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

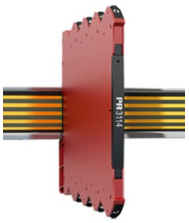
a wide range of benefits to our customers through innovative solutions and close collaboration:

- 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

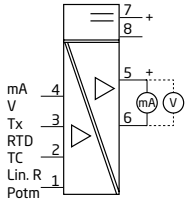
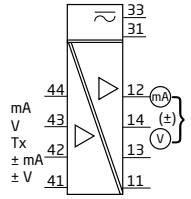
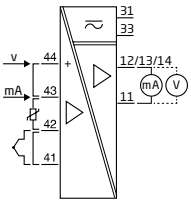
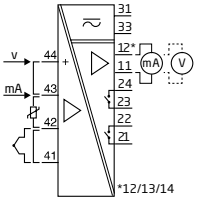
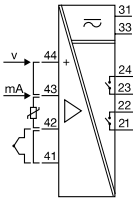
Since 1974, we have been dedicated to perfecting our core competence of innovating high precision technology with low power consumption. With a dedicated R&D center that is integrated with our lean production facility at our headquarters in Denmark, we are today one of the leading companies within signal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

CONTENTS

MULTIFUNCTIONAL TRANSMITTERS

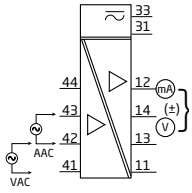
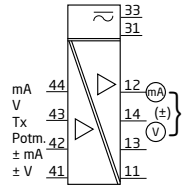




TYPE	3114	4104	4114	4116	4131
	Isolated universal converter	Universal uni-/bipolar signal transmitter	Universal transmitter	Universal transmitter	Universal trip amplifier
INPUT: RTD, TC, linear resistance, mV, mA, V, potentiometer **OUTPUT:** mA, V, relays					
INPUT:					
mA, measurement range / min. 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 / -
Lin. R, measurement range / min. span	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	- / 16 VDC	- / 16 VDC	- / 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	
Load (@ current output)	≤ 600 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	
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...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V
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	✓				

exida = FMEDA report

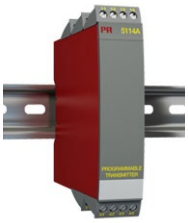
Of span = Of the presently selected range

TYPE	4179	4184			
	Universal AC/DC transmitter	Universal uni-/bipolar signal transmitter			
INPUT: mV, mA, A, V, potentiometer **OUTPUT:** mA, V					
INPUT:					
mA, measurement range / min. span		±100 mA / 0.5 mA			
A, measurement range / min. span	0...5 AAC / 0.5 AAC				
V, measurement range / min. span	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			
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C			
Supply voltage, universal AC / DC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V			
Max. required power	1.8 W	2.5 W			
Isolation voltage, test / operation	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC			
Response time	< 0.75 s	< 20 ms			
Signal dynamics, input / output	20 bit / 18 bit	24 bit / 18 bit			
Accuracy	< ±0.3% of span	< ±0.05% of span			
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C			
NAMUR	NE21, NE43	NE21, NE43			
Channels	1	1			
Programming	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					

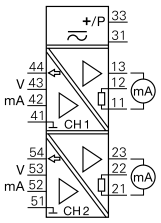
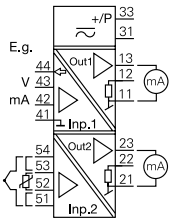
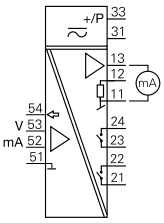
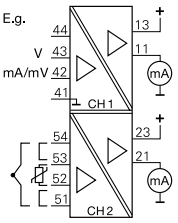
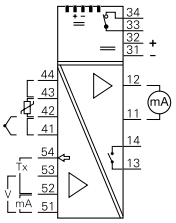
exida = FMEDA report

Of span = Of the presently selected range

MULTIFUNCTIONAL TRANSMITTERS



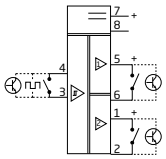
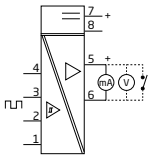
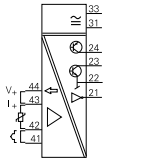
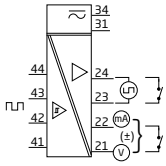


TYPE	5114A	5115A	5116A	5131A	9116A
	Programmable transmitter	Signal calculator	Programmable transmitter w. limit switch	2-wire programmable transmitter	Universal converter
INPUT: RTD, TC, linear resistance, mV, mA, V, potentiometer **OUTPUT:** mA, V, relays					
INPUT:					
mA, measurement range / min. span	0...100 mA / 4 mA	0...100 mA / 4 mA	0...100 mA / 4 mA	0...100 mA / 4 mA	0...23 mA / 16 mA
V, measurement range / min. span	0...250 VDC / 5 mV	0...250 VDC / 5 mV	0...250 VDC / 5 mV	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...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...10000 Ω / -
Potentiometer	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	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
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...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	- / 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	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	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	22 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit	24 bit / 16 bit
Accuracy	< ±0.05% of span	< ±0.05% of span	< ±0.05% of span	≤ ±0.05% 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, 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					✓
FM, Zone 2					✓
UL 61010 / 508 / 913			- / ✓ / -		✓ / - / ✓
DNV	✓	✓	✓		✓
EAC	✓	✓	✓	✓	✓
SIL 2 Full Assessment IEC 61508					✓
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					✓

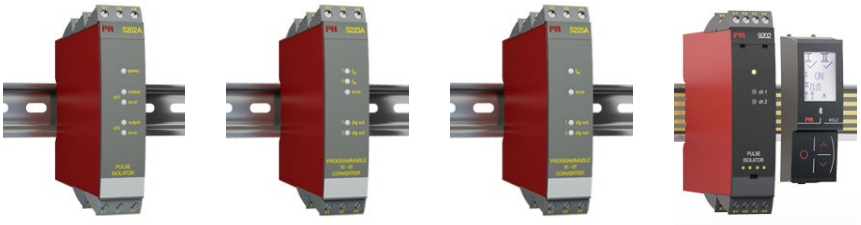
= Full assessment acc. to IEC 61508

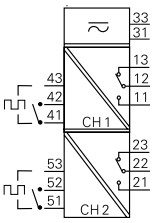
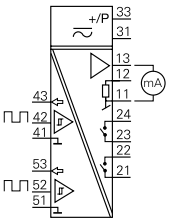
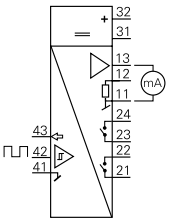
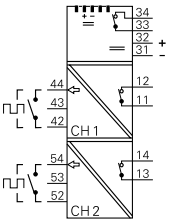
Of span = Of the presently selected range




