

Nokeval

No 9082001

Manual

**Model2081
Grey-, BCD- and Bi-
nary inputs**



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Panel meter 2081 for BCD, Grey and Binary inputs

- 5-digit display
- Selectable BCD, Grey and Binary inputs
- Red or green display
- Front panel configuration
- Power supply 85..240VAC or 12..32VDC
- Front panel protection IP65
- Easily changeable for other inputs



Technical specifications:

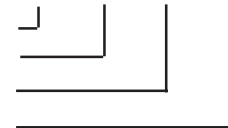
Panelmeter 2081 is designed for BCD, Grey and Binary coded inputs. Input selection is easy by front panel keys. Two power supply alternatives, 85..240 VAC and 12..32 VDC or 24 VAC, both galvanic isolated from inputs. Meter generates 24 VDC, 100 mA power supply for f. ex. PLC's closing contacts. Selectable pass word for configuration stage. Selectable brightness of display. Front panel protection is IP65.

Meter is a part of larger product family, series 2000, and may be changed to other type of meter only by changing input card. Change of input card changes also meter type. Each meter has its own data sheet and instruction manual. Additional, optional cards are the same for all input cards of product family series 2000. Changing of meter type needs no calibrations; only sensor selections and other settings are made by front panel keys.

Display: BCD code -9999..99999 (5 digits)
 Grey code 0..65535
 Binary code 0..65535
 Display height 14.5 mm
 Display color Red or green LED, adjustable brightness
 Input 1 = 5-24 VDV, 0 = <1V
 Input resistance >10kΩ
 Supply for input loop 24 VDC, max 150 mA
 Power 85..240 VAC or 12..32 VDC and 24 VAC
 Protection IP65, front panel only
 Optional field enclosure 2000IP65

Order code 2081GR-BCD2-BCD2-24VDC

2081GR green display
 2 BCD inputs
 2 BCD inputs
 12..32 VDC, 24VAC
 or 85..240VAC



Basic meter has 1 BCD-digit and 4 bit Grey- and Binary input. More numbers with optional cards, two in each. Above example has 5 BCD-numbers. Standard colour is red unless otherwise specified.

Number	BCD-Code	
	Code	Example
1	8, 4, 2, 1	0001= 1
2	8, 4, 2, 1	0010= 2
3	8, 4, 2, 1	0011= 3
4	8, 4, 2, 1	0100= 4
5	8, 4, 2, 1	0101= 5
6	8, 4, 2, 1	1001= 9

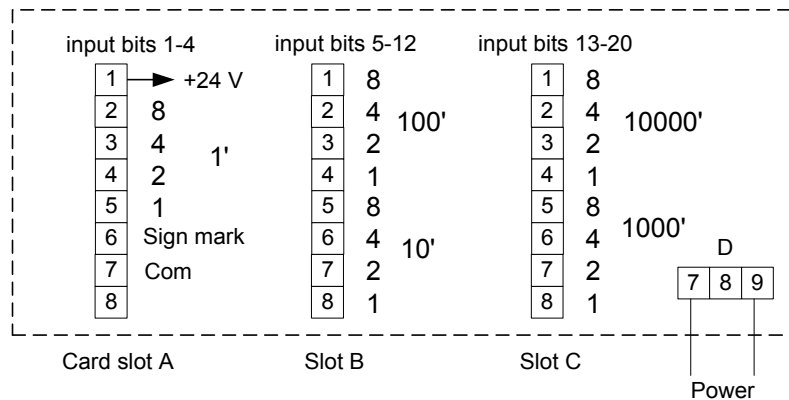
Number 9 in BCD-code is selected as 1001 i.e. 1001 = 8 + _ + _ + 1 = 9

Dec.	4-bit Binary	4-bit Grey Code	Display
8	^{MSB} 1 0 0 0 _{LSB}	^{MSB} 1 1 0 0 _{LSB}	8
9	1 0 0 1	1 1 0 1	9
10	1 0 1 0	1 1 1 1	10
11	1 0 1 1	1 1 1 0	11
12	0 1 0 0	1 0 1 0	12
13	1 1 0 1	1 0 1 1	13
14	1 1 1 0	1 0 0 1	14
15	1 1 1 1	1 0 0 0	15

Applications:
 Binary code is simple to use from PLC I/O-lines. Grey-code changes only one bit at a time. Most common Grey code application is angle sensors (aerials etc.)

