolation voltage, test / operation	3.75 KVAC / 250 VAC	3.75 KVAC / 250 VAC	2 KVAC / -		
Response time	< 25 ms	< 25 ms	< 4 ms		
Signal dynamics, input / output	Analog signal chain	Analog signal chain	Analog signal chain		
Accuracy	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.1% of span		
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C		
NAMUR	NE21	NE21			
Channels	1 or 2	1 or 2	1, 2 or 4		
Programming	DIP-switch	No	No		

APPROVALS:				
ATEX, Zone 2				
IECEx, Zone 2				
FM, Zone 2 - DIV 2				
UL 61010 / 508	- / ✓	- / ✓		
DNV	✓			
EAC	✓	✓	✓	

APPLICATION GUIDE:			
Signal repeater		✓	✓
Signal converter	✓		
Signal splitter			
mA / V bipolar input			
4...20 mA Tx input	✓	✓	
Buffered voltage output			
Active / passive input signal			✓ / -
mA / V output	✓ / ✓	✓ / -	✓ / -
Active / passive mA output	✓ / ✓	✓ / ✓	✓ / -
Mounting in Zone 2 / Div 2			
Power rail option			

Of span = Of the presently selected range

ISOLATORS



TYPE	9106A	9107A	9203A		
INPUT: mA, HART communication	HART transparent repeater	HART transparent driver	Solenoid / alarm driver		
OUTPUT: mA, HART communication					
INPUT: mA, measurement range / min. span V, measurement range / min. span Max. offset Reference voltage / 2-wire supply Sensor type	3.5...23 mA / 16 mA 3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	NPN / PNP / switch		
OUTPUT: mA, signal range / min. span Pulse output	3.5...23 mA / 16 mA Valves etc.	3.5...23 mA / 16 mA			
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C		
Supply voltage, AC / DC	- / 19.2...31.2 VDC	19.2...31.2 VDC	19.2...31.2 VDC		
Max. required power, 1 / 2 channels	≤ 1.1 W / ≤ 1.9 W	≤ 1.0 W / ≤ 1.8 W	≤ 1.9...2.5 W / ≤ 3.1 W		
Isolation voltage, test / operation	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC		
Response time	< 5 ms	< 5 ms	< 10 ms		
Signal dynamics,input	Analog signal chain	Analog signal chain			
Accuracy	≤ ±16 µA	≤ ±16 µA			
Temperature coefficient	≤ ±1.6 µA / °C	≤ ±0.01% of span / °C			
NAMUR	NE21	NE21	NE21		
Channels	1 or 2	1 or 2	1 or 2		
Programming	4500 series devices	4500 series devices	4500 series devices		
APPROVALS:					
ATEX, Zone 2	✓	✓	✓		
IECEx, Zone 2	✓	✓	✓		
UKEx, Zone 2	✓	✓	✓		
FM, Zone 2 - DIV 2	✓	✓	✓		
INMETRO, Zone 2	✓	✓	✓		
UL 61010 / 913	✓ / ✓	✓ / ✓	✓ / ✓		
DNV	✓	✓	✓		
EAC	✓	✓	✓		
SIL 2/3 Full Assessment IEC 61508	✓	✓	✓		
CCC / KCs	✓ / ✓	✓ / ✓	✓ / ✓		

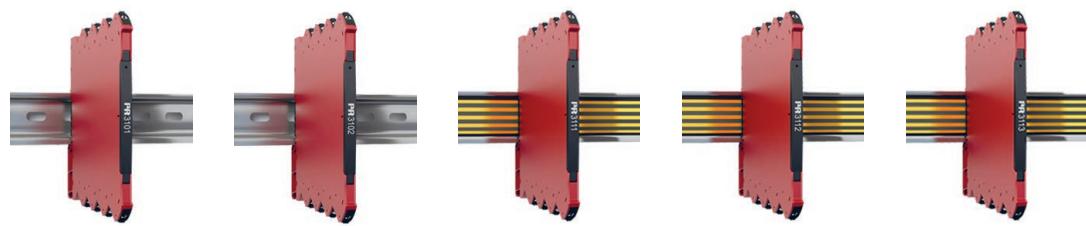
APPLICATION GUIDE:				
Signal repeater	✓			
Signal driver		✓		
Signal splitter	✓			
Solenoid / alarm driver			✓	
mA input	✓	✓		
4...20 mA Tx input	✓			
Active / passive mA output	✓ / ✓	✓ / -		
HART signal transparent	✓	✓		
Mounting in Zone 2 / Div 2	✓	✓	✓	
Power rail option	✓	✓	✓	



= Full assessment acc. to IEC 61508

TEMPERATURE TRANSMITTERS

HART
COMMUNICATION FOUNDATION



TYPE	3101	3102	3111	3112	3113
INPUT:	TC converter	Pt100 converter	TC converter - isolated	Pt100 converter - isolated	HART 7 temperature converter
RTD, linear resistance, TC, mV, mA, potentiometer					
OUTPUT:					
RTD, measurement range / min. span		-200...+850°C / 10°C		-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span					
Sensor connection, wires		2 - 3 - 4		2 - 3 - 4	2 - 3 - 4
TC types	J & K		J & K		J & K
Max. offset					
Cold junction compensation	Internal		Internal / external		Internal / external
OUTPUT:					
mA, signal range / min. span	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA
Load (@ current output)	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω
V, signal range / min. span	0...10 VDC / 4 VDC	0...10 VDC / 4 VDC	0...10 VDC / 4 VDC	0...10 VDC / 4 VDC	0...10 VDC / 4 VDC
Load (@ voltage output)	≥ 10 kΩ	≥ 10 kΩ	≥ 10 kΩ	≥ 10 kΩ	≥ 10 kΩ
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-25...70°C	-25...70°C	-25...70°C	-25...70°C	-25...70°C
Supply voltage, DC	16.8...31.2 VDC	16.8...31.2 VDC	16.8...31.2 VDC	16.8...31.2 VDC	16.8...31.2 VDC
Max. required power*	0.52 W	0.52 W	0.7 W	0.7 W	0.7 W
Isolation voltage, test / operation			2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC
Response time	< 30 ms	< 30 ms	< 30 ms	< 30 ms	< 60 ms
Signal dynamics, input / output	23 bit / 18 bit	23 bit / 18 bit	23 bit / 18 bit	23 bit / 18 bit	23 bit / 18 bit
Accuracy	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of span
Temperature coefficient	≤ ±0.01% of span / °C	≤ ±0.01% of span / °C	≤ ±0.01% of span / °C	≤ ±0.01% of span / °C	≤ ±0.01% of span / °C
NAMUR	NE21, NE43	NE21, NE43	NE21, NE43	NE21, NE43	NE21, NE43
Channels	1	1	1	1	1
Programming	DIP-switch	DIP-switch	DIP-switch	DIP-switch	DIP-switch / HART
APPROVALS:					
ATEX, Zone 2	✓	✓	✓	✓	✓
IECEx, Zone 2	✓	✓	✓	✓	✓
UKEX, Zone 2	✓	✓	✓	✓	✓
FM, Zone 2 - DIV 2	✓	✓	✓	✓	✓
UL 61010 / 508	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
DNV	✓	✓	✓	✓	✓
EAC	✓	✓	✓	✓	✓
APPLICATION GUIDE:					
RTD / TC / mV input	- / ✓ / -	✓ / - / -	- / ✓ / -	✓ / - / -	✓ / ✓ / -
mA / V output	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / -
Loop-powered					
Galvanically isolated			✓	✓	✓
HART protocol					✓
Mounting in Zone 2 / DIV 2	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓
Process signal calibration					✓
Power rail option			✓	✓	✓

* = @ 24 VDC

Of span = Of the presently selected range

TEMPERATURE TRANSMITTERS

HART
COMMUNICATION FOUNDATION



TYPE	3331	3333	3337		
INPUT:	Temperature converter, loop-powered - isolated	Pt100 converter, loop-powered	HART 7 temperature converter, loop-powered		
RTD, linear resistance, TC, mV					
OUTPUT: mA, V, HART communication					

INPUT:					
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C	-200...+850°C / 10°C		
Lin. R, measurement range / min. span					
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4		
TC types	J & K		J & K		
Max. offset					
Cold junction compensation	Internal / external		Internal / external		
OUTPUT:					
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA		
Load (@ current output)	≤ (V _{supply} -5.5)/0.023 [Ω]	≤ (V _{supply} -3.3)/0.023 [Ω]	≤ (V _{supply} -6.2)/0.023 [Ω]		
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-25...70°C	-25...70°C	-25...70°C		
Supply voltage, DC	5.5...35 VDC	3.3...35 VDC	6.2...35 VDC		
Max. required power	0.8 W	0.8 W	0.8 W		
Isolation voltage, test / operation	2.5 kVAC / 250 VAC		2.5 kVAC / 250 VAC		
Response time	< 30 ms	< 30 ms	< 60 ms		
Signal dynamics, input / output	23 bit / 18 bit	23 bit / 18 bit	23 bit / 18 bit		
Accuracy	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span		
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C		
NAMUR	NE21, NE43	NE21, NE43	NE21, NE43		
Channels	1	1	1		
Programming	DIP-switch	DIP-switch	DIP-switch / HART		

APPROVALS:					
ATEX, Zone 2	✓	✓	✓		
IECEx, Zone 2	✓	✓	✓		
UKEX, Zone 2	✓	✓	✓		
FM, Zone 2 - DIV 2	✓	✓	✓		
UL 61010 / 508	✓ / -	✓ / -	✓ / -		
DNV	✓	✓	✓		
EAC	✓	✓	✓		

