ABB Procontic T200

Connection to the Process

Binary input devices

07 EB 60 R1
Binary input device
24 V AC/DC, electrical isolation, 16-fold

07 EB 61 R1
Binary input device
24 V AC/DC, electrical isolation, 32-fold

07 EB 62 R1
Fast binary input device 24 V DC, electrical isolation, 32-fold

07 EB 63 R1
Binary input device
48 V AC/DC, electrical isolation, 16-fold

07 EB 64 R1
Binary input device
48 V AC/DC, electrical isolation, 32-fold

07 EB 66 R1
Binary input device
115 V AC, electrical isolation, 16-fold

07 EB 67 R1
Binary input device
230 V AC, electrical isolation, 16-fold

Analog input devices

07 EA 60 R1
Analog input device
0 ... 10 V, electrical isolation, 8 bits, 8-fold

07 EA 61 R1
Analog input device
4 ... 20 mA, electrical isolation, 8 bits, 8-fold

07 EA 62 R1
Analog input device
-10 ... +10 V, electrical isolation, 12 bits, 8-fold

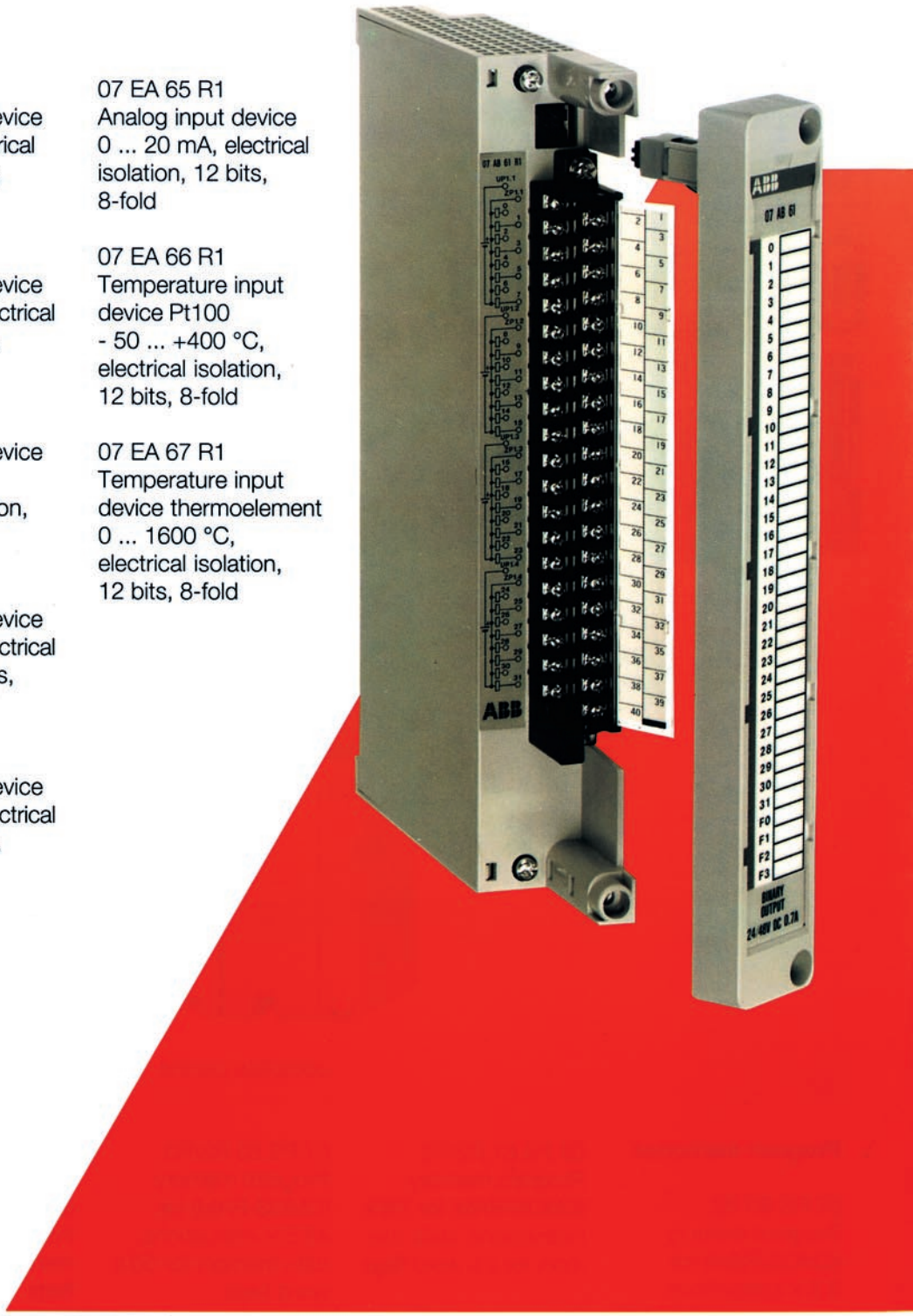
07 EA 63 R1
Analog input device
4 ... 20 mA, electrical isolation, 12 bits, 8-fold

07 EA 64 R1
Analog input device
0 ... 20 mA, electrical isolation, 8 bits, 8-fold

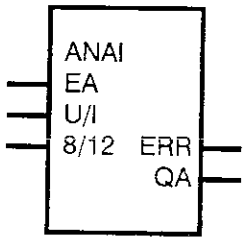
07 EA 65 R1
Analog input device
0 ... 20 mA, electrical isolation, 12 bits, 8-fold

