

DESCRIPTION

8 Channel analog input expansion module for standardized temperature sensors.

VERSIONS/ORDERING CODES

Type:

Expansion module

Analog input/output:

Number of inputs

8

Input range

Pt-100

-50 - +100°C

-50 - +300°C

-50 - +850°C

Pt-500

-50 - +100°C

-50 - +300°C

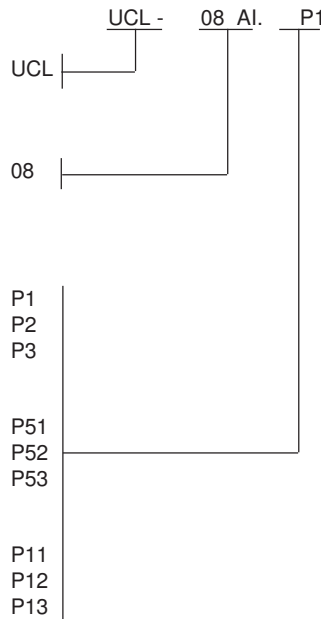
-50 - +850°C

Pt-1000

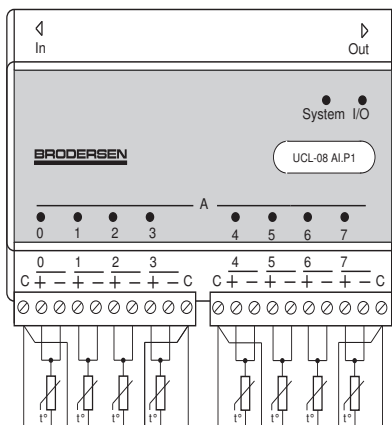
-50 - +100°C

-50 - +300°C

-50 - +850°C



WIRING DIAGRAM



TECHNICAL DATA

Number of inputs: 8 multiplexed analog channel (note 3).

Input configuration: 3 wire (or 2 wire).

Indicators: One (red) for each channel indicating that the input is active. (note 3).

Input measuring ranges:

Sensor type		(note 1)	Range
Pt-100	Pt-500	Pt-1000	
P1	P51	P11	-50 - + 100°C
P2	P52	P12	-50 - + 300°C
P3	P53	P13	-50 - + 850°C

Resolution: 12 bit (note 2).

Conversion/settling time: Max. 60ms per channel (note 3).
Max. 0.5s.

Measuring accuracy: Better than ±0.5% of FSR

Linearity: Better than ±0.1% of FSR (note 5).

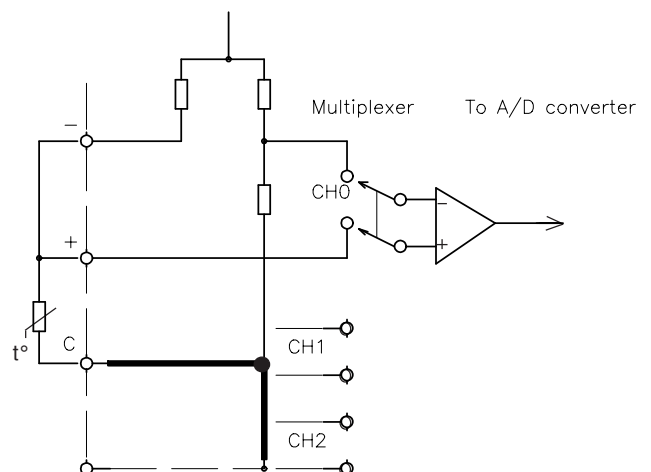
Temperature stability: Better than ± 100ppm/°C (typical).

Isolation
(input to electronics): 500V DC (note 4).

Module current consumption: Max. 200mA.

Ambient temp.: -40 - +65 deg celcius.

CIRCUIT CONFIGURATION





Analog input

Analog input, 8 channels Pt-100, 500, 1000 temperature sensors UCL - 08 AI.Px

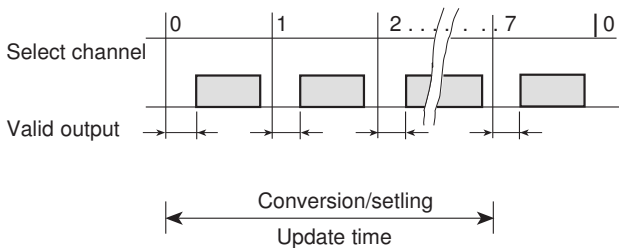
NOTES/REMARKS

- 1) Resistance according to DIN 43760/IEC 751 ($\alpha = 0.00385$).
- 2) The value in the PC (or PLC) is represented by an integer (binary number) from 0 to 4095 depending on the temperature, see table below.

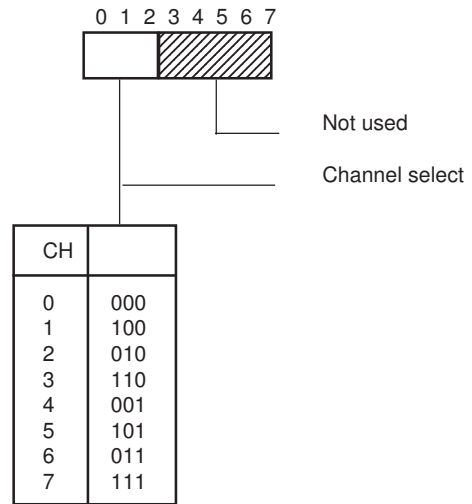
Temperature	Range		
	-50 - 100°C	-50 - 300°C	-50 - 850°C
	Integer (binary code)		
<-50	0	0	0
-50	0	0	0
-25	683	293	114
0	1365	585	228
25	2048	878	341
50	2730	1170	455
75	3413	1463	569
100	4095	1755	683
125	4095	2048	796
150	:	2340	910
200	:	2925	1138
250	:	3510	1365
300	:	4095	1593
400	:	4095	2048
500	:	:	2275
600	:	:	2730
700	:	:	3413
850	:	:	4095
>850	:	:	4095
Resolution	0.03663°C	0.08547°C	0.21978°C

Integer (binary value) = $\frac{\text{Input-range} - \text{min}}{R}$, where R is the resolution.

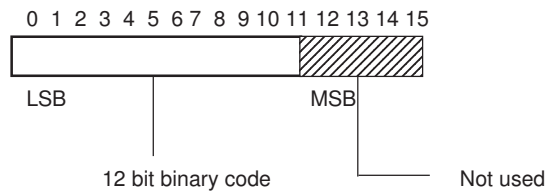
- 3) Only one input channel is active at a time. Connected to a Series 2000 slave module (UCB-...) the multiplexing is automatically done by the slave module and the input values are transferred via the bitbus to the PC as 8 separate values. Because of the settling time, an input must be selected more than 50 ms before reading the value.



The active channel is selected by 8 bits (output) as shown below.



The input value is presented as 16 bits (input) as shown below.



- 4) The individual inputs are **NOT ISOLATED** from each other. The 4 common (C) terminals are internally connected.
- 5) The linearization of the sensor is carried out by the Series 2000 slave module (UCB-xx). If the module is used with other equipment the user must correct for the non linearity of the sensor.