TYPE	3202	3225	4222	4225
	Pulse isolator / switch amplifier	Universal frequency converter	Universal I/f converter	Universal f/I-f/f converter
INPUT: Frequency, pulse, V, mA, Pt100, TC, mV **OUTPUT:** mA, V, pulse, relays				
INPUT:				
Sensor type	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	NPN / PNP (4225C)
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	> 16 VDC	5...17 VDC
TECHNICAL SPECIFICATIONS:				
Ambient temperature	-25...+70°C	-25...+70°C	-20...+60°C	-20...+60
Supply voltage, AC / DC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V
Max. required power, 1 / 2 channels	1.2 W / -	1.2 W	2.5 W / -	2.6 W
Isolation voltage, test / operation	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC
Response time	< 20 ms	< 30 ms	< 1 s	< 30 ms
Signal dynamics, input / output		- / 18 bit	24 bit / -	- / 18 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	NE21, NE43
Channels	1	1	1	1
Programming	DIP-switch	DIP-switch, PR 4590	4500 series devices	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	✓	✓		

exida FMEDA report * = Pending **Of span** = Of the presently selected range



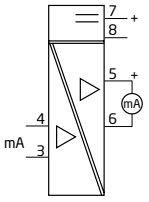
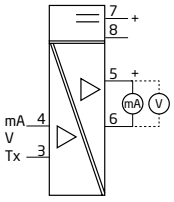
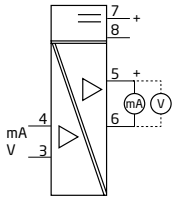
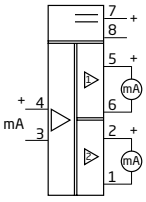
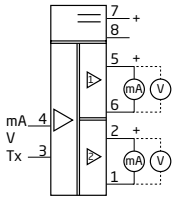
TYPE	5202A	5223A	5225A	9202A	
	Pulse isolator	Programmable f/I - f/f converter	Programmable f/I - f/f converter	Pulse isolator	
INPUT: Frequency, pulse **OUTPUT:** mA, V, pulse, relays					
INPUT:					
Sensor type	NAMUR / switch	All standard sensors ⎍	All standard sensors ⎍	NAMUR / switch	
Hz, measurement 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...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	- / 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				✓	
IECEx, Zone 2				✓	
FM, Zone 2 - DIV 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				✓	

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

Of span = Of the presently selected range



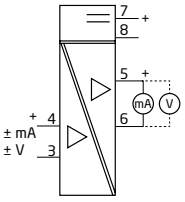
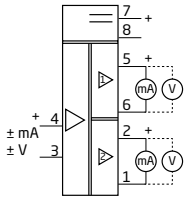
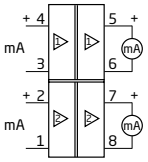
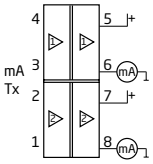


TYPE	3103	3104	3105	3108	3109
	Isolated repeater	Isolated converter	Isolated converter	Isolated repeater / splitter	Isolated converter / splitter
INPUT: mA, V, potentiometer OUTPUT: mA, V					
INPUT:					
mA, measurement range / min. span	0...23 mA / 1:1	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 1:1	0...23 mA / 16 mA
V, measurement range / min. span		0...10.25 VDC / 4 VDC	0...10.25 VDC / 4 VDC		0...10.25 VDC / 4 VDC
Reference voltage / 2-wire supply		- / > 17 V			- / > 17 V
OUTPUT:					
mA, signal range / min. span	0...23 mA / 1:1	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 1:1	0...23 mA / 16 mA
Load (@ current output)	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω	≤ 300 Ω per channel	≤ 300 Ω per channel
V, signal range / min. span		0...10 VDC / 4 VDC	0...10 VDC / 4 VDC		0...10 VDC / 4 VDC
Load (@ voltage output)		≥ 10 kΩ	≥ 10 kΩ		≥ 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

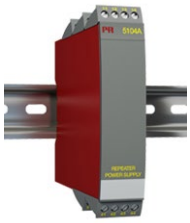
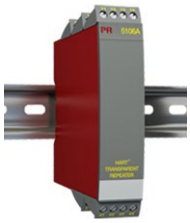
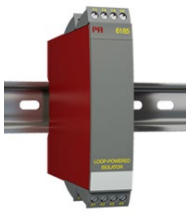
Of span = Of the presently selected range

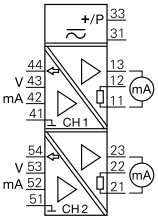
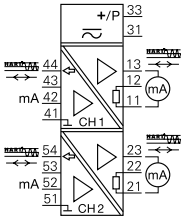
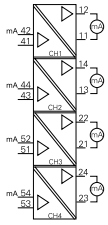



TYPE	3117	3118	3185	3186	
	Bipolar isolated converter	Bipolar isolated converter / splitter	Loop-powered isolator	2-wire transmitter isolator	
INPUT: mA, V, potentiometer **OUTPUT:** mA, V					
INPUT:					
mA, measurement range / min. span	-23...+23 mA	-23...+23 mA	0...23 mA / 1:1	3.5...23 mA / 1:1	
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	✓	✓			

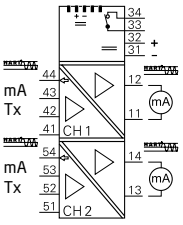
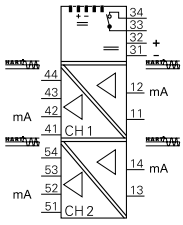
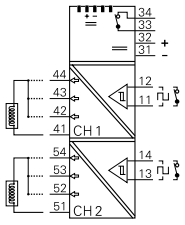
* = @ 24 VDC

Of span = Of the presently selected range

TYPE	5104A	5106A	6185		
	Repeater / power supply	HART transparent repeater	Loop-powered isolator		
INPUT: mA, mV, V, HART transparent **OUTPUT:** mA, V, HART transparent					
INPUT:					
mA, measurement range / min. span	0...23 mA / 16 mA	3.5...23 mA / 1:1	0...23 mA / 1:1		
V, measurement range / min. span	0...10 VDC / 8 VDC				
Max. offset	20% of selec. max. value				
Reference voltage / 2-wire supply	- / > 17.1 VDC	- / > 17 VDC			
OUTPUT:					
mA, signal range / min. span	0...23 mA / 16 mA	3.5...23 mA / 1:1	0...23 mA / 1:1		
Load (@ current output)	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω		
V, signal range / min. span	0...10 VDC / 0.8 VDC				
Load (@ voltage output)	≥ 500 kΩ				
Max. offset	20% of selec. max. value				
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C		
Supply voltage, AC / DC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	- / ≤ 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					

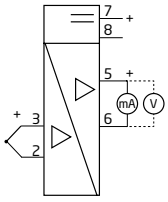
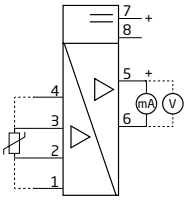
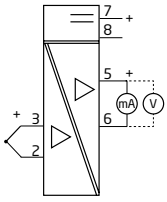
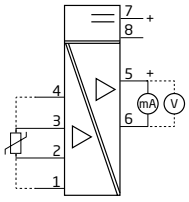
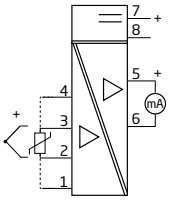
Of span = Of the presently selected range