07 EA 66 R1
Temperature input device Pt100
- 50 ... +400 °C, electrical isolation, 12 bits, 8-fold

07 EA 67 R1
Temperature input device thermoelement
0 ... 1600 °C, electrical isolation, 12 bits, 8-fold

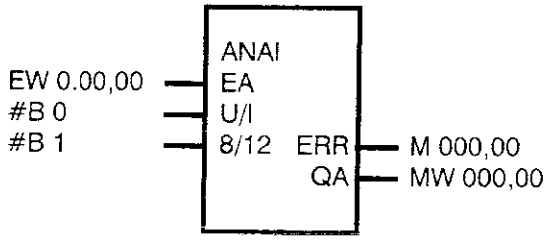


FBD/LD



Example

FBD/LD



IL

```
!BA   00
      FB 010
EP    EW 0.00,00
EP    #B 0
EP    #B 1
AP    M 000,00
AP    MW 000,00
```

Parameters

EA	WORD	EW	Analog input
U/I	BINARY	E, E', M, M', #B0, #B1, A, A', S, T, Z	Voltage/current selection
8/12	BINARY	E, E', M, M', #B0, #B1, A, A', S, T, Z	8/12 bits resolution selection
ERR	BINARY	A, A', M, M'	Open–circuit monitoring output for 4–20 mA
QA	WORD	MW, MW', AW, AW'	Analog value output in internal representation

Description

The ANAI block (FB 010) serves to read analog values and convert them into the internal format of ± 100 % = ± 4095 regardless of the connected analog module.
In case of the modules 07 EA 61 and 07 EA 63 a broken wire is also monitored for 4...20 mA current inputs.

EA WORD Analog input
The analog input to be read is specified at the input EA.

U/I BINARY Voltage/current selection

A logic 1–signal at the binary input U/I signifies voltage input. A logic 0–signal at the binary input U/I signifies current input (see also Table 1).

8/12 BINARY 8/12 bits resolution selection
A logic 1–signal at the binary input 8/12 signifies an 8 bit input. A logic 0–signal at the binary input 8/12 signifies a 12 bit input (see also Table 1).

ERR BINARY Output, open–circuit monitoring for 4 – 20 mA
This output only works, when current input is selected (U/I = 0; applies to the 07 EA 61 and 07 EA 63 modules with current inputs of 4...20 mA).
If an open circuit is detected, the ERR output indicates a 1-signal and the QA output is set to 0.
If U/I = 1, i.e. voltage input is selected, the ERR output is always 0.

QA WORD Output, analog value in internal representation
The QA word output shows the converted value of the analog signal (internal representation).
In case of a detected open circuit the output is set to 0.
The conversion of the analog signals by the ANAI block is arranged in Table 2.

Module	Range	Resolution	U/I code	8/12 code
07 EA 60	0 V ... 10 V	8 bits	#B1	#B1
07 EA 61	4 mA ... 20 mA	8 bits	#B0	#B1
07 EA 62	−10 V ... +10 V	12 bits	#B1	#B0
07 EA 63	4 mA ... 20 mA	12 bits	#B0	#B0

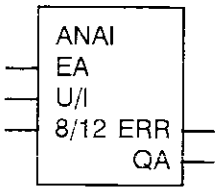


Table 1: U/I code and 8/12 code of the ANAI function block

Module type	Input range	ANAI, input value EA decimal	ANAI, input value EA hexadecimal	ANAI, output value QA decimal	ANAI, output value QA hexadecimal
07 EA 60	0 V ... 10 V	0 ... 255	0000_H ... $00FF_H$	0 ... 4080	0000_H ... $0FF0_H$
07 EA 61	4 mA ... 20 mA	8 ... 255	0008_H ... $00FF_H$	0 ... 4080	0000_H ... $0FF0_H$
	< 3.6 mA	≤ 2	≤ 0002_H	ERR = 1 (open circuit)	
07 EA 62	−10 V ... − 0 V	− 2048 ... − 1	0800_H* ... $0FFF_H$*	− 4096 ... − 2	$F000_H$ ... $FFFE_H$
	+ 0 V ... +10 V	+ 0 ... 2047	0000_H ... $07FF_H$	0 ... 4094	0000_H ... $0FFE_H$
07 EA 63	4 mA ... 20 mA	64 ... 4095	0040_H ... $0FFF_H$	0 ... 4095	0000_H ... $0FFF_H$
	< 3.75 mA	≤ 2	≤ 0002_H	ERR = 1 (open circuit)	

* Here, 0800_H stands for $F800_H = -2048_{DEC}$, $0FFF_H$ stands for $FFFF_H = -1_{DEC}$

Table 2: Conversion of the analog signals by the ANAI block. More detailed tables are in the hardware descriptions of the individual analog input modules.

CE Data

Operating time:	07 ZE 60	07 ZE 61/63	07 ZE 62
Basic operating time:			
Voltage input (07 EA 60, 07 EA 62):	17.6 µs	17.6 µs	9.2 µs
Current input (07 EA 61, 07 EA 63):	68.0 µs	68.0 µs	36.1 µs
Additional operating time:	– – –	– – –	– – –
Output updating:	yes		
Memory allocated once when called:	131 double words with 32 bits each		
Available with:	ABB Procontic T200 and 907 PC 332		