APPLICATION GUIDE:					
RTD / TC / mV input	✓ / ✓ / -	✓ / - / -	✓ / ✓ / -		
mA / V output	✓ / -	✓ / -	✓ / -		
Loop-powered	✓	✓	✓		
Galvanically isolated	✓		✓		
HART protocol			✓		
Mounting in Zone 2 / DIV 2	✓ / ✓	✓ / ✓	✓ / ✓		
Process signal calibration			✓		



TYPE	5331A	5332A	5333A	5334A
INPUT: RTD, linear resistance, TC, mV, potentiometer	2-wire programmable transmitter	2-wire programmable RTD transmitter	2-wire programmable transmitter	2-wire programmable transmitter
OUTPUT: mA				

INPUT:				
mV, measurement range / min. span	-12...800 mV / 5 mV			-12...150 mV / 5 mV
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C	
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...10 kΩ / 30 Ω	
Potentiometer				
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3	
TC types	BEJKLNRSTUW3W5Lr			BEJKLNRSTUW3W5Lr
Max. offset	50% of selec. max. value			
Cold junction compensation	Internal / external			Internal
OUTPUT:				
mA, signal range / min. span	3.5...23 mA / 16 mA			
TECHNICAL SPECIFICATIONS:				
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C
Supply voltage, DC	7.2...35 VDC	7.2...35 VDC	8...35 VDC	7.2...35 VDC
Max. required power	0.8 W	0.8 W	0.8 W	0.8 W
Isolation voltage, test / operation	1500 VAC / 50 V			1500 VAC / 50 V
Response time	1...60 s	1...60 s	0.33...60 s	1...60 s
Signal dynamics, input / output	20 bit / 16 bit	20 bit / 16 bit	19 bit / 16 bit	18 bit / 16 bit
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C			
NAMUR	NE21, NE43	NE43	NE43	NE21, NE43
Channels	1	1	1	1
Programming	5909	5909	5909	5909

APPROVALS:				
ATEX, Zone 2	✓	✓	✓	✓
IECEx, Zone 2	✓	✓	✓	✓
CSA, Zone 2 - DIV 2	✓	✓	✓	
FM, Zone 2 - DIV 2				
INMETRO, Zone 2	✓	✓	✓	✓
NEPSI				
DNV	✓		✓	✓
EAC	✓		✓	✓
SIL Hardware Assessment				

APPLICATION GUIDE:				
RTD / TC / mV input	✓ / ✓ / ✓	✓ / - / -	✓ / - / -	- / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -	✓ / -	
Dual input (4 terminals)				
Custom sensor linearization	✓	✓	✓	✓
mA output	✓	✓	✓	✓
Loop-powered	✓	✓	✓	✓
Galvanically isolated	✓			✓
HART protocol				
Mounting in Zone 2 / DIV 2	✓ / -	✓ / -	✓ / -	✓ / -
Process signal calibration	✓	✓	✓	✓

Of span = Of the presently selected range

TEMPERATURE TRANSMITTERS



TYPE	5335A	5337A	5343A	5437A	5450A
INPUT:	2-wire transmitter with HART 5 protocol	2-wire transmitter with HART 7 protocol	2-wire level transmitter	2-wire HART 7 temperature transmitter	PROFIBUS PA temperature transmitter
RTD, linear resistance, TC, mV, potentiometer					
mA, HART communication, PROFIBUS PA					
OUTPUT:					
mV, measurement range	-800...+800 mV	-800...+800 mV		± 800 mV, -0.1...+1.7 V	± 800 mV, -0.1...+1.7 V
mV, min. span	2.5 mV	2.5 mV		2.5 mV	2.5 mV
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C		-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span	0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω		0...100 kΩ / 25 Ω	0...100 kΩ / 25 Ω
Potentiometer			0...100 kΩ / 1 kΩ	10 Ω...100 kΩ / 10%	10 Ω...100 kΩ / 10%
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4		2 - 3 - 4	2 - 3 - 4
TC types	BEJKNRSTUW3W5	BEJKNRSTUW3W5		BEJKNRSTUW3W5Lr	BEJKNRSTUW3W5Lr
Max. offset	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value		
Cold junction compensation	Internal / external	Internal / external	Internal / external	Internal / external	Internal / external
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	PROFIBUS PA
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-50...+85°C	-40...+85°C
Supply voltage, DC	8...35 VDC	8...35 VDC	8...35 VDC	7.5...48 VDC	9...32 VDC
Max. required power	0.8 W	0.8 W	0.8 W	< 850 mW	< 352 mW
Isolation voltage, test / operation	1500 VAC / 50 V	1500 VAC / 50 V		2.5 kVAC / 55 VAC	2.5 kVAC / 55 VAC
Response time	1...60 s	1...60 s	0.33...60 s	75 ms	< 400 ms
Signal dynamics, input / output	22 bit / 16 bit	22 bit / 16 bit	19 bit / 16 bit	24 bit / 18 bit	24 bit / -
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of reading
Temperature coefficient	< ±0.005% of span / °C	< ±0.005% of span / °C	< ±0.01% of span / °C	< ±0.005% of span / °C	< ±0.005% of reading / °C
NAMUR	NE21, NE43, NE89	NE21, NE43, NE89	NE43	NE 21/43/44/89/95/107/130	NE 21/44/89/107
Channels	1	1	1	1 or 2*	1 or 2*
Programming	5909/HART 5	5909/HART 7/HART 5	5909	5909 / HART 7 / HART 5	PROFIBUS PA
APPROVALS:					
ATEX, Zone 2	✓	✓	✓	✓	✓**
IECEx, Zone 2	✓	✓	✓	✓	✓**
CSA, Zone 2 - DIV 2	✓	✓	✓	✓	✓**
FM, Zone 2 - DIV 2				✓	✓**
INMETRO, Zone 2	✓	✓	✓	✓	✓**
NEPSI				✓	✓**
DNV / EU-RO marine	✓ / -	✓ / -	✓ / -	- / ✓	
EAC	✓	✓	✓	✓	✓**
SIL Hardware Assessment	✓	✓			
SIL 2/3 Full Assessment IEC 61508				✓ / ✓	
APPLICATION GUIDE:					
RTD / TC / mV input	✓ / ✓ / ✓	✓ / ✓ / ✓		✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -	✓ / ✓	✓ / ✓	✓ / ✓
Dual input (4 terminals)	✓	✓			
True dual input (7 terminals)				✓	✓
Custom sensor linearization	✓	✓	✓	✓	✓
mA output	✓	✓	✓	✓	✓
Loop-powered	✓	✓	✓	✓	✓
Galvanically isolated	✓	✓		✓	✓
HART protocol / bus communication	✓ / -	✓ / -	✓ / -	✓ / -	- / ✓
Mounting in Zone 2 / DIV 2	✓ / -	✓ / -	✓ / -	✓ / ✓	✓ / ✓
Process signal calibration	✓	✓	✓	✓	✓



= Full assessment acc. to IEC 61508

exida = FMEDA report
** = Approval pending

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Of span = Of the presently selected range

TEMPERATURE TRANSMITTERS

HART
COMMUNICATION FOUNDATION

HART
COMMUNICATION FOUNDATION



TYPE	6331A	6333A	6334A	6335A	6337A
INPUT: RTD, linear resistance, TC, mV, potentiometer	2-wire programmable transmitter	2-wire programmable transmitter	2-wire programmable transmitter	2-wire HART 5 transmitter	2-wire HART 7 transmitter
OUTPUT: mA, HART communication					
INPUT: mV, measurement range / min. span RTD, measurement range / min. span Lin. R, measurement range / min. span Potentiometer Sensor connection, wires TC types Max. offset Cold junction compensation	-12...800 mV / 5 mV -200...+850°C / 25°C 0...5000 Ω / 30 Ω 2 - 3 - 4 BEJKLNRSTUW3W5Lr 50% of selec. max. value Internal / external	-200...+850°C / 25°C 0...10 kΩ / 30 Ω 2 - 3 BEJKLNRSTUW3W5Lr 50% of selec. max. value Internal / external	-12...+150 mV / 5 mV -200...+850°C / 25°C 0...10 kΩ / 30 Ω 2 - 3 - 4 BEJKLNRSTUW3W5 50% of selec. max. value Internal	-800...+800 mV / 2.5 mV -200...+850°C / 10°C 0...7000 Ω / 25 Ω 2 - 3 - 4 BEJKLNRSTUW3W5 50% of selec. max. value Internal / external	-800...+800 mV / 2.5 mV -200...+850°C / 10°C 0...7000 Ω / 25 Ω 2 - 3 - 4 BEJKLNRSTUW3W5 50% of selec. max. value Internal / external
OUTPUT: mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C
Supply voltage, DC	7.2...35 VDC	8...35 VDC	7.2...35 VDC	8...35 VDC	8...35 VDC
Max. required power, 1 / 2 channels	0.8 W / 1.6 W	0.8 W / 1.6 W	0.8 W / 1.6 W	0.8 W / 1.6 W	0.8 W / 1.6 W
Isolation voltage, test / operation	1500 VAC / 50 V		1500 VAC / 50 V	1500 VAC / 50 V	1500 VAC / 50 V
Response time	1...60 s	0.33...60 s	1...60 s	1...60 s	1...60 s
Signal dynamics, input / output	20 bit / 16 bit	19 bit / 16 bit	18 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit
Accuracy	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.005% of span / °C	< ±0.005% of span / °C
NAMUR	NE21, NE43	NE43	NE21, NE43	NE21, NE43, NE89	NE21, NE43, NE89
Channels	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2
Programming	5909	5909	5909	5909/HART5	5909/HART7/HART5
APPROVALS:					
ATEX, Zone 2	✓	✓	✓	✓	✓
IECEx, Zone 2	✓	✓	✓	✓	✓
CSA, Zone 2 - DIV 2	✓	✓		✓	✓
FM, Zone 2 - DIV 2					
INMETRO, Zone 2	✓	✓	✓	✓	✓
UL 61010 / 508					
DNV					
EAC	✓	✓	✓	✓	✓
SIL Hardware Assessment				✓	✓
SIL 2 Full Assessment IEC 61508					
APPLICATION GUIDE:					
RTD / TC / mV input	✓ / ✓ / ✓	✓ / - / -	- / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -		✓ / -	✓ / -
Dual input (4 terminals)				✓	✓
Custom sensor linearization	✓	✓	✓	✓	✓
mA output	✓	✓	✓	✓	✓
Loop-powered	✓	✓	✓	✓	✓
Galvanically isolated	✓		✓	✓	✓
HART protocol				✓	✓
Mounting in Zone 2 / DIV 2	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
Process signal calibration	✓	✓	✓	✓	✓