TYPE	9106A	9107A	9203A		
	HART transparent repeater	HART transparent driver	Solenoid / alarm driver		
INPUT: mA, HART communication **OUTPUT:** mA, HART communication					
INPUT:					
mA, measurement range / min. span	3.5...23 mA / 16 mA	3.5 ...23 mA / 16 mA			
V, measurement range / min. span					
Max. offset					
Reference voltage / 2-wire supply	- / > 16 VDC				
Sensor type			NPN / PNP / switch		
OUTPUT:					
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA			
Pulse output			Valves etc.		
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	✓	✓	✓		
FM, Zone 2 - DIV 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





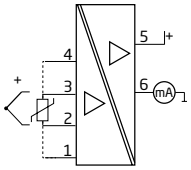
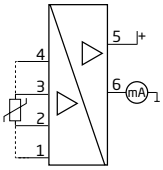
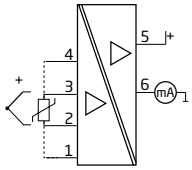
TYPE	3101	3102	3111	3112	3113
	TC converter	Pt100 converter	TC converter - isolated	Pt100 converter - isolated	HART 7 temperature converter
INPUT: RTD, linear resistance, TC, mV, mA, potentiometer **OUTPUT:** mA, HART communication					
INPUT:					
RTD, measurement range / min. span		-200...+850°C / 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		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	
Load (@ voltage output)	≥ 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

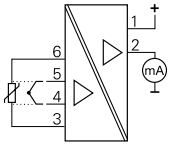
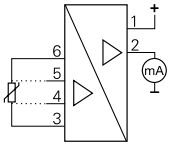
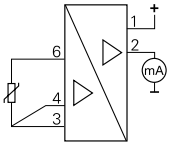
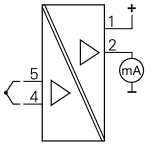
TEMPERATURE TRANSMITTERS



TYPE	3331	3333	3337		
	Temperature converter, loop-powered - isolated	Pt100 converter, loop-powered	HART 7 temperature converter, loop-powered		
INPUT: 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			✓		

Of span = Of the presently selected range

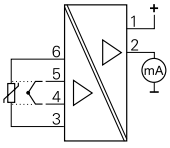
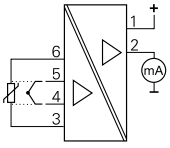
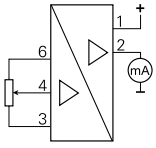
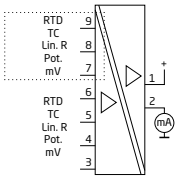



TYPE	5331A	5332A	5333A	5334A	
INPUT: RTD, linear resistance, TC, mV, potentiometer **OUTPUT:** mA	2-wire programmable transmitter	2-wire programmable RTD transmitter	2-wire programmable transmitter	2-wire programmable transmitter	
					
INPUT:					
mV, measurement range / min. span	-12...800 mV / 5 mV			-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	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	
Cold junction compensation	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...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	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±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	✓		✓	✓	
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	✓	✓	✓	✓	

exida = FMEDA report

Of span = Of the presently selected range

TEMPERATURE TRANSMITTERS

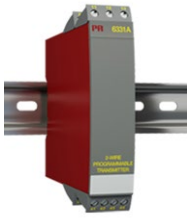
TYPE	5335A	5337A	5343A	5437A	
	2-wire transmitter with HART 5 protocol	2-wire transmitter with HART 7 protocol	2-wire level transmitter	2-wire HART 7 temperature transmitter	
INPUT: RTD, linear resistance, TC, mV, potentiometer **OUTPUT:** mA, HART communication					
INPUT:					
mV, measurement range	-800...+800 mV	-800...+800 mV		± 800 mV, -0.1...+1.7 V	
mV, min. span	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	
Lin. R, measurement range / min. span	0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω		0...100 kΩ / 25 Ω	
Potentiometer			0...100 kΩ / 1 kΩ	10 Ω...100 kΩ / 10%	
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4		2 - 3 - 4	
TC types	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5		BEJKLNRSTUW3W5Lr	
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	
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	-50...+85°C	
Supply voltage, DC	8...35 VDC	8...35 VDC	8...35 VDC	7.5...48 VDC	
Max. required power	0.8 W	0.8 W	0.8 W	< 850 mW	
Isolation voltage, test / operation	1500 VAC / 50 V	1500 VAC / 50 V		2.5 kVAC / 55 VAC	
Response time	1...60 s	1...60 s	0.33...60 s	70 ms	
Signal dynamics, input / output	22 bit / 16 bit	22 bit / 16 bit	19 bit / 16 bit	24 bit / 18 bit	
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span	
Temperature coefficient	< ±0.005% of span / °C	< ±0.005% of span / °C	≤ ±0.01% of span / °C	< ±0.005% of span / °C	
NAMUR	NE21, NE43, NE89	NE21, NE43, NE89	NE43	NE 21/43/44/89/95/107/130	
Channels	1	1	1	1 or 2*	
Programming	5909 / HART 5	5909 / HART 7 / HART 5	5909	5909 / HART 7 / HART 5	
APPROVALS:					
ATEX, Zone 2	✓	✓	✓	✓	
IECEx, Zone 2	✓	✓	✓	✓	
CSA, Zone 2 - DIV 2	✓	✓		✓	
FM, Zone 2 - DIV 2				✓	
INMETRO	✓	✓	✓	✓	
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	✓	✓		✓	
Mounting in Zone 2 / DIV 2	✓ / -	✓ / -	✓ / -	✓ / ✓	
Process signal calibration	✓	✓	✓	✓	

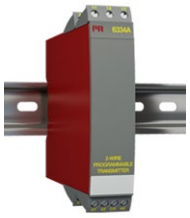
= Full Assessment acc. to IEC 61508

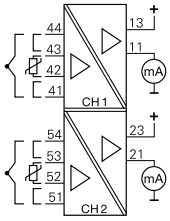
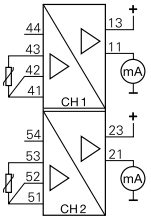
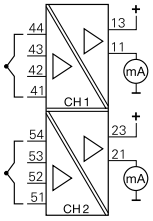
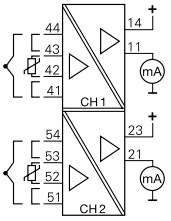
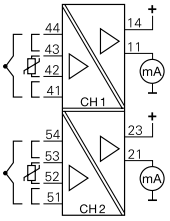
* = Single or true dual inputs

Of span = Of the presently selected range

TEMPERATURE TRANSMITTERS



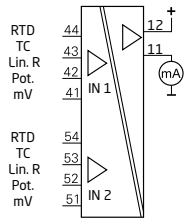
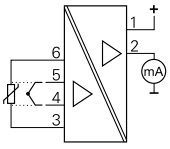
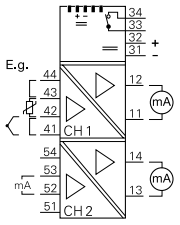


TYPE	6331A	6333A	6334A	6335A	6337A
INPUT: RTD, linear resistance, TC, mV, potentiometer **OUTPUT:** mA, HART communication	2-wire programmable transmitter	2-wire programmable transmitter	2-wire programmable transmitter	2-wire HART 5 transmitter	2-wire HART 7 transmitter
					