Terminal connections:

BCD-code connection

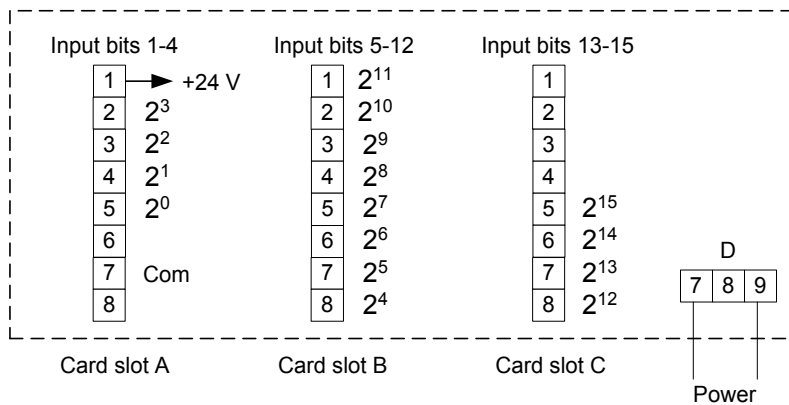


Selected number can be show by connecting +24 V to desired terminals. F. eg. reading 123 appears by connectin 24 V to terminals A5, A4, B7 and B4.

Voltage supply 24 V, max 100mA, terminals 1(+) and 7 (-).

Power 85..240 VAC or 12..32 VDC / 24VAC. No polarity.

Binary- and Gray-code connection

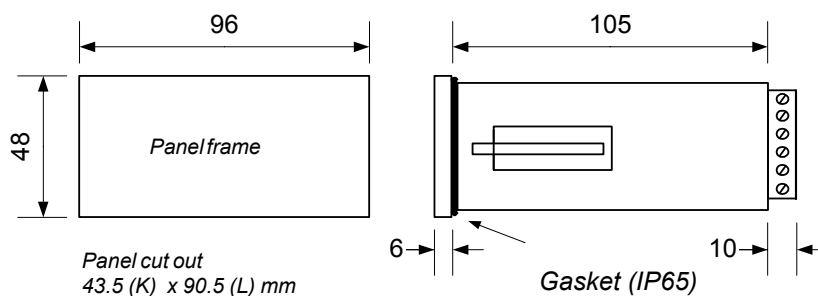


Bit is '1' when voltage is 5-24V and '0' when voltage is 0V. F. eg. binary value 123 is selected by connecting '1' to connectors A5, A4, A2, B7, B6, B7 ja B8.

Voltage supply 24 V, max 100mA, terminals 1(+) and 7 (-).

Power 85..240 VAC or 12..32 VDC / 24VAC. No polarity.

Dimensions:

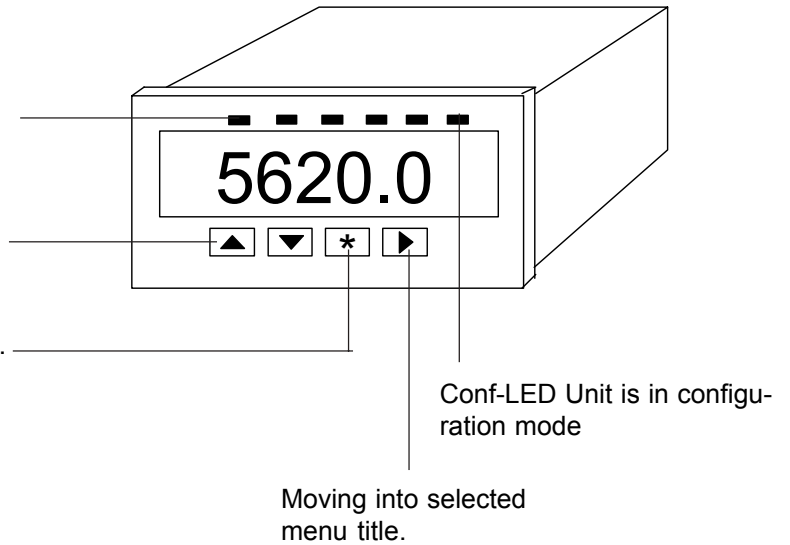


Front panel

User controllable indicators.