TEMPERATURE TRANSMITTERS



TYPE	6437A	7501	9113A		
INPUT:	2-wire HART 7 temperature transmitter	Field mounted HART temperature transmitter	Temperature / mA converter		
RTD, linear resistance, TC, mV, mA, potentiometer					
OUTPUT:					
mA, HART communication					
mA, measurement range / min. span			0...23 mA / 16 mA		
mV, measurement range	± 800 mV, -0.1...+1.7 V	-800...+800 mV			
mV, min. span	2.5 mV	2.5 mV			
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C	-200...+850°C / 25°C		
Lin. R, measurement range / min. span	0...100 kΩ / 25 Ω	0...7000 Ω / 25 Ω			
Potentiometer	10 Ω...100 kΩ / 10%				
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4		
TC types	BEJKLNRSUW3W5Lr	BEJKLNRSUW3W5	BEJKLNRSUW3W5Lr		
Cold junction compensation	Internal / external	Internal / external	Internal / external		
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	0...23 mA / 16 mA		
OUTPUT:					
mA, signal range / min. span					
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-50...+85°C	-40...+85°C	-20...+60°C		
Supply voltage, DC	7.5...48 VDC	10 / 12...35 VDC	19.2...31.2 VDC		
Max. required power, 1 / 2 channels	< 850 mW / -		≤ 0.8 W / ≤ 1.4 W		
Isolation voltage, test / operation	2.5 kVAC / 55 VAC	1500 VAC / 50 VAC	2.6 kVAC / 250 VAC		
Response time	75 ms	1...60 s	0.4 / 1...60 s		
Signal dynamics, input / output	24 bit / 18 bit	22 bit / 16 bit	24 bit / 16 bit		
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span		
Temperature coefficient	< ±0.005% of span / °C	< ±0.005% of span / °C	< ±0.01% of span / °C		
NAMUR	NE21/43/44/89/107	NE21, NE43	NE21, NE43		
Channels	1 or 2*	1	1 or 2		
Programming	5909 / HART 7 / HART 5	LOI / HART	4500 series devices		
APPROVALS:					
ATEX, Zone 2 / IECEx, Zone 2	✓ / ✓	✓ / ✓	✓ / ✓		
UKEX, Zone 2			✓		
CSA, Zone 2 - DIV 2 / FM, Zone 2 - DIV 2	✓ / ✓		- / ✓		
INMETRO, Zone 2 / NEPSI	✓ / ✓	✓ / ✓	✓ / -		
UL 61010 / 913			✓ / ✓		
DNV / EU-RO marine	- / ✓	- / ✓	✓ / -		
EAC	✓	✓	✓		
SIL Hardware Assessment		✓			
SIL 2/3 Full Assessment IEC 61508	✓ / ✓		✓ / -		
CCC / KCs			✓ / ✓		
APPLICATION GUIDE:					
RTD / TC / mV input	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / -		
Lin. R / potentiometer input	✓ / ✓	✓ / -			
Dual input (4 terminals)		✓			
True dual input (8 terminals)	✓				
Custom sensor linearization	✓	✓			
mA output	✓	✓	✓		
Loop-powered	✓	✓			
Galvanically isolated	✓	✓	✓		
HART protocol	✓	✓			
Process signal calibration	✓	✓	✓		
Power rail option			✓		



= Full assessment acc. to IEC 61508

= FMEDA report
* = Single or true dual inputs

LOI = Local operator interface
Of span = Of the presently selected range



TYPE	5331D	5332D	5333D	5334B
INPUT: RTD, linear resistance, TC, mV, potentiometer	2-wire programmable transmitter	2-wire programmable RTD transmitter	2-wire programmable transmitter	2-wire programmable transmitter
OUTPUT: mA				
INPUT:				
mV, measurement range / min. span	-12...800 mV / 5 mV			-12...150 mV / 5 mV
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C	
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...10 kΩ / 30 Ω	
Potentiometer				
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3	
TC types	BEJ/KLN/RST/UW3/W5Lr			BE/J/KLN/RST/UW3/W5Lr
Max. offset				
Cold junction compensation	Internal / external	Internal / external		Internal
OUTPUT:				
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA
TECHNICAL SPECIFICATIONS:				
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C
Supply voltage, DC	7.2...30 VDC	7.2...30 VDC	8...30 VDC	7.2...30 VDC
Max. required power	0.7 W	0.7 W	0.7 W	0.7 W
Isolation voltage, test / operation	1500 VAC / 50 V			1500 VAC / 50 V
Response time	1...60 s	1...60 s	0.33...60 s	1...60 s
Signal dynamics, input / output	20 bit / 16 bit	20 bit / 16 bit	19 bit / 16 bit	18 bit / 16 bit
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE21, NE43	NE21, NE43	NE43	NE21, NE43
Channels	1	1	1	1
Programming	5909	5909	5909	5909
APPROVALS:				
ATEX	✓	✓	✓	✓
IECEx	✓	✓	✓	✓
FM	✓	✓	✓	✓
CSA	✓	✓	✓	✓
INMETRO	✓	✓	✓	✓
DNV	✓	✓	✓	✓
EAC Ex	✓	✓	✓	✓
NEPSI	✓	✓	✓	✓
SIL Hardware Assessment				
APPLICATION GUIDE:				
RTD / TC / mV input	✓ / ✓ / ✓	✓ / - / -	✓ / - / -	- / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -	✓ / -	
Dual input (4 terminals)				
Custom sensor linearization	✓	✓	✓	✓
mA output	✓	✓	✓	✓
Loop-powered	✓	✓	✓	✓
Galvanically isolated	✓			✓
HART protocol				
Process signal calibration	✓	✓	✓	✓

Of span = Of the presently selected range

I.S. TEMPERATURE TRANSMITTERS



TYPE	5335D	5337D	5343B	5437D	5450D
INPUT:	2-wire transmitter with HART 5 protocol	2-wire transmitter with HART 7 protocol	2-wire level transmitter	2-wire HART 7 temperature transmitter	PROFIBUS PA temperature transmitter
RTD, linear resistance, TC, mV, potentiometer					
mA, HART communication, PROFIBUS PA					
OUTPUT:					
mV, measurement range	-800...+800 mV	-800...+800 mV		-± 800 mV, -0.1...+1.7 V	-± 800 mV, -0.1...+1.7 V
mV, min. span	2.5 mV	2.5 mV		2.5 mV	2.5 mV
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C		-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span	0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω	0..100 kΩ / 1 kΩ 1 kΩ..100 kΩ	0..100 kΩ / 25 Ω 10 Ω..100 kΩ / 10%	0..100 kΩ / 25 Ω 10 Ω..100 kΩ / 10%
Potentiometer					
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4		2 - 3 - 4	2 - 3 - 4
TC types	BEJKNRSTUW3W5	BEJKNRSTUW3W5		BEJKNRSTUW3W5Lr	BEJKNRSTUW3W5Lr
Max. offset			50% of selec. max. value		
Cold junction compensation	Internal / external	Internal / external		Internal / external	Internal / external