INPUT:					
mV, measurement range / min. span	-12...800 mV / 5 mV		-12...+150 mV / 5 mV	-800...+800 mV / 2.5 mV	-800...+800 mV / 2.5 mV
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C		-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...10 kΩ / 30 Ω		0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω
Potentiometer					
Sensor connection, wires	2 - 3 - 4	2 - 3		2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr		BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5
Max. offset	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value
Cold junction compensation	Internal / external		Internal	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	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 / HART 5	5909 / HART 7 / HART 5
APPROVALS:					
ATEX, Zone 2	✓	✓	✓	✓	✓
IECEx, Zone 2	✓	✓	✓	✓	✓
CSA, Zone 2 - DIV 2	✓	✓		✓	✓
FM, Zone 2 - DIV 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	✓	✓	✓	✓	✓

exida = FMEDA report

Of span = Of the presently selected range

TEMPERATURE TRANSMITTERS

TYPE	6437A	7501	9113A		
INPUT: RTD, linear resistance, TC, mV, mA, potentiometer **OUTPUT:** mA, HART communication	2-wire HART 7 temperature transmitter 	Field mounted HART temperature transmitter 	Temperature / mA converter 		
INPUT:					
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	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5Lr		
Cold junction compensation	Internal / external	Internal / external	Internal / external		
OUTPUT:					
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	0...23 mA / 16 mA		
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	70 ms	22 bit / 16 bit	0.4 / 1...60 s		
Signal dynamics, input / output	24 bit / 18 bit	1...60 s	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	✓ / ✓	✓ / ✓	✓ / ✓		
CSA, Zone 2 - DIV 2	✓				
FM, Zone 2 - DIV 2	✓				
INMETRO / NEPSI	✓ / ✓				
UL 61010 / 913			✓ / ✓		
DNV / EU-RO marine	- / ✓	- / ✓	✓ / -		
EAC	✓	✓	✓		
SIL Hardware Assessment		✓			
SIL 2/3 Full Assessment IEC 61508	✓ / ✓		✓ / -		
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

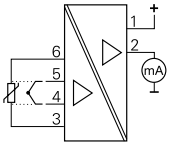
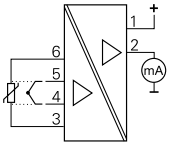
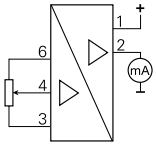
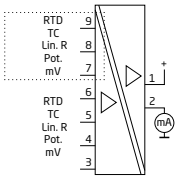
Of span = Of the presently selected range

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

exida = FMEDA report

Of span = Of the presently selected range

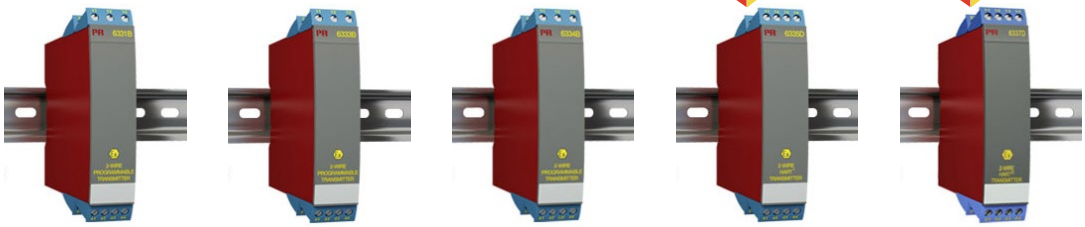
I.S. TEMPERATURE TRANSMITTERS

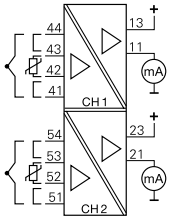
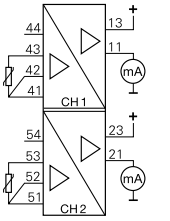
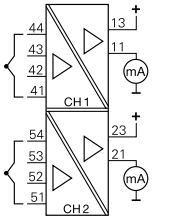
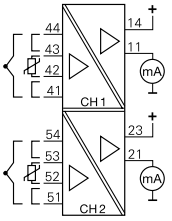
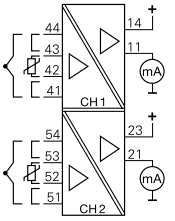
TYPE	5335D	5337D	5343B	5437D
	2-wire transmitter with HART 5 protocol	2-wire transmitter with HART 7 protocol	2-wire level transmitter	2-wire HART 7 temperature transmitter
INPUT: RTD, linear resistance, TC, mV, potentiometer OUTPUT: mA, HART communication				
INPUT:				
mV, measurement range	-800...+800 mV	-800...+800 mV		-± 800 mV, -0.1...+1.7 V
mV, min. span	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
Lin. R, measurement range / min. span	0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω	0...100 kΩ / 1 kΩ	0...100 kΩ / 25 Ω
Potentiometer			1 kΩ...100 kΩ	10 Ω...100 kΩ / 10%
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4		2 - 3 - 4
TC types	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5		BEJKLNRSTUW3W5Lr
Max. offset			50% of selec. max. value	
Cold junction compensation	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
TECHNICAL SPECIFICATIONS:				
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-50...+85°C
Supply voltage, DC	8...30 VDC	8...30 VDC	8...30 VDC	7.5...30 VDC
Max. required power	0.7 W	0.7 W	0.7 W	< 850 mW
Isolation voltage, test / operation	1500 VAC / 50 V	1500 VAC / 50 V		2.5 kVAC / 42 VAC
Response time	1...60 s	1...60 s	0.33...60 s	70 ms
Signal dynamics, input / output	22 bit / 16 bit	22 bit / 16 bit	19 bit / 16 bit	24 bit / 18 bit
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.005% of span / °C	< ±0.005% of span / °C	≤ ±0.01% of span / °C	< ±0.005% of span / °C
NAMUR	NE21, NE43, NE89	NE21, NE43, NE89	NE43	NE21/43/44/89/95/107/130
Channels	1	1	1	1 or 2*
Programming	5909 / HART 5	5909 / HART 7 / HART 5	5909	5909 / HART 7 / HART 5
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	✓	✓	✓	✓
Process signal calibration	✓	✓		✓

= Full Assessment acc. to IEC 61508

* = Single or true dual inputs

Of span = Of the presently selected range

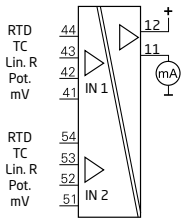
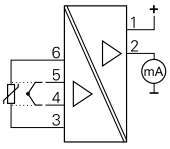