Arrow-buttons(▲▼) are used to change numerical values and when moving in menu-structure.

Star-key (★) accepts selected function (enter).



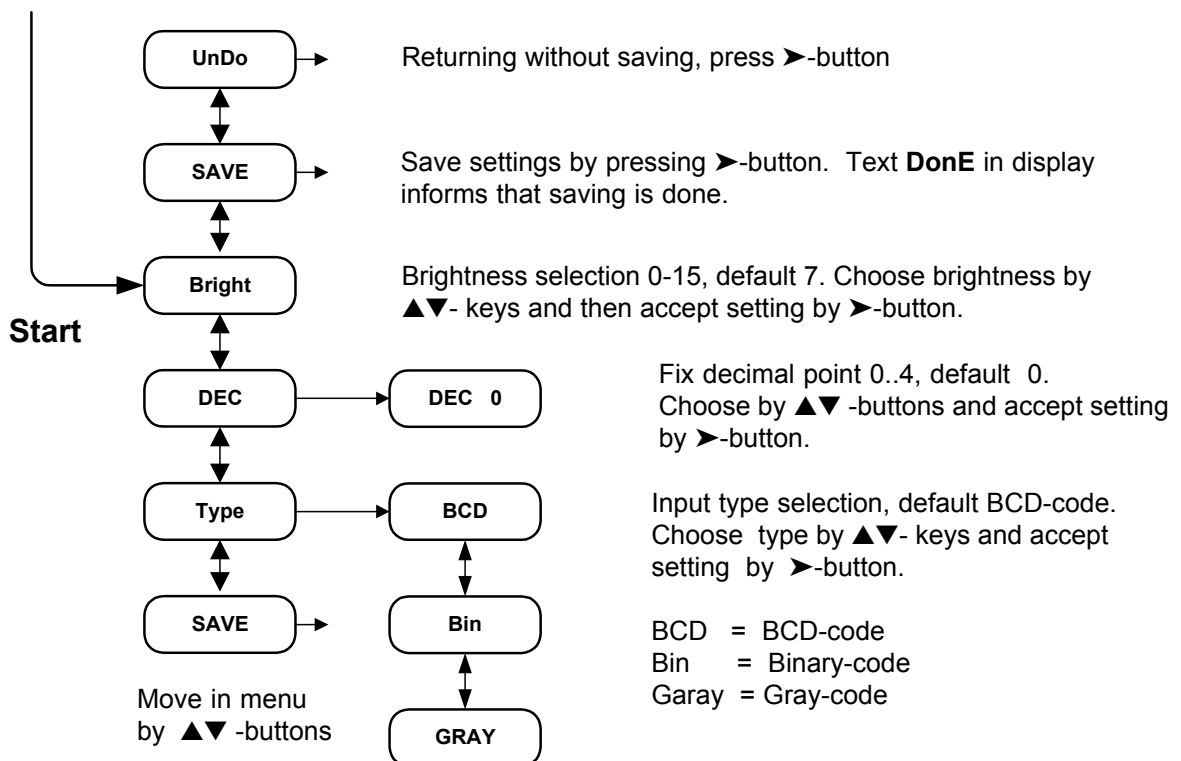
Configuration stage

Configuration can be started by pressing and holding ★- and ▲-keys simultaneously for 2 seconds.

Resetting configuration parameters

Some times it is necessary to return indicator parameters to factory defaults, e.g. if secret access code is missed. Resetting can be done by pressing and holding ★- and ▶-keys simultaneously for 2 seconds when connecting supply voltage. Procedure will reset all settings to factory defaults.