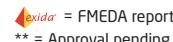
INPUT:					
mV, measurement range	-800...+800 mV	-800...+800 mV		-± 800 mV, -0.1...+1.7 V	-± 800 mV, -0.1...+1.7 V
mV, min. span	2.5 mV	2.5 mV		2.5 mV	2.5 mV
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C		-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span	0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω	0..100 kΩ / 1 kΩ 1 kΩ..100 kΩ	0..100 kΩ / 25 Ω 10 Ω..100 kΩ / 10%	0..100 kΩ / 25 Ω 10 Ω..100 kΩ / 10%
Potentiometer					
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4		2 - 3 - 4	2 - 3 - 4
TC types	BEJKNRSTUW3W5	BEJKNRSTUW3W5		BEJKNRSTUW3W5Lr	BEJKNRSTUW3W5Lr
Max. offset			50% of selec. max. value		
Cold junction compensation	Internal / external	Internal / external		Internal / external	Internal / external
OUTPUT:					
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	PROFIBUS PA
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-50...+85°C	-40...+85°C
Supply voltage, DC	8...30 VDC	8...30 VDC	8...30 VDC	7.5...30 VDC	9...30 VDC
Max. required power	0.7 W	0.7 W	0.7 W	< 850 mW	< 352 mW
Isolation voltage, test / operation	1500 VAC / 50 V	1500 VAC / 50 V		2.5 kVAC / 42 VAC	2.5 kVAC / 42 VAC
Response time	1...60 s	1...60 s	0.33...60 s	75 ms	< 400 ms
Signal dynamics, input / output	22 bit / 16 bit	22 bit / 16 bit	19 bit / 16 bit	24 bit / 18 bit	24 bit / -
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of reading
Temperature coefficient	< ±0.005% of span / °C	< ±0.005% of span / °C	< ±0.01% of span / °C	< ±0.005% of span / °C	< ±0.005% of reading / °C
NAMUR	NE21, NE43, NE89	NE21, NE43, NE89	NE43	NE21/43/44/89/95/107/130	NE21/44/89/107
Channels	1	1	1	1 or 2*	1 or 2*
Programming	5909/HART 5	5909/HART 7/HART 5	5909	5909 / HART 7 / HART 5	PROFIBUS PA

APPROVALS:					
ATEX	✓	✓	✓	✓	✓**
IECEx	✓	✓	✓	✓	✓**
FM	✓	✓	✓	✓	✓**
CSA	✓	✓	✓	✓	✓**
INMETRO	✓	✓	✓	✓	✓**
DNV / EU-RO marine	✓ / -	✓ / -	✓ / -	- / ✓	
EAC Ex				✓	✓**
NEPSI				✓	✓**
SIL Hardware Assessment	✓	✓		✓ / ✓	
SIL 2/3 Full Assessment IEC 61508					

APPLICATION GUIDE:					
RTD / TC / mV input	✓ / ✓ / ✓	✓ / ✓ / ✓		✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -	✓ / ✓	✓ / ✓	✓ / ✓
Dual input (4 terminals)	✓	✓			
True dual input (7 terminals)			✓	✓	✓
Custom sensor linearization	✓	✓	✓	✓	✓
mA output	✓	✓		✓	
Loop-powered	✓	✓		✓	
Galvanically isolated	✓	✓		✓	✓
HART protocol / bus communication	✓ / -	✓ / -		✓ / -	- / ✓
Process signal calibration	✓	✓		✓	✓



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* = Single or true dual inputs

Of span = Of the presently selected range



TYPE	6331B	6333B	6334B	6335D	6337D
INPUT: RTD, linear resistance, TC, mV, potentiometer	2-wire programmable transmitter	2-wire programmable transmitter	2-wire programmable transmitter	2-wire HART 5 transmitter	2-wire HART 7 transmitter
OUTPUT: mA, HART communication					
INPUT: mV, measurement range / min. span RTD, measurement range / min. span Lin. R, measurement range / min. span Potentiometer Sensor connection, wires TC types Max. offset Cold junction compensation	-12...800 mV / 5 mV -200...+850°C / 25°C 0...5000 Ω / 30 Ω 2 - 3 - 4 BEJKNRSTUW3W5Lr 50% of selec. max. value Internal / external	-12...+150 mV / 5 mV -200...+850°C / 25°C 0...10 kΩ / 30 Ω 2 - 3 BEJKNRSTUW3W5Lr 50% of selec. max. value Internal / external	-800...+800 mV / 2.5 mV -200...+850°C / 10°C 0...7000 Ω / 25 Ω 2 - 3 - 4 BEJKNRSTUW3W5 50% of selec. max. value Internal	-800...+800 mV / 2.5 mV -200...+850°C / 10°C 0...7000 Ω / 25 Ω 2 - 3 - 4 BEJKNRSTUW3W5 50% of selec. max. value Internal / external	-800...+800 mV / 2.5 mV -200...+850°C / 10°C 0...7000 Ω / 25 Ω 2 - 3 - 4 BEJKNRSTUW3W5 50% of selec. max. value Internal / external
OUTPUT: mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA
TECHNICAL SPECIFICATIONS: Ambient temperature Supply voltage, DC Max. required power, 1 / 2 channels Isolation voltage, test / operation Response time Signal dynamics, input / output Accuracy Temperature coefficient NAMUR Channels Programming	-40...+85°C 7.2...30 VDC 0.7 W / 1.4 W 1500 VAC / 50 V 1...60 s 20 bit / 16 bit ≤ ±0.05% of span < ±0.01% of span / °C NE21, NE43 1 or 2 5909	-40...+85°C 8...30 VDC 0.7 W / 1.4 W 1500 VAC / 50 V 0.33...60 s 19 bit / 16 bit ≤ ±0.1% of span < ±0.01% of span / °C NE43 1 or 2 5909	-40...+85°C 7.2...30 VDC 0.7 W / 1.4 W 1500 VAC / 50 V 1...60 s 18 bit / 16 bit ≤ ±0.05% of span < ±0.01% of span / °C NE21, NE43 1 or 2 5909	-40...+85°C 8...30 VDC 0.7 W / 1.4 W 1500 VAC / 50 V 1...60 s 22 bit / 16 bit ≤ ±0.05% of span < ±0.005% of span / °C NE21, NE43, NE89 1 or 2 5909/HART5	-40...+85°C 8...30 VDC 0.7 W / 1.4 W 1500 VAC / 50 V 1...60 s 22 bit / 16 bit ≤ ±0.05% of span < ±0.005% of span / °C NE21, NE43, NE89 1 or 2 5909/HART7/HART5
APPROVALS: ATEX IECEx FM CSA INMETRO UL DNV EAC Ex SIL Hardware Assessment	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
APPLICATION GUIDE: RTD / TC / mV input Lin. R / potentiometer input Dual input (4 terminals) Custom sensor linearization mA output Loop-powered Galvanically isolated HART protocol Process signal calibration	✓ / ✓ / ✓ ✓ / - ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ / - / - ✓ / - ✓ ✓ ✓ ✓ ✓ ✓ ✓	- / ✓ / ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ / ✓ / ✓ ✓ / - ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ / ✓ / ✓ ✓ / - ✓ ✓ ✓ ✓ ✓ ✓ ✓

I.S. TEMPERATURE TRANSMITTERS

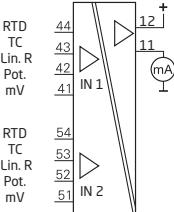
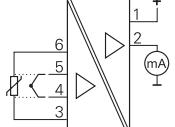


HART
COMMUNICATION FOUNDATION
SIL 2/3



HART
COMMUNICATION FOUNDATION



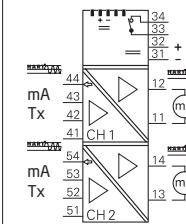
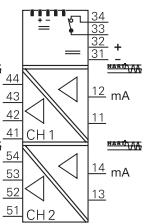
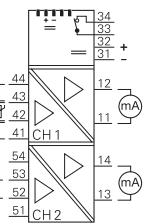
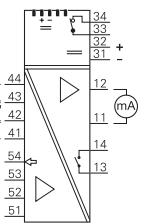
TYPE	6437D	7501			
INPUT:	2-wire HART 7 temperature transmitter	Field mounted HART temperature transmitter			
RTD, linear resistance, TC, mV, potentiometer					
mA, HART communication					
INPUT:					
mV, measurement range	± 800 mV, -0.1...+1.7 V	-800...+800 mV			
mV, min. span	2.5 mV	2.5 mV			
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C			
Lin. R, measurement range / min. span	0...100 kΩ / 25 Ω	0...7000 Ω / 25 Ω			
Potentiometer	10 Ω...100 kΩ / 10%				
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4			
TC types	BEJKNRSTUW3W5Lr	BEJKNRSTUW3W5			
Cold junction compensation	Internal / external	Internal / external			
OUTPUT:					
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA			
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-50...+85°C	-40...+85°C			
Supply voltage, DC	7.5...30 VDC	10 / 12...30 VDC			
Max. required power, 1 / 2 channels	< 850 mW / -				
Isolation voltage, test / operation	2.5 kVAC / 42 VAC	1500 VAC / 50 V			
Response time	75 ms	1...60 s			
Signal dynamics, input / output	24 bit / 18 bit	22 bit / 16 bit			
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span			
Temperature coefficient	< ±0.005% of span / °C	< ±0.005% of span / °C			
NAMUR	NE21/43/44/89/107	NE21, NE43			
Channels	1 or 2*	1			
Programming	5909 / HART 7 / HART 5	LOI / HART			
APPROVALS:					
ATEX	✓	✓			
IECEx	✓	✓			
FM	✓	✓			
CSA	✓	✓			
INMETRO	✓	✓			
EU-RO marine	✓	✓			
EAC Ex	✓	✓			
NEPSI	✓	✓			
SIL Hardware Assessment	✓ / ✓	✓ / ✓			
SIL 2/3 Full Assessment IEC 61508					
APPLICATION GUIDE:					
RTD / TC / mV input	✓ / ✓ / ✓	✓ / ✓ / ✓			
Lin. R / potentiometer input	✓ / ✓	✓ / -			
Dual input (4 terminals)		✓			
True dual input (8 terminals)	✓				
Custom sensor linearization	✓	✓			
mA output	✓	✓			
Loop-powered	✓	✓			
Galvanically isolated	✓	✓			
HART protocol	✓	✓			
Process signal calibration	✓	✓			