TYPE	6331B	6333B	6334B	6335D	6337D
	2-wire programmable transmitter	2-wire programmable transmitter	2-wire programmable transmitter	2-wire HART 5 transmitter	2-wire HART 7 transmitter
INPUT: RTD, linear resistance, TC, mV, potentiometer **OUTPUT:** mA, HART communication					
INPUT:					
mV, measurement range / min. span	-12...800 mV / 5 mV		-12...+150 mV / 5 mV	-800...+800 mV / 2.5 mV	-800...+800 mV / 2.5 mV
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C		-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...10 kΩ / 30 Ω		0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω
Potentiometer					
Sensor connection, wires	2 - 3 - 4	2 - 3		2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr		BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5
Max. offset	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value
Cold junction compensation	Internal / external		Internal	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	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...30 VDC	8...30 VDC	7.2...30 VDC	8...30 VDC	8...30 VDC
Max. required power, 1 / 2 channels	0.7 W / 1.4 W	0.7 W / 1.4 W	0.7 W / 1.4 W	0.7 W / 1.4 W	0.7 W / 1.4 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 / HART 5	5909 / HART 7 / HART 5
APPROVALS:					
ATEX	✓	✓	✓	✓	✓
IECEx	✓	✓	✓	✓	✓
FM	✓	✓		✓	✓
CSA	✓	✓		✓	✓
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	✓	✓	✓	✓	✓

exida = FMEDA report

Of span = Of the presently selected range

I.S. TEMPERATURE TRANSMITTERS

TYPE	6437D	7501			
	2-wire HART 7 temperature transmitter	Field mounted HART temperature transmitter			
INPUT: RTD, linear resistance, TC, mV, potentiometer **OUTPUT:** 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	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5			
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			
Signal dynamics, input / output	70 ms	22 bit / 16 bit			
Response time	24 bit / 18 bit	1...60 s			
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	✓	✓			

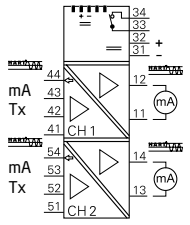
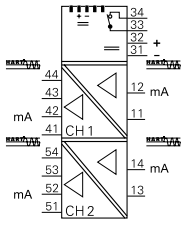
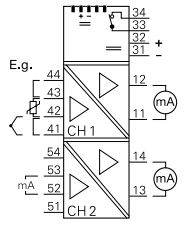
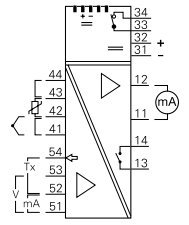
= Full assessment acc. to IEC 61508

= FMEDA report

* = Single or true dual inputs

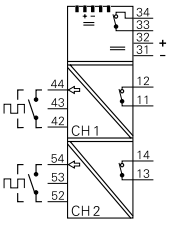
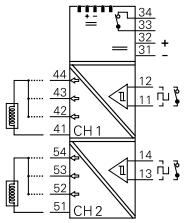
LOI = Local operator interface

Of span = Of the presently selected range

TYPE	9106B	9107B	9113B	9116B
	HART transparent repeater	HART transparent driver	Temperature / mA converter	Universal converter
INPUT: mA, mV, V, potentiometer, RTD, Lin. R, TC, HART communication OUTPUT: mA, relays, HART communication				
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				0...12 VDC / 0.8 V
RTD, measurement range / min. span			-200...+850°C / 25°C	-200...+850°C / 25°C
Lin. R, measurement range / min. span				0...10000 Ω / -
Potentiometer				10 Ω...10000 Ω
Sensor connection, wires			2 - 3 - 4	2 - 3 - 4
TC types			BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr
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	19.2...31.2 VDC
Max. required power, 1 / 2 channels	≤ 1.1 W / ≤ 1.9 W	≤ 1.0 W / ≤ 1.8 W	≤ 0.8 W / ≤ 1.4 W	≤ 2.1 W / -
Isolation voltage, test / operation	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC
Response time	< 5 ms	< 5 ms	0.4 / 1...60 s	0.4 / 1...60 s
Signal dynamics, input / output	Analog signal chain	Analog signal chain	24 bit / 16 bit	24 bit / 16 bit
Accuracy	< ±16 µA	< ±16 µA	≤ ±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
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	✓	✓	✓	✓
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	✓	✓	✓	✓

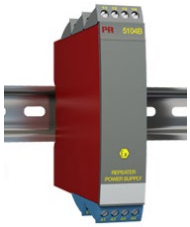
= Full assessment acc. to IEC 61508

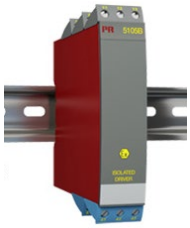
Of span = Of the presently selected range

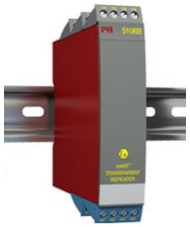
TYPE	9202B	9203B			
	Pulse isolator	Solenoid / alarm driver			
INPUT: Hz **OUTPUT:** Pulse, relay					
INPUT:					
mA, measurement range / min. span					
V, measurement range / min. span					
RTD, measurement range / min. span					
Lin. R, measurement range / min. span					
Potentiometer					
Sensor connection, wires					
TC types					
Sensor type	NAMUR / switch	NPN / PNP / switch			
Hz, measurement range / min. span	0...5 kHz				
Min. pulse width	100 µs				
OUTPUT:					
mA, signal range / min. span					
Pulse output	NPN / relay	Valves etc.			
Hz, signal range	0...5 kHz				
Relay	1 x SPST, AC: 500 VA				
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C			
Supply voltage, DC	19.2...31.2 VDC	19.2...31.2 VDC			
Max. required power, 1 / 2 channels	≤ 1.1...1.3 W / ≤ 1.5...1.9 W	≤ 1.9...2.5 W / ≤ 3.1 W			
Isolation voltage, test / operation	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC			
Response time	200 ms	< 10 ms			
Signal dynamics, input / output					
Accuracy					
Temperature coefficient					
NAMUR	NE21	NE21			
Channels	1 or 2	1 or 2			
Programming	4500 series devices	4500 series devices			
APPROVALS:					
ATEX	✓	✓			
IECEx	✓	✓			
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	✓	✓			

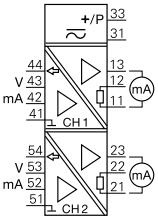
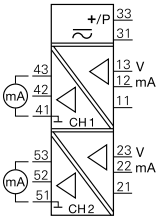
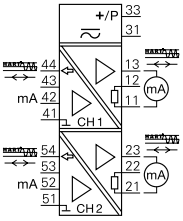
SIL 2/3 = Full assessment acc. to IEC 61508

Of span = Of the presently selected range

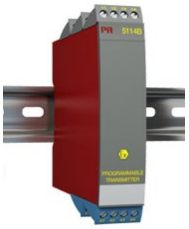


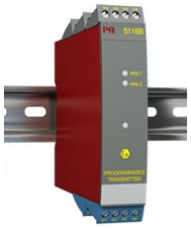


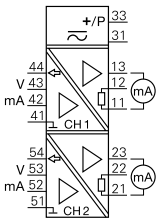
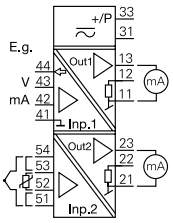
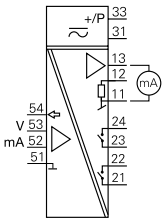
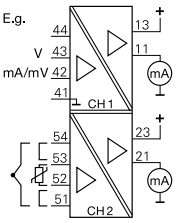


