



## Analog input board BC0015A1

*Safe and reliable automation*

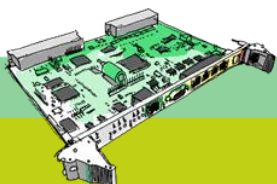
### Analog input board BC0015A1 of Control System SandRA Z100 line

The **BC0015A1** analog input board belongs to the **SandRA Z100** family of control systems, which are suitable for applications in the field of nuclear industry. Above all, these industries require a safe, powerful and reliable control system, which the **SandRA Z100** certainly is.

Board **BC0015A1** is used for **extremely accurate** measurement of resistance and thermoelectric sensors. The measured sensors are directly connected to the inputs of the board. The extreme precision is achieved by using measurement methods independent of standard errors in electronic circuits. The measurement is **highly stable over the long term**. When measuring resistance, the influence of all external and internal thermoelectric phenomena is eliminated.



- **Designed for 19" rack**
- **Board dimensions 20 x 262 x 208 mm**
- **16 completely isolated inputs**
- **Direct measurement of resistive sensors**
- **High accuracy and long measurement stability**
- **Cable unit connection failure detection**
- **Signaling LED on front panel**
- **The design and circuit design enables the Hot Swap function**



## Mechanical parameters and weight

Parameter	Conditions	Min.	Type	Max.	Units
Board dimensions	(W x H x D)		20 x 262 x 208		mm
Front panel dimensions <sup>1</sup>			4TE x 6HE		
Weight					g

## Electrical parameters

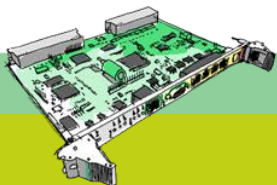
Parameter	Conditions	Min.	Type	Max.	Units
Power voltage		21	24	26	V
Consumption			350	550	mA
Number of inputs			16		
Insulation strength input/system		700			V DC
Insulation strength input/input		700			V DC
Insulation resistance	against the panel board	20			MΩ
Input range U150		-150		150	mV
Input range 4W1K	4W connection	0		1	kΩ
Input range 4W10K	4W connection	0		10	kΩ
Input range 3W1K	3W connection	0		1	kΩ
Input range 4W10K	3W connection	0		10	kΩ
Measurement period			100		ms
Input accuracy at ambient temperature 23±5°C <sup>3</sup>	range U150 range 4W1K range 3W1K range 4W10K 4W10K, 3W10K		1,0 + 0,010 0,5 + 0,002 2,0 + 0,002 ---	5,0 + 0,04 6,0 + 0,01 6,0 + 0,01 6,0 + 0,05	μV + % <sup>4</sup> mΩ + % <sup>4</sup> mΩ + % <sup>4</sup> mΩ + % <sup>4</sup>
Additional input errors by ambient temperature change	range U150 range 4W1K 4W10K, 3W1K range 4W10K 4W10K, 3W10K			0.0010.00030.0003	% <sup>4</sup> /K% <sup>4</sup> /K% <sup>4</sup> /K

<sup>1</sup> intended for 19" rack

<sup>2</sup> The calibration is valid for two years

<sup>3</sup> Including standard measurement uncertainty determined in accordance with document EA4/02

<sup>4</sup> Percentage of the measured value



Parameter	Conditions	Min.	Type	Max.	Units
Additional input errors by changing the supply voltage	range U150			0,001	% <sup>4</sup> /V
	range 4W1K 4W10K, 3W1K			0,001	% <sup>4</sup> /V
	range 4W10K 4W10K, 3W10K			0,001	% <sup>4</sup> /V
Additional errors of entry by aging	range U150			0,02	% <sup>4</sup> /year
	range 4W1K 4W10K, 3W1K			0,005	% <sup>4</sup> /year
	range 4W10K 4W10K, 3W10K			0,005	% <sup>4</sup> /year
Signal suppression 50Hz		140			dB
Additional input errors by converting the thermocouple to °C	type A (100÷2480 °C)	-0,3		0,3	°C
	type B (250÷700 °C)	-0,020		0,026	°C
	type B (700÷1820 °C)	-0,007		0,012	°C
	type C (0÷2315 °C)	-0,5		0,5	°C
	type E (-200÷0 °C)	-0,010		0,022	°C
	type E (0÷1000 °C)	-0,012		0,016	°C
	type J (-210÷0 °C)	-0,048		0,028	°C
	type J (0÷760 °C)	-0,035		0,037	°C
	type J (760÷1200 °C)	-0,037		0,024	°C
	type K (-200÷0 °C)	-0,018		0,041	°C
	type K (0÷500 °C)	-0,047		0,033	°C
	type K (500÷1300 °C)	-0,046		0,054	°C
	type N (-200÷0 °C)	-0,013		0,027	°C
	type N (0÷600 °C)	-0,016		0,027	°C
	type N (600÷1300 °C)	-0,039		0,021	°C
	type R (-50÷250 °C)	-0,011		0,018	°C
	type R (250÷1064 °C)	-0,003		0,005	°C
	type R (1064÷1064,5 °C)	-0,0005		0,001	°C
	type R (1064,5÷1768,1 °C)	-0,001		0,001	°C
	type S (-50÷250 °C)	-0,011		0,020	°C
type S (250÷1064 °C)	-0,009		0,006	°C	
type S (1064÷1064,5 °C)	-0,0005		0,0005	°C	
type S (1064,5÷1768,1 °C)	-0,002		0,001	°C	
type T (-200÷0 °C)	-0,017		0,038	°C	
type T (0÷400 °C)	-0,025		0,025	°C	
Additional input errors by converting a given resistance sensor to °C	Pt100 (-200÷0 °C)	-0,17		0,075	°C
	Pt100 (0÷850 °C)	-0,0005		0,0001	°C
	Pt1000 (-200÷0 °C)	-0,17		0,075	°C
	Pt1000 (0÷850 °C)	-0,0005		0,0001	°C

This document contains the product BC0015A1 and follows the "Z100 Technical conditions" No. C4-2443 constituting its integral part.