HART
COMMUNICATION FOUNDATION
SIL 2/3

HART
COMMUNICATION FOUNDATION
SIL 2

SIL 2

SIL 2

**TYPE****9106B****9107B****9113B****9116B****INPUT:**
 mA, mV, V, potentiometer,
 RTD, Lin. R, TC,
 HART communication
OUTPUT:
 mA, relays,
 HART communication
HART transparent repeater**HART transparent driver****Temperature / mA converter****Universal converter****INPUT:**

mA, measurement range / min. span

3.5...23 mA / 16 mA

3.5 ...23 mA / 16 mA

0...23 mA / 16 mA

0...23 mA / 16 mA

V, measurement range / min. span

RTD, measurement range / min. span

Lin. R, measurement range / min. span

Potentiometer

Sensor connection, wires

TC types

OUTPUT:

mA, signal range / min. span

3.5...23 mA / 16 mA

3.5...23 mA / 16 mA

0...23 mA / 16 mA

0...23 mA / 16 mA

Relay

1 x SPST, AC: 500 VA

TECHNICAL SPECIFICATIONS:

Ambient temperature

-20...+60°C

-20...+60°C

-20...+60°C

-20...+60°C

Supply voltage, DC

19.2...31.2 VDC

19.2...31.2 VDC

19.2...31.2 VDC

Max. required power, 1 / 2 channels

 $\leq 1.1 \text{ W} / \leq 1.9 \text{ W}$ $\leq 1.0 \text{ W} / \leq 1.8 \text{ W}$ $\leq 0.8 \text{ W} / \leq 1.4 \text{ W}$ $\leq 2.1 \text{ W} / -$

Isolation voltage, test / operation

2.6 kVAC / 250 VAC

Response time

< 5 ms

< 5 ms

0.4 / ...60 s

0.4 / ...60 s

Signal dynamics, input / output

Analog signal chain

Analog signal chain

24 bit / 16 bit

24 bit / 16 bit

Accuracy

 $< \pm 16 \mu\text{A}$ $< \pm 16 \mu\text{A}$ $\leq \pm 0.1\% \text{ of span}$ $\leq \pm 0.1\% \text{ of span}$

Temperature coefficient

 $< \pm 0.01\% \text{ of span} / ^\circ\text{C}$ $< \pm 0.01\% \text{ of span} / ^\circ\text{C}$ $< \pm 0.01\% \text{ of span} / ^\circ\text{C}$ $< \pm 0.01\% \text{ of span} / ^\circ\text{C}$

NAMUR

NE21

NE21

NE21, NE43

NE21, NE43

Channels

1 or 2

1 or 2

1 or 2

1

Programming

4500 series devices

4500 series devices

4500 series devices

4500 series devices

APPROVALS:

ATEX

✓

✓

✓

✓

IECEx

✓

✓

✓

✓

UKEx

✓

✓

✓

✓

FM

✓

✓

✓

✓

INMETRO

✓

✓

✓

✓

UL 61010 / 913

✓ / ✓

✓ / ✓

✓ / ✓

✓ / ✓

DNV

✓

✓

✓

✓

EAC Ex

✓

✓

✓

✓

SIL 2/3 Full Assessment IEC 61508

✓ / ✓

✓ / -

✓ / -

✓ / -

CCC / KCs

✓ / ✓

✓ / ✓

✓ / ✓

✓ / ✓

APPLICATION GUIDE:

AI barrier

✓

✓

✓

✓

AO barrier

✓

✓

✓

✓

DI barrier

✓

✓

✓

✓

DO barrier

✓ / - / -

✓ / - / -

✓ / - / ✓

✓ / ✓ / ✓

mA / V / temperature input

✓ / - / -

✓ / - / -

✓ / - / ✓

✓ / - / ✓

4...20 mA Tx input

✓

✓

✓

✓

mA / V / relay output

✓ / - / -

✓ / - / -

✓ / - / -

✓ / - / ✓

Active / passive mA output

✓ / ✓

✓ / -

✓ / ✓

✓ / ✓

HART signal transparent

✓

✓

✓

✓

Process signal calibration

✓

✓

✓

✓

Power rail option

✓

✓

✓

✓



= Full assessment acc. to IEC 61508

SIL 2/3

Of span = Of the presently selected range



TYPE	9202B	9203B			
INPUT: Hz	Pulse isolator	Solenoid / alarm driver			
OUTPUT: Pulse, relay					
INPUT: mA, measurement range / min. span V, measurement range / min. span RTD, measurement range / min. span Lin. R, measurement range / min. span Potentiometer Sensor connection, wires TC types Sensor type Hz, measurement range / min. span Min. pulse width	NAMUR / switch 0...5 kHz 100 µs	NPN / PNP / switch			
OUTPUT: mA, signal range / min. span Pulse output Hz, signal range Relay	NPN / relay 0...5 kHz 1 x SPST, AC: 500 VA	Valves etc.			
TECHNICAL SPECIFICATIONS: Ambient temperature Supply voltage, DC Max. required power, 1 / 2 channels Isolation voltage, test / operation Response time Signal dynamics, input / output Accuracy Temperature coefficient NAMUR Channels Programming	-20...+60°C 19.2...31.2 VDC ≤ 1.1...1.3 W / ≤ 1.5...1.9 W 2.6 kVAC / 250 VAC 200 ms	-20...+60°C 19.2...31.2 VDC ≤ 1.9...2.5 W / ≤ 3.1 W 2.6 kVAC / 250 VAC < 10 ms			
APPROVALS: ATEX IECEx UKEX FM INMETRO UL 61010 / 913 DNV EAC Ex SIL 2/3 Full Assessment IEC 61508 CCC / KCs	✓ ✓ ✓ ✓ ✓ ✓ / ✓ ✓ ✓ ✓ / - ✓ / ✓	✓ ✓ ✓ ✓ ✓ / ✓ ✓ ✓ ✓ / - ✓ / ✓			
APPLICATION GUIDE: AI barrier AO barrier DI barrier DO barrier mA / V / temperature input 4...20 mA Tx input mA / V / relay output Active / passive mA output HART signal transparent Process signal calibration Power rail option			✓ ✓		



= Full assessment acc. to IEC 61508

Of span = Of the presently selected range



TYPE	5104B	5105B	5106B	
INPUT: mA, mV, V, potentiometer, RTD, linear resistance, TC, HART transparent	Ex repeater / power supply	Ex-isolated driver	HART transparent repeater	
OUTPUT: mA, V, relays, HART transparent				
INPUT: mA, measurement range / min. span V, measurement range / min. span mV, measurement range / min. span RTD, measurement range / min. span Lin. R, measurement range / min. span Potentiometer Sensor connection, wires TC types Max. offset	0...23 mA / 16 mA 0...10 VDC / 8 VDC	0...23 mA / 16 mA 0...10 VDC / 8 VDC	3.5...23 mA / 16 mA	
OUTPUT: mA, signal range / min. span Load (@ current output) V, signal range / min. span Max. offset	0...23 mA / 16 mA $\leq 600 \Omega$ 0...10 VDC / 0.8 VDC 20% of selec. max. value	0...23 mA / 16 mA $\leq 770 \Omega$ 0...10 VDC / 0.8 VDC 20% of selec. max. value	3.5...23 mA / 16 mA $\leq 600 \Omega$ 0...10 VDC / 0.8 VDC 20% of selec. max. value	
TECHNICAL SPECIFICATIONS: Ambient temperature Supply voltage, AC / DC Max. required power, 1 / 2 channels Isolation voltage, test / operation Response time Signal dynamics, input / output Accuracy Temperature coefficient NAMUR Channels Programming	-20...+60°C 21.6...253V / 19.2...300V 2.0 W / 2.8 W 3.75 KVAC / 250 VAC < 25 ms Analog signal chain $\leq \pm 0.1\%$ of span $\leq \pm 0.01\%$ of span / °C NE21 1 or 2 DIP-switch	-20...+60°C 21.6...253V / 19.2...300V 1.3 W / 2.0 W 3.75 KVAC / 250 VAC < 25 ms Analog signal chain $\leq \pm 0.1\%$ of span $\leq \pm 0.01\%$ of span / °C NE21 1 or 2 DIP-switch	-20...+60°C 21.6...253V / 19.2...300V 2.0 W / 2.8 W 3.75 KVAC / 250 VAC < 25 ms Analog signal chain $\leq \pm 0.1\%$ of span $\leq \pm 0.01\%$ of span / °C NE21 1 or 2 No	
APPROVALS: ATEX IECEx FM CSA UL DNV EAC Ex	✓	✓	✓	
APPLICATION GUIDE: AI barrier AO barrier DI barrier DO barrier RTD / TC input mA / V / mV input 4...20 mA Tx input Lin. R / potentiometer input mA / V / relay output Active / passive mA output Process signal calibration	✓ / ✓ / - ✓	✓ / ✓ / - ✓ / -	✓ / - / - ✓ / ✓	Of span = Of the presently selected range