TYPE	5104B	5105B	5106B		
	Ex repeater / power supply	Ex-isolated driver	HART transparent repeater		
INPUT: mA, mV, V, potentiometer, RTD, linear resistance, TC, HART transparent OUTPUT: mA, V, relays, HART transparent					
INPUT:					
mA, measurement range / min. span	0...23 mA / 16 mA	0...23 mA / 16 mA	3.5...23 mA / 16 mA		
V, measurement range / min. span	0...10 VDC / 8 VDC	0...10 VDC / 8 VDC			
mV, measurement range / min. span					
RTD, measurement range / min. span					
Lin. R, measurement range / min. span					
Potentiometer					
Sensor connection, wires					
TC types					
Max. offset	20% of selec. max. value	20% of selec. max. value	20% of selec. max. value		
OUTPUT:					
mA, signal range / min. span	0...23 mA / 16 mA	0...23 mA / 16 mA	3.5...23 mA / 16 mA		
Load (@ current output)	≤ 600 Ω	≤ 770 Ω	≤ 600 Ω		
V, signal range / min. span	0...10 VDC / 0.8 VDC	0...10 VDC / 0.8 VDC			
Max. offset	20% of selec. max. value	20% of selec. max. value	20% of selec. max. value		
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C		
Supply voltage, AC / DC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V		
Max. required power, 1 / 2 channels	2.0 W / 2.8 W	1.3 W / 2.0 W	2.0 W / 2.8 W		
Isolation voltage, test / operation	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC		
Response time	< 25 ms	< 25 ms	< 25 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	NE21		
Channels	1 or 2	1 or 2	1 or 2		
Programming	DIP-switch	DIP-switch	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					

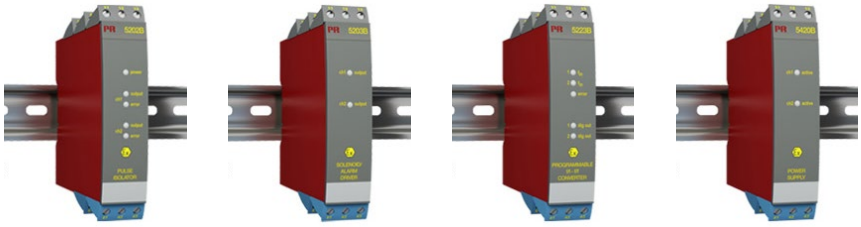
Of span = Of the presently selected range

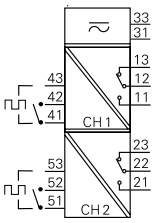
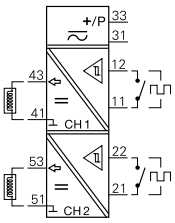
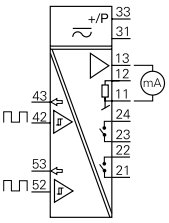
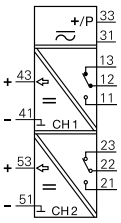





TYPE	5114B	5115B	5116B	5131B
	Programmable transmitter	Signal calculator	Programmable transmitter	2-wire programmable transmitter
INPUT: mA, mV, V, potentiometer, RTD, linear resistance, TC **OUTPUT:** mA, V, relays,				
INPUT:				
mA, measurement range / min. span	0...100 mA / 4 mA	0...100 mA / 4 mA	0...100 mA / 4 mA	0...100 mA / 4 mA
V, measurement range / min. span	0...250 VDC / 5 mV	0...250 VDC / 5 mV	0...250 VDC / 5 mV	0...250 VDC / 5 mV
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
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	
Potentiometer	200 Ω...100 kΩ	200 Ω...100 kΩ	200 Ω...100 kΩ	
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr
Max. offset	50% of selec. max. value	50% of selec. max. val.	50% of selec. max. val.	
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
Load (@ current output)	600 Ω	600 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	
Max. offset	50% of selec. max. value	50% of selec. max. val.	50% of selec. max. val.	
Relays			2 x SPST, AC: 500 VA	
TECHNICAL SPECIFICATIONS:				
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, AC / DC	21.6...253 V / 19.2...300 V	21.6...253 V/19.2...300 V	21.6...253 V / 19.2...300 V	- / 7.5...35 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 / 1.6 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	250 ms...60 s	250 ms...60 s	250 ms...60 s	250 ms...60 s
Signal dynamics, input / output	22 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit
Accuracy	≤ ±0.05% 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
NAMUR	NE21, NE43	NE21, NE43	NE21, NE43	NE21, NE43
Channels	1 or 2	2	1	1 or 2
Programming	5909 + DIP-switch	5909 + DIP-switch	5909	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



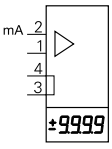
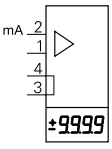
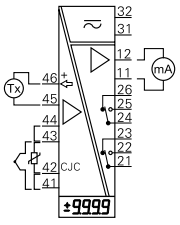
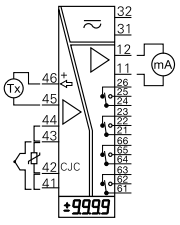
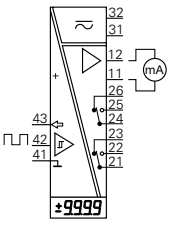
TYPE	5202B	5203B	5223B	5420B
	Pulse isolator	Ex solenoid / alarm driver	Programmable f/I - f/f converter	Ex power supply for 2-wire Tx
INPUT: Frequency, pulse **OUTPUT:** mA, V, pulse, relays				
INPUT:				
mA, measurement range / min. span				
V, measurement range / min. span				
mV, measurement range / 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 SPST, 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...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V
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				
Temperature coefficient			< ±0.01% of span / °C	
NAMUR	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			✓	

exida = FMEDA report

Of span = Of the presently selected range



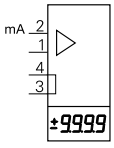
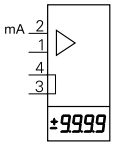


TYPE	5531A	5531B1	5714	5715	5725
	Loop-powered LCD indicator	Loop-powered LCD indicator in I.S. enclosure	Programmable LED indicator	Programmable LED indicator	Programmable frequency indicator
INPUT: RTD, TC, mV, mA, V, potentiometer, frequency, pulse **OUTPUT:** Display, mA, relays					
INPUT:					
mA, measurement range / min. span	3.6...23 mA / 16 mA	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 ⎍
Hz, measurement range / min. span					0...50 kHz / 0.001 Hz
Min. pulse width					25 µs
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 kΩ	10 Ω...100 kΩ	
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 / LCD	4-digit / LED	4-digit / LED	4-digit / LED
Display, digit height	16 mm	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	-20...+60°C
Supply voltage, universal AC / DC	- / 1.5 VDC	- / 1.5 VDC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V
Max. required power	<35 mW	<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	< 1 s	< 400 ms / < 1 s	< 400 ms / < 1 s	1...60 s
Accuracy	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.1% of reading	≤ ±0.1% of reading	≤ ±0.1% of reading
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	≤ ±0.01% of reading / °C	≤ ±0.01% of reading / °C	≤ ±0.01% of reading / °C
NAMUR			NE43	NE43	NE43
Programming	Switch / front keys	Switch / front keys	Front keys	5909 / front keys	Front keys

APPROVALS:					
ATEX, Zone 2	✓	✓			
UL 508			✓	✓	✓
DNV EU-RO marine			✓	✓	✓
EAC	✓	✓	✓	✓	✓