Press and hold ★- and ▲-keys simultaneously for 2 seconds.

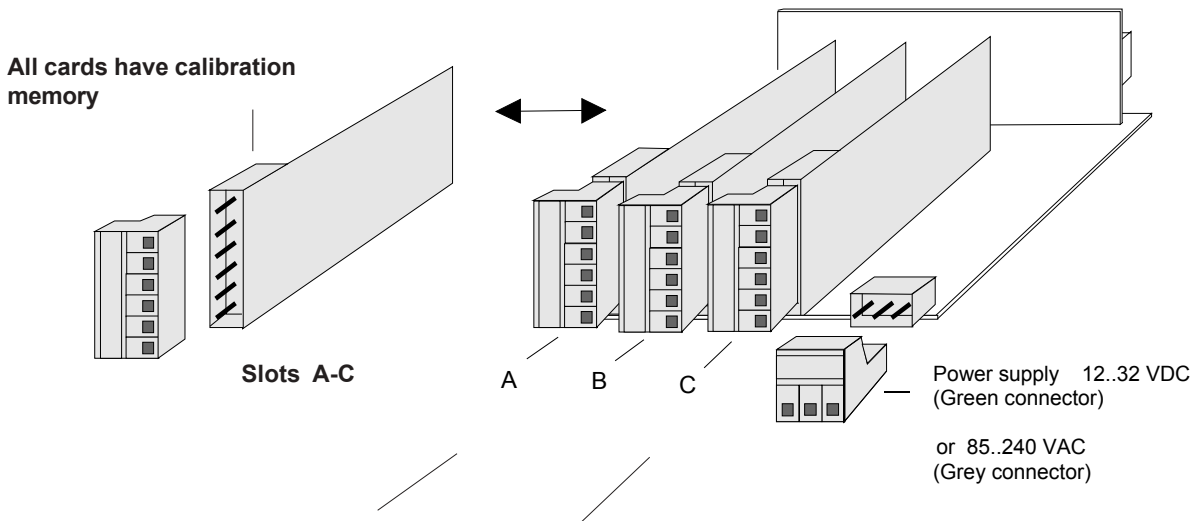


Panelmeter 2000 construction

The 2000 series panelmeters are modular and easy to assemble. According to customers wishes. The basic construction consists of mother board with three slots, A, B and C. Slot A determines meter type and provides always input signal. Slot B and C are interchangeable. As factory delivery input signal is always installed into slot A, mA output into slot B and alarms into slot C. In case of f.ex 4 alarms and relay card with 2 change-over contact (2 + 2 relays) are used, you must place second relay card into slot B. If

you accept only closing or opening relay contacts, you need only one relay card with 4 relays placed into slot C. The slot B is now usable for other optional outputs.

You can have different types of meters by only changing the input card in slot A. Data sheet of each type of meter dictates the possible combinations. Recalibration of card is not needed; only scaling and other settings must be set by front panel keys.



Change of meter type:

Input card is placed always to slot A. By changing input card you can get an other type of meter. You can change meter with pulse input to meter with current input, thermocouple, strain gage etc.

Additional slots:

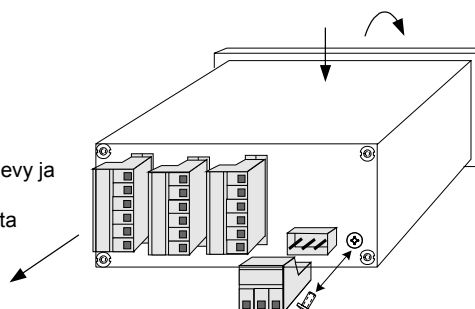
Additional cards provide output 4..20 mA, alarms, serial interface, BCD output etc. Meter data sheet dictates possible combinations. grey connectors allow line voltage 110..240 VAC (relay contacts).