TYPE	5114B	5115B	5116B	5131B
INPUT: mA, mV, V, potentiometer, RTD, linear resistance, TC	Programmable transmitter	Signal calculator	Programmable transmitter	2-wire programmable transmitter
OUTPUT: mA, V, relays,				
INPUT: mA, measurement range / min. span V, measurement range / min. span mV, measurement range / min. span RTD, measurement range / min. span Lin. R, measurement range / min. span Potentiometer Sensor connection, wires TC types Max. offset	0...100 mA / 4 mA 0...250 VDC / 5 mV -150...+150 mV / 5 mV -200...+850°C / 25°C 0...5000 Ω / 30 Ω 200 Ω...100 kΩ 2 - 3 - 4 BEJKNRSTUW3W5Lr 50% of selec. max. value	0...100 mA / 4 mA 0...250 VDC / 5 mV -150...+150 mV / 5 mV -200...+850°C / 25°C 0...5000 Ω / 30 Ω 200 Ω...100 kΩ 2 - 3 - 4 BEJKNRSTUW3W5Lr 50% of selec. max. val.	0...100 mA / 4 mA 0...250 VDC / 5 mV -2500...+2500 mV/5 mV -200...+850°C / 25°C 0...5000 Ω / 30 Ω 200 Ω...100 kΩ 2 - 3 - 4 BEJKNRSTUW3W5Lr 50% of selec. max. val.	0...100 mA / 4 mA 0...250 VDC / 5 mV -150...+150 mV / 5 mV -200...+850°C / 25°C 0...5000 Ω / 30 Ω 200 Ω...100 kΩ 2 - 3 - 4 BEJKNRSTUW3W5Lr 50% of selec. max. val.
OUTPUT: mA, signal range / min. span Load (@ current output) V, signal range / min. span Max. offset Relays	0...23 mA / 10 mA 600 Ω 0...10 VDC / 0.5 VDC 50% of selec. max. value	0...23 mA / 10 mA 600 Ω 0...10 VDC / 0.5 VDC 50% of selec. max. val.	0...23 mA / 10 mA 600 Ω 0...10 VDC / 0.5 VDC 50% of selec. max. val.	3.5...23 mA / 10 mA 600 Ω 0...10 VDC / 0.5 VDC 50% of selec. max. val. 2 x SPST, AC: 500 VA
TECHNICAL SPECIFICATIONS: Ambient temperature Supply voltage, AC / DC Max. required power, 1 / 2 channels Isolation voltage, test / operation Response time Signal dynamics, input / output Accuracy Temperature coefficient NAMUR Channels Programming	-20...+60°C 21.6...253V / 19.2...300V 2.1 W / 2.8 W 3.75 kVAC / 250 VAC 250 ms...60 s 22 bit / 16 bit ≤ ±0.05% of span < ±0.01% of span / °C NE21, NE43 1 or 2 5909 + DIP-switch	-20...+60°C 21.6...253V / 19.2...300V 2.1 W / 2.8 W 3.75 kVAC / 250 VAC 250 ms...60 s 22 bit / 16 bit ≤ ±0.05% of span < ±0.01% of span / °C NE21, NE43 2 5909 + DIP-switch	-20...+60°C 21.6...253V / 19.2...300V 2.4 W / - 3.75 kVAC / 250 VAC 250 ms...60 s 22 bit / 16 bit ≤ ±0.05% of span < ±0.01% of span / °C NE21, NE43 1 5909	-20...+60°C -/ 7.5...35 VDC 0.8 W / 1.6 W 3.75 kVAC / 250 VAC 250 ms...60 s 22 bit / 16 bit ≤ ±0.05% of span < ±0.01% of span / °C NE21, NE43 1 or 2 5909 + DIP-switch
APPROVALS: ATEX IECEx FM CSA UL DNV EAC Ex	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓
APPLICATION GUIDE: AI barrier AO barrier DI barrier DO barrier RTD / TC input mA / V / mV input 4...20 mA Tx input Lin. R / potentiometer input mA / V / relay output Active / passive mA output Process signal calibration	✓ ✓ / ✓ ✓ ✓ / ✓ ✓ / ✓ ✓ / ✓ / - ✓ / ✓	✓ ✓ / ✓ / ✓ ✓ ✓ / ✓ ✓ / ✓ / - ✓ / ✓	✓ ✓ ✓ ✓ / ✓ ✓ ✓	✓ ✓ / - / - - / ✓ ✓

Of span = Of the presently selected range



TYPE	5202B	5203B	5223B	5420B
INPUT: Frequency, pulse	Pulse isolator	Ex solenoid / alarm driver	Programmable f/I - f/f converter	Ex power supply for 2-wire Tx
OUTPUT: mA, V, pulse, relays				
INPUT:				
mA, measurement range / min. span				
V, measurement range / min. span				
mV, measurement range / min. span				
RTD, measurement range / min. span				
Lin. R, measurement range / min. span				
Potentiometer				
Sensor connection, wires				
TC types				
Sensor type	NAMUR / switch	NPN / PNP / switch	NAMUR / switch	
Hz, measurement range / min. span	0...5 kHz		0...20 kHz / 0.001 Hz	
OUTPUT:				
mA, signal range / min. span			0...23 mA / 5 mA	
V, signal range / min. span			0...10 VDC / 0.25 VDC	
Pulse output	NPN / relay	Valves etc.	NPN / PNP / relay	
Hz, signal range	0...5 kHz		0...1000 Hz	
Relays	2 x SPDT, AC: 100 VA		2 x SPDT, AC: 100 VA	1 x SPDT, AC: 100 VA
Voltage / current				> 18 VDC / 20 mA
TECHNICAL SPECIFICATIONS:				
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, AC / DC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V
Max. required power, 1 / 2 channels	- / 1.8 W	2.0 W / 2.5 W	3 W / -	- / 2.5 W
Isolation voltage, test / operation	3.75 KVAC / 250 VAC	3.75 KVAC / 250 VAC	3.75 KVAC / 250 VAC	3.75 KVAC / 250 VAC
Response time			60 ms...1000 s	
Signal dynamics, input / output			- / 16 bit	
Accuracy			< ±0.01% of span / °C	
Temperature coefficient				
NAMUR	NE21	NE21	NE21	NE21
Channels	2	1 or 2	1	2
Programming	DIP-switch	DIP-switch	5909 + DIP-switch	No
APPROVALS:				
ATEX	✓	✓	✓	✓
IECEx				
FM	✓			
CSA		✓		
UL			✓	
DNV				✓
EAC Ex	✓	✓	✓	
SIL 2, Hardware Assessment	✓	✓	✓	
APPLICATION GUIDE:				
AI barrier				
AO barrier				
DI barrier	✓			
DO barrier		✓		
mA / V / temperature input				
4...20 mA Tx input			✓	
mA / V / relay output				
Active / passive mA output				
Process signal calibration			✓	



TYPE	5531A	5714	5715	5725	
INPUT:	Loop-powered LCD indicator	Programmable LED indicator	Programmable LED indicator	Programmable frequency indicator	
RTD, TC, mV, mA, V, potentiometer, frequency, pulse					
OUTPUT:	Display, mA, relays				
INPUT:					
mA, measurement range / min. span	3.6...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA		
V, measurement range / min. span		0...12 VDC / 0.8 V	0...12 VDC / 0.8 V		
Sensor type				All standard sensors \square	
Hz, measurement range / min. span				0...50 kHz / 0.001 Hz	
Min. pulse width				25 μ s	
RTD, measurement range / min. span		-200...+850°C	-200...+850°C		
Lin. R, measurement range / min. span		0...10000 Ω / -	0...10000 Ω / -		
Potentiometer		10 Ω ...100 k Ω	10 Ω ...100 k Ω		
Sensor connection, wires		2 - 3 - 4	2 - 3 - 4		
TC types		BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr		
Cold junction compensation		Internal	Internal		
Reference voltage / 2-wire supply		- / >15 VDC	- / >15 VDC		
Sensor supply				5...17 VDC	
OUTPUT:					
Display, digit / type	4-digit / LCD	4-digit / LED	4-digit / LED	4-digit / LED	
Display, digit height	16 mm	13.8 mm	13.8 mm	13.8 mm	
mA, signal range / min. span		0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	
Relay		2 x SPDT, AC: 500 VA	4 x SPDT, AC: 500 VA	2 x SPDT, AC: 500 VA	
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	
Supply voltage, universal AC / DC	- / 1.5 VDC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	
Max. required power	<35 mW	3.5 W	3.8 W	3.6 W	
Isolation voltage, test / operation		2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	
Response time	< 1 s	< 400 ms / < 1 s	< 400 ms / < 1 s	1...60 s	
Accuracy	$\leq \pm 0.1\%$ of span	$\leq \pm 0.1\%$ of reading	$\leq \pm 0.1\%$ of reading	$\leq \pm 0.1\%$ of reading	
Temperature coefficient	$\leq \pm 0.01\%$ of span / °C	$\leq \pm 0.01\%$ of reading / °C	$\leq \pm 0.01\%$ of reading / °C	$\leq \pm 0.01\%$ of reading / °C	
NAMUR		NE43	NE43	NE43	
Programming	Switch / front keys	Front keys	5909 / front keys	Front keys	
APPROVALS:					
ATEX, Zone 2	✓				
IECEx, Zone 2	✓				
UL 508		✓	✓	✓	
DNV EU-RO marine		✓	✓	✓	
EAC	✓	✓	✓	✓	
CCC	✓				

APPLICATION GUIDE:

mA / V / mV input	✓ / - / -	✓ / ✓ / -	✓ / ✓ / -	
Temperature input		✓	✓	
Lin. R / potentiometer input		✓ / ✓	✓ / ✓	
Frequency input				✓
Custom sensor linearization			✓	
4...20 mA Tx input		✓	✓	
Loop-powered	✓			
mA output		✓	✓	✓
2 / 4 relay outputs		✓ / -	- / ✓	✓ / -
Process signal calibration	✓	✓	✓	✓
Mounting in Zone 2	✓			