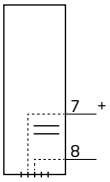
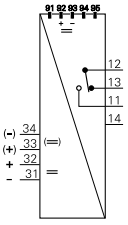
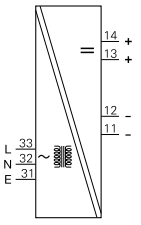
APPLICATION GUIDE:					
mA / V / mV input	✓ / - / -	✓ / - / -	✓ / ✓ / -	✓ / ✓ / -	
Temperature input			✓	✓	
Lin. R / potentiometer input			✓ / ✓	✓ / ✓	
Frequency input					✓
Custom sensor linearization				✓	
4...20 mA Tx input			✓	✓	
Loop-powered	✓	✓			
mA output			✓	✓	✓
2 / 4 relay outputs			✓ / -	-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

Of span = Of the presently selected range

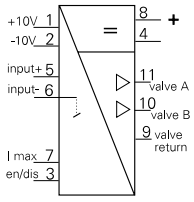
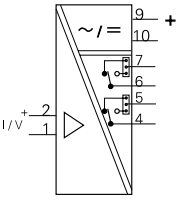
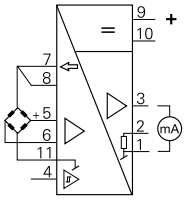
TYPE	5531B	5531B2
	Loop-powered LCD indicator	Loop-powered LCD indicator in I.S. enclosure
INPUT:		
mA		
OUTPUT:		
Display		

INPUT:		
mA, measurement range / min. span	3.6...23 mA / 16 mA	3.6...23 mA / 16 mA
OUTPUT:		
Display, digit / type	4-digit / LCD	4-digit / LCD
Display, digit height	16 mm	16 mm
TECHNICAL SPECIFICATIONS:		
Ambient temperature	-20...+60°C	-20...+60°C
Supply voltage, universal AC / DC	- / 1.5 VDC	- / 1.5 VDC
Max. required power	<35 mW	<35 mW
Isolation voltage, test / operation		
Response time	< 1 s	< 1 s
Accuracy	≤ ±0.1% of span	≤ ±0.1% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR		
Programming	Switch / front keys	Switch / front keys
APPROVALS:		
ATEX	✓	✓
DNV		
EAC Ex	✓	✓
APPLICATION GUIDE:		
Loop-powered	✓	✓
Mounting in Zone 1 / 21	✓	✓
Field enclosure		✓

Of span = Of the presently selected range

TYPE	3405	9410	9421		
	Power connector unit	Power control unit	Power supply		
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	✓	✓			
UL 61010 / 508 / 913	✓ / - / -	✓ / - / ✓	- / ✓ - / -		
DNV	✓	✓			
EAC	✓	✓	✓		
INMETRO, Zone 2		✓			
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	2231	2261		
	Valve controller	Trip amplifier	mV transmitter		
INPUT, DC: mA, V, potentiometer, frequency, pulse, joystick, load cell, mV **INPUT, AC:** A, V **OUTPUT:** mA, V, relays					
INPUT:					
mA, DC measurement range / min. span	0...20 mA / 16 mA	0...20 mA / 10 mA			
V, DC measurement range / min. span	-10...+10 VDC / 0.8 VDC	0...250 VDC / 0.5 VDC	-40...+100 mV / 10 mV		
A, AC measurement range / min. span		0...1 ARMS / 0.5 ARMS			
V, AC measurement range / min. span		0...250 VRMS/0.5 VRMS			
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		
Relays		2 x SPST, AC: 500 VA			
Display, digit / type	3-digit / LED	3-digit / LED	3-digit / LED		
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C		
Supply voltage, universal AC / DC		21.6...253V / 19.2...300V			
Supply voltage, DC	12 or 24 VDC	19.2...28.8 VDC	19.2...28.8 VDC		
Max. required power	2.2 W	1.5 W DC / 2 W, UNI	2.2 W / max. 7.2 W		
Isolation voltage, test / operation		3.75 kVAC / 250 VAC			
Response time	< 75 ms	250 ms...60 s	60 ms...999 s		
Signal dynamics, input / output	12 bit / -	16 bit / -	17 bit / 16 bit		
Setpoint adjustment / repetition		0.1% / 0.1%			
Delay / hysteresis		0...99.9 s / 0...99.9%			
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C		
Channels	1 or 2 outputs	1 input, 2 relays	1		
Programming	Switch / front keys	Switch / front keys	Switch / front keys		
APPROVALS:					
DNV		✓			
EAC	✓	✓	✓		
APPLICATION GUIDE:					
mA / V / mV input	✓/ ✓ / -	✓/ ✓ / -	- / - / ✓		
AC signal input		✓			
Digital ON/OFF signal input	✓		✓		
Controller / regulator function	✓	✓			
Load cell applications			✓		
Proportional valve applications	✓				
Frequency / pulse applications					
mA / V output			✓		
Relay output		✓			

Of span = Of the presently selected range

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

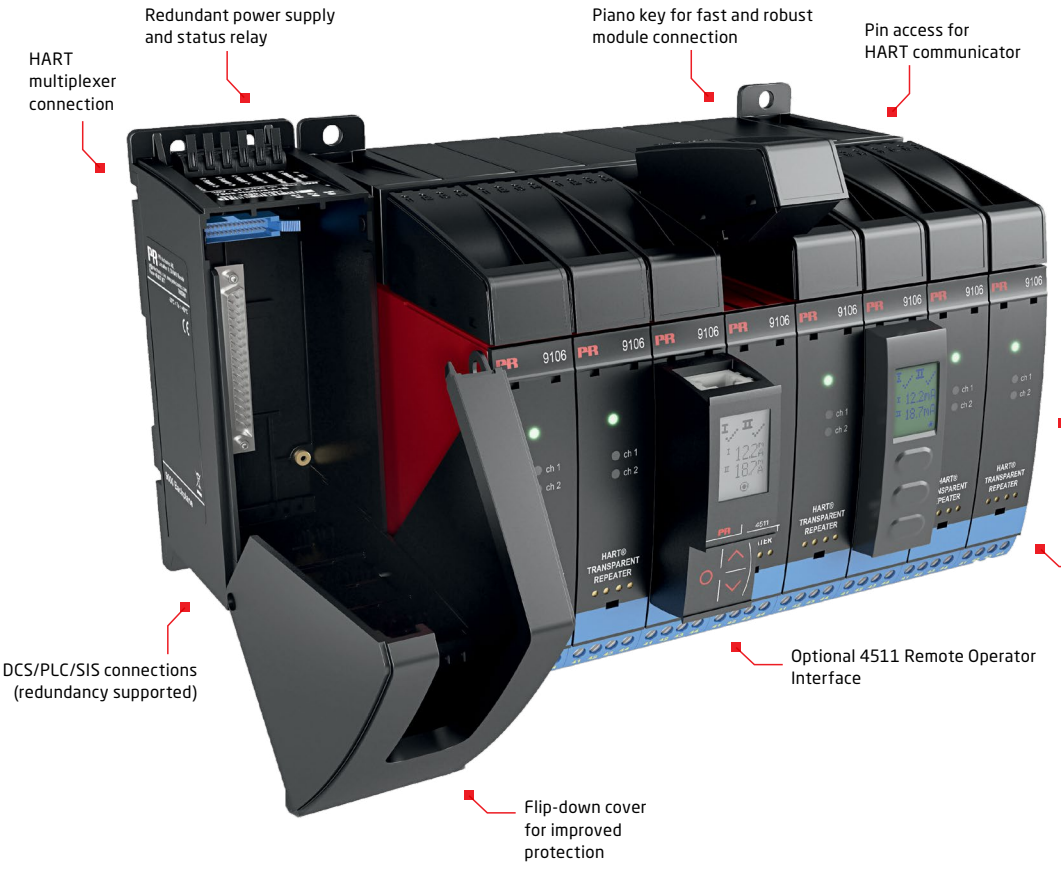
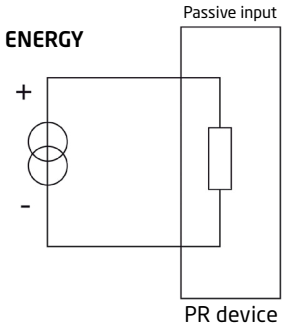
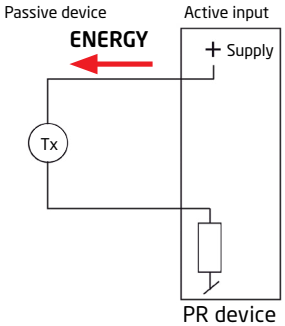


ABB
Honeywell
YOKOGAWA
PR UNIVERSAL

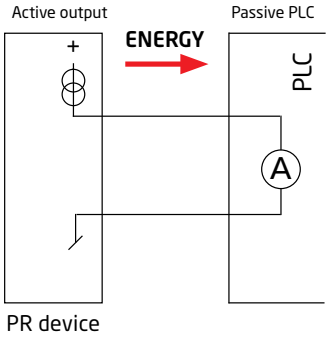
SIGNAL TYPES

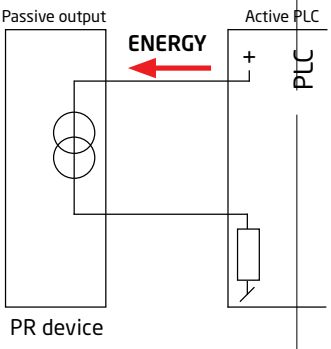
INPUT





OUTPUT





4510

Display / programming front

4511

Modbus communication enabler

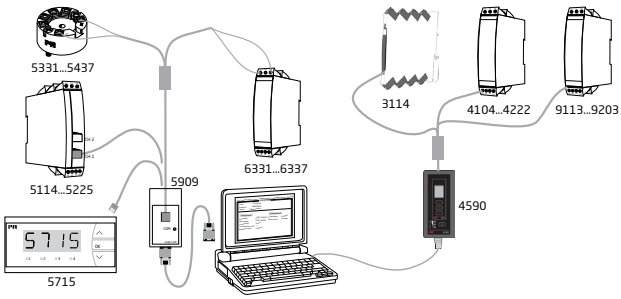
4512

Bluetooth communication enabler with data logging

4590

ConfigMate

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.

277USB

USB HART modem

278

Bluetooth Low Energy (BLE) HART modem

3400T

Electromechanical counter

5909

Loop Link communications interface

5910

CJC connector, channel 1

5910Ex

CJC connector for I.S. / Ex devices, channel 1

5913

CJC connector, channel 2

5913Ex

CJC connector for I.S. / Ex devices, channel 2

7002

Spring clip

7005

Shunt resistor 0.1 Ω

7006

Shunt resistor 1 Ω

7007

2-digit digital potentiometer

7008

3-digit digital potentiometer

7009

10-turn potentiometer, 200 Ω

7010

10-turn potentiometer, 20 kΩ

7011

Dial for 10-turn potentiometer

7012

1-turn potentiometer, 1 kΩ

7014

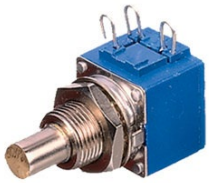
Shunt resistor 0.5 Ω

7015

1-turn potentiometer, 10 kΩ

7016

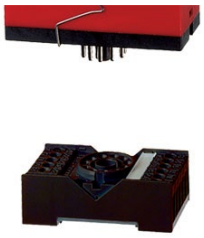
1-turn potentiometer, 100 kΩ



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

7030
Shunt resistor 0.1 Ωfor DIN rail mounting

7031
Label sheet with engineering units

7400
Pt100 temperature sensor

7410C
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

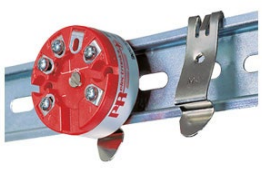
8341
Inductive proximity sensor, NAMUR

8342
Inductive proximity sensor, NAMUR

8343
Inductive proximity sensor, NPN

8344
Inductive proximity sensor, NPN

8421
DIN rail fitting



8501

Field enclosure

8509

M12 interface cable for 5909 Loop Link

8510

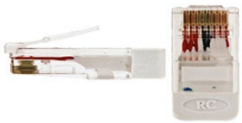
8 unit 4511 Modbus cable

8511

4511 Y-splitter Modbus cable

8513

RJ45 Modbus termination



8514

3 X RJ45 female Y-splitter

8515

RJ45 female to female cable adapter

8516

RJ45 female to female shielded cable adapter

8517

3 x RJ45 female shielded Y-splitter

8550

7501 M20 plug with silicone O-ring for alu enclosure

8550-F

7501 M20 plug with FKM O-ring for alu enclosure

8550-S

7501 M20 plug with silicone O-ring for stainless steel enclosure

8550-SF

7501 M20 plug with FKM O-ring for stainless steel enclosure

8551

7501 ½NPT plug for alu enclosure

8551-S

7501 ½NPT plug for stainless steel enclosure

8552

Pipe-mounting bracket for 7501

8555

Display with LOI for 7501

8556

Display without LOI for 7501

8557

Bracket spare part for display and transmitter (for 7501)

8558

Bracket spare part for transmitter only (for 7501)

9400_1

Power rail 15 mm profile

9400_2

Power rail 7.5 mm profile

9402

Extra end covers for power rail

9404

Module stop for rail

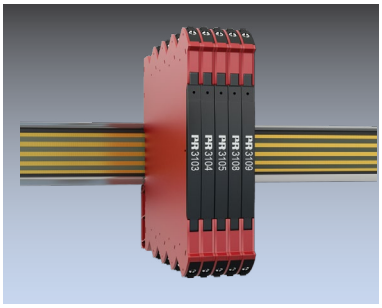
POWER RAIL

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	-50°C to +85°C	-20°C to +60°C	-40°C to +85°C	-20 / -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		Cycoloy/Noryl
PR 3000 series	113	6.1	115		Cycoloy
PR 4000 / 6000 / 9000 series	109	23.5	104		Cycoloy
PR 4500 series	73.2	23.3	26.5		Cycoloy
PR 5000 series	109	23.5	130		Cycoloy
PR 5300 series	20.2	Ø44			Cycoloy
PR 5400 series	21.45	Ø44			Cycoloy
PR 5500 /5700 series	48	96	120	44.5 x 91.5	Noryl
PR 7500 series	109	145	125.5		Aluminum

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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.

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