Of span = Of the presently selected range

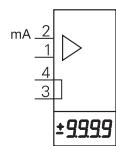


TYPE

5531B

INPUT:
mA

Loop-powered
LCD indicator



OUTPUT:
Display

INPUT:

mA, measurement range / min. span 3.6...23 mA / 16 mA

OUTPUT:
Display, digit / type
Display, digit height

4-digit / LCD
16 mm

TECHNICAL SPECIFICATIONS:

Ambient temperature	-20...+60°C
Supply voltage, universal AC / DC	- / 1.5 VDC
Max. required power	<35 mW
Isolation voltage, test / operation	
Response time	< 1 s
Accuracy	≤ ±0.1% of span
Temperature coefficient	≤ ±0.01% of span / °C
NAMUR	
Programming	Switch / front keys

APPROVALS:

ATEX
IECEx
DNV
EAC Ex
CCC

✓
✓
✓
✓

APPLICATION GUIDE:

Loop-powered
Mounting in Zone 1 / 21
Field enclosure

✓
✓

POWER SUPPLIES



TYPE	3405	9410	9421		
INPUT:					
AC, DC voltage					
OUTPUT:					
Stabilized VDC					
INPUT:					
Supply voltage, AC			85...132 VAC or 187...264 VAC		
Supply voltage, DC	16.8...31.2 VDC	21.6...26.4 VDC			
Supply voltage, back-up		21.6...26.4 VDC			
OUTPUT:					
Voltage	16.8...31.2 VDC	21.6...26.4 VDC	24 VDC		
Current	2.5 ADC	4 ADC	4.8 ADC		
Power, max.	60 W	96 W	115 W		
Status relay		1 x SPDT, AC: 500 VA			
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-25...+70°C	-20...+60°C	-20...+60°C		
Max. required power		96 W	< 135 W		
Isolation, test		2.6 kVAC	4.3 kVAC		
Short circuit protection	No	Yes	Yes		
Output ripple	Same as input	Same as input	200 mV peak / peak		
Channels	1	1	1		
Programming	No	No	No		
APPROVALS:					
ATEX, Zone 2	✓	✓	✓		
IECEx, Zone 2	✓	✓			
UKEx, Zone 2	✓				
CSA, Zone 2 - DIV 2			✓		
FM, Zone 2 - DIV 2	✓	✓			
INMETRO, Zone 2		✓			
UL 61010 / 508 / 913	✓ / - / -	✓ / - / ✓	- / ✓ / -		
DNV	✓	✓			
EAC	✓	✓	✓		
CCC / KCs		✓ / ✓			
APPLICATION GUIDE:					
115 / 230 VAC mains supply			✓		
24 VDC output			✓		
60 W power rail connector unit	✓				
96 W power rail connector unit		✓			
Redundancy power rail function		✓			
Collective status signal monitor		✓			
Internal fuse		✓	✓		
Mounting in Zone 2 / Div 2	✓	✓	✓		



TYPE	2224	2261		
INPUT: mA, V, potentiometer, joystick, load cell, mV	Valve controller	mV transmitter		
OUTPUT: mA, V				

INPUT:			
mA, measurement range / min. span	0...20 mA / 16 mA		
V, measurement range / min. span	-10...+10 VDC / 0.8 VDC	-40...+100 mV / 10 mV	
Potentiometer	> 1 kΩ		
Digital input	3 x PNP	1 x NPN / 1 x PNP	
Max. offset	20% of selec. max. value	70% of selec. max. value	
Excitation / reference voltage	- / -10...+10 VDC	5...13 VDC / -	
OUTPUT:			
mA, signal range / min. span	3000 mA	0...20 mA / 5 mA	
V, signal range / min. span	Supply-0.5 VDC	0...10 VDC / 0.25 VDC	
Max. offset		50% of selec. max. value	
Display, digit / type	3-digit / LED	3-digit / LED	
TECHNICAL SPECIFICATIONS:			
Ambient temperature	-20...+60°C	-20...+60°C	
Supply voltage, DC	12 or 24 VDC	19.2...28.8 VDC	
Max. required power	2.2 W	2.2 W / max. 7.2 W	
Response time	< 75 ms	60 ms...999 s	
Signal dynamics, input / output	12 bit / -	17 bit / 16 bit	
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	
Channels	1 or 2 outputs	1	
Programming	Switch / front keys	Switch / front keys	

A user-friendly and reliable mounting solution between the DCS/PLC/SIS system and isolators/I.S. interfaces

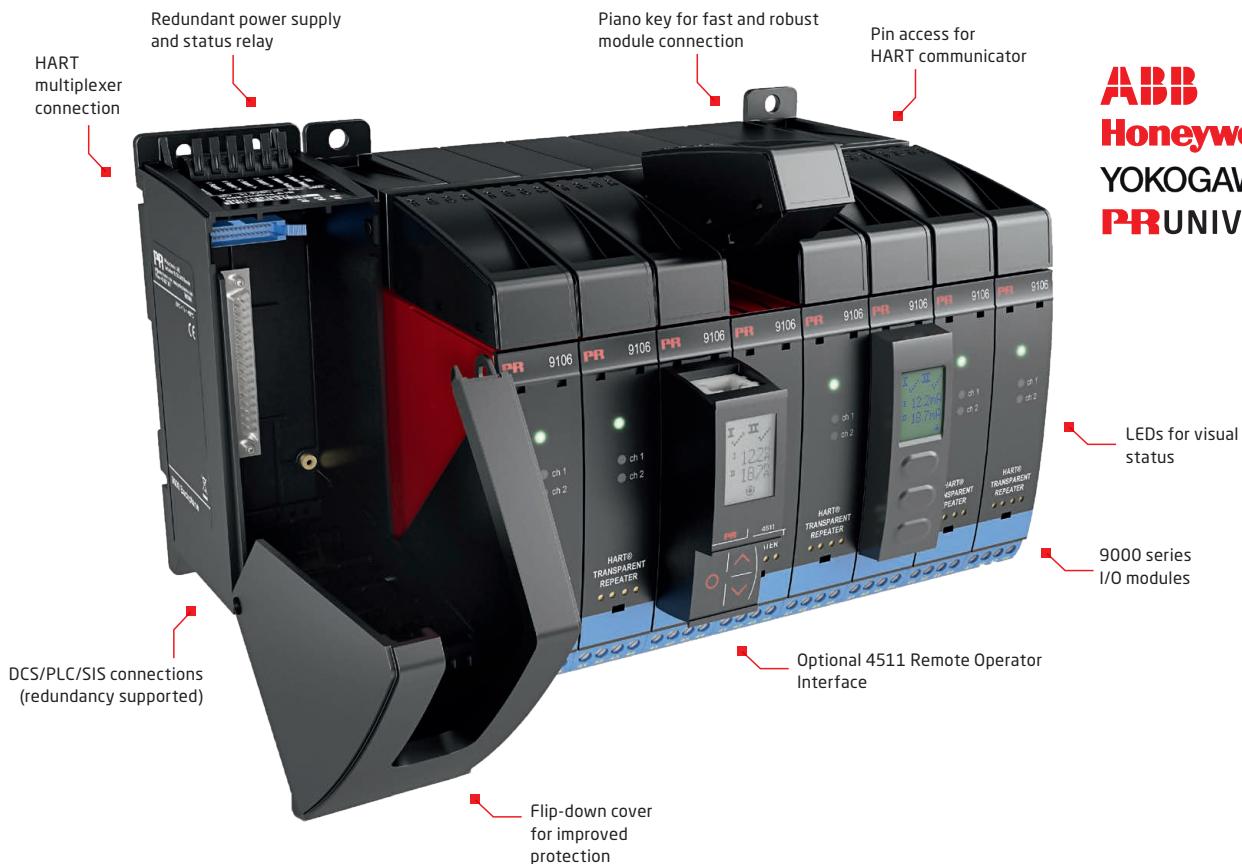
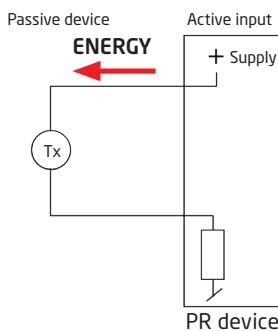
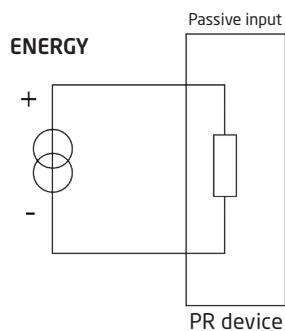


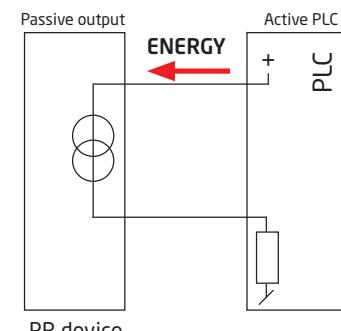
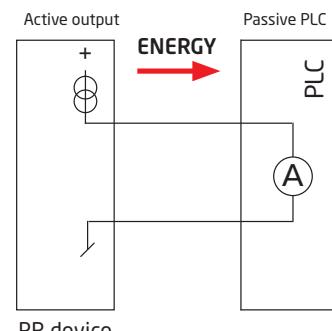
ABB
Honeywell
YOKOGAWA 
PRUNIVERSAL

SIGNAL TYPES

INPUT



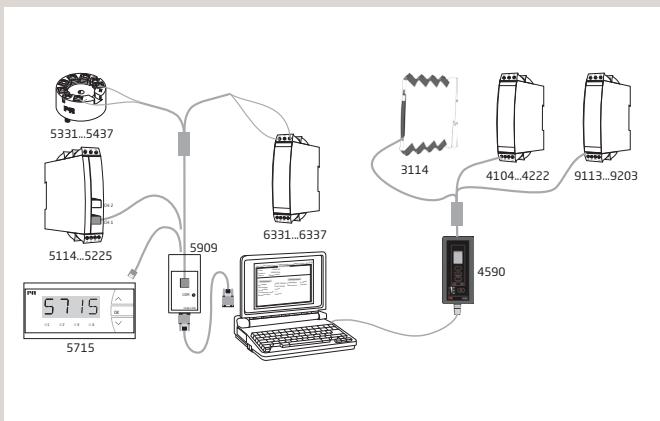
OUTPUT



PROGRAMMING UNITS



SOFTWARE



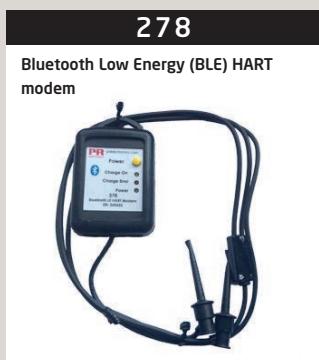
PReset

PReset is an easy-to-use menu-driven software program for set-up of PR products via a standard PC and a programming interface. PReset gives a high degree of flexibility for each product and when the menus are completed, the data is transmitted to the unit which is then ready for operation.

Loop Link 5909

Loop Link 5909 is a USB communications interface for configuration and monitoring of PR electronics' PC-programmable devices. PR devices available in the configuration program PReset ver. 5.0 or higher, can be programmed by way of Loop Link 5909.

ACCESSORIES



ACCESSORIES

7020

Knob for 1-turn potentiometer

**7020A**

Knob for 10-turn potentiometer

**7023**

11-pole relay socket

**7024**

Code ring and code pin

**7028**

10-turn potentiometer, 2 kΩ

**7029**

Shunt resistor 0.2 Ω

**7031**

Label sheet with engineering units

**7400**

Pt100 temperature sensor

**7411C**

Pt100 temperature sensor

**7423**

Ceramic socket for Pt100 sensor

**7430B**

Pt100 cable sensor, Ø6 x 60 mm

**7430C**

Pt100 cable sensor, Ø5 x 20 mm

**7440**

Thermowell for 7400 Pt100 sensor

**8335**

Splash-proof cover

**8341**

Inductive proximity sensor, NAMUR

**8342**

Inductive proximity sensor, NAMUR

**8343**

Inductive proximity sensor, NPN

**8344**

Inductive proximity sensor, NPN

**8421**

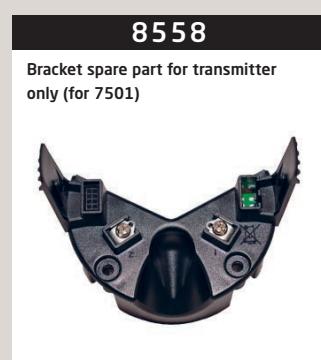
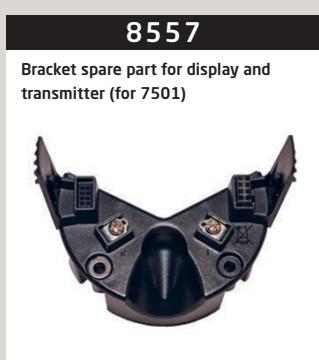
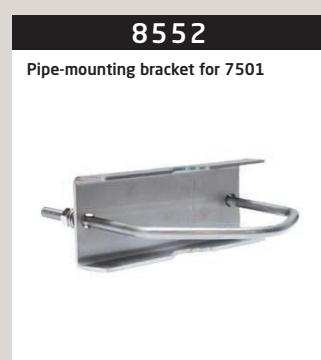
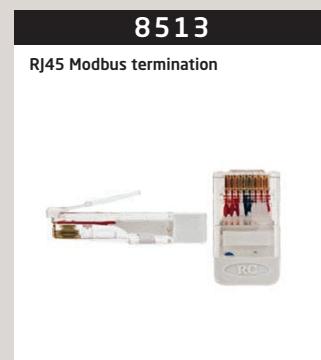
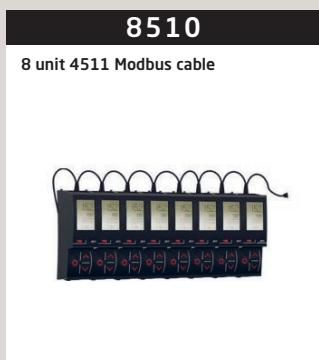
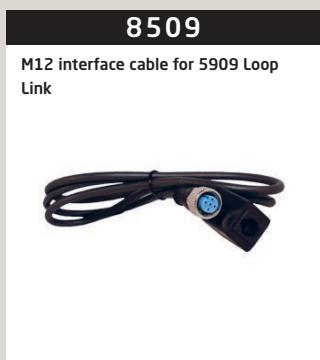
DIN rail fitting

**8501**

Field enclosure



ACCESSORIES



9400_2

Power rail 7.5 mm profile



9402

Extra end covers for power rail



9404

Module stop for rail



POWER RAIL

The data sheet specifies the maximum required power at nominal operating values, e.g. 24 V supply voltage, 60°C ambient temperature, 600 Ω load, and 20 mA output current.

In typical applications, the devices are not running at worst-case conditions, specifically when many devices are located together. For engineering purposes, 70% (P70%) of maximum required power is often used.

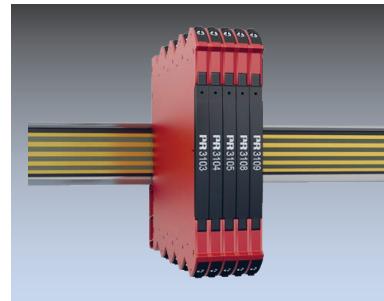
3000 power rail

The number* of 3000 devices that can be powered from different power sources is listed in the table below:

	Using a PR converter device as power feed-in	3405 power feed-in	9410 power feed-in
P70%	Up to 21 devices	Up to 131 devices	Up to 210 devices
P100%	Up to 14 devices	Up to 92 devices	Up to 147 devices

The devices can be stacked vertically or horizontally.

* The number of devices is based on the PR 3103 which has the lowest power consumption of the 3000 series power rail devices.

**9000 power rail**

The number of 9000 devices that can be powered from the 9400 power sources is listed in the table below:

	9410 power feed-in
P70%	Up to 150 devices
P100%	Up to 120 devices

**ENVIRONMENTAL SPECIFICATIONS**

	PR 2200 series	PR 3000 series	PR 4000 series	PR 5000 series	PR 5300 series
Specifications range	-20°C to +60°C	-25°C to +70°C (3105: 0°C to +70°C)	-20°C to +60°C	-20°C to +60°C	-40°C to +85°C
Relative humidity	< 95% RH (non-cond.)	< 95% RH (non-cond.)	< 95% RH (non-cond.)	< 95% RH (non-cond.)	< 95% RH (non-cond.)
Protection degree	IP50	IP20	IP20	IP20	IP68 / IP00
	PR 5400 series	PR 5500 / 5700 series	PR 6300 series	PR 7500 series	PR 9000 series
Specifications range	-40°C / 50°C to +85°C	-20°C to +60°C	-40°C to +85°C	-20°C / -40°C to +85°C	-20°C to +60°C
Relative humidity	< 99% RH (non-cond.)	< 95% RH (non-cond.)	< 95% RH (non-cond.)	0...100% RH (cond.)	< 95% RH (non-cond.)
Protection degree	IP68 / IP00	IP65 from front (5500) IP65 / Type 4X, UL50E	IP20	IP54 / IP66 / IP68 / type 4X	IP20

ENCLOSURE SPECIFICATIONS

Dimensions (mm)	Height	Width	Depth	Panel cut-out	Material
PR 2200 series	80.5	35.5	84.5+socket		Cycloloy/Noryl
PR 3000 series	113	6.1	115		Cycloloy
PR 4000 / 6000 / 9000 series	109	23.5	104		Cycloloy
PR 4500 series	73.2	23.3	26.5		Cycloloy
PR 5000 series	109	23.5	130		Cycloloy
PR 5300 series	20.2	Ø44			Cycloloy
PR 5400 series	21.45	Ø44			Cycloloy
PR 5500 / 5700 series	48	96	120	44.5 x 91.5	Noryl
PR 7500 series	109	145	125.5		Aluminum

Benefit today from ***PERFORMANCE MADE SMARTER***

PR electronics is the leading technology company specialized in making industrial process control safer, more reliable and more efficient. Since 1974, we have been dedicated to perfecting our core competence of innovating high precision technology with low power consumption. This dedication continues to set new standards for products communicating, monitoring and connecting our customers' process measurement points to their process control systems.

Our innovative, patented technologies are derived from our expansive R&D facilities and from having a great understanding of our customers' needs and processes. We are guided by principles of simplicity, focus, courage and excellence, enabling some of the world's greatest companies to achieve PERFORMANCE MADE SMARTER.

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