Power supply:

There are two different mother boards power supply 85..240VAC and 12..32 VDC. mother board accepts 24 VAC. Connectors are colour coded.

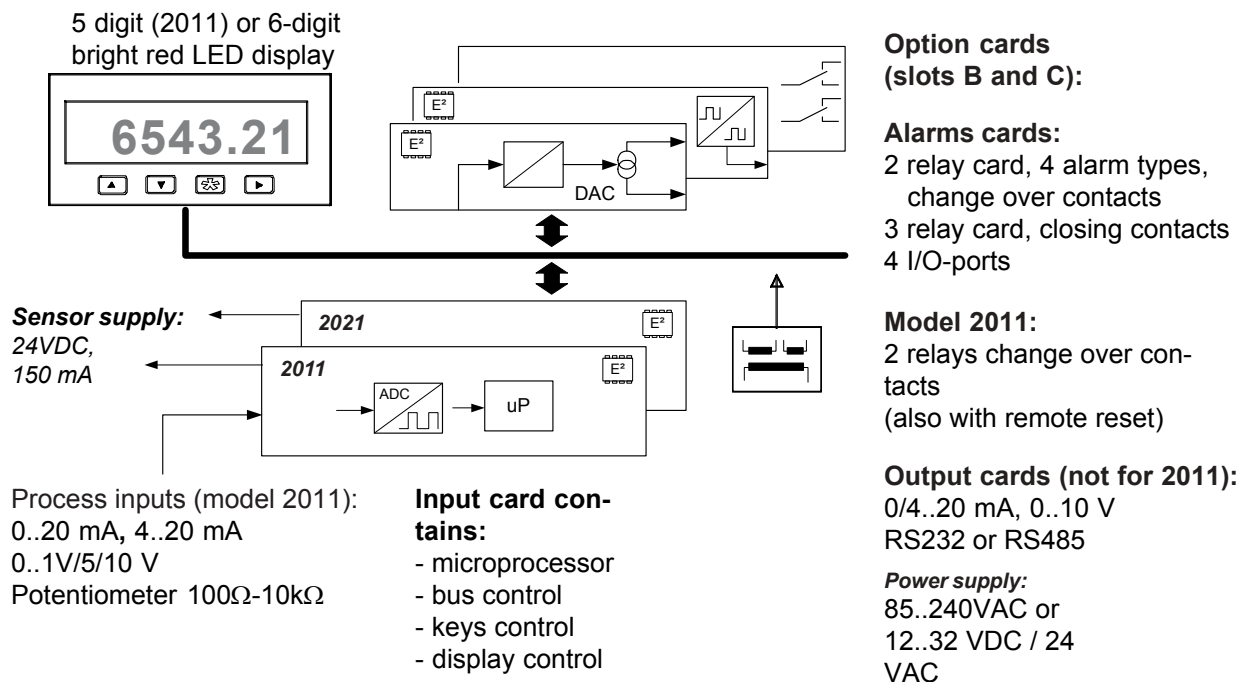
Removing meter from case:

Irroita riviliittimet ja kiinnitysruuvi verkkoliittimen vierestä. Irroita etulevy ja vedä mittari ulos etukautta. Piirilevyt voidaan poistaa takakautta avaamalla neljä kulmaruuvia.



Purista kevyesti mittaria etulevun takaa ja vedä eturaamia ulospäin yläreunasta

Modular indicator serie 2000



Indicator 2011 can have limited part of 2000 series functions. Model 2021 contains also process inputs but it can also measure RTD-sensors and thermocouples. 2021 has more accurate and faster A/D-converter (16 bit 1/64 000).

2000 series input and option cards:

2011-IN	Process input	2000-BASE	Base card with power supply
2021-MU	Multi input	2000-REL2	Alarm card, NO/NC
2031-IR	Infrared sensor input	2000-REL3	Alarm card, Closing contacts
2041-SG	Strain gage measurement	2000-OUT	Output card, U and I
2051-PU	Scaleable frequency indicator	2000-RS	Serial output RS232 or RS485
2061-CO	Counter input (max 5 kHz)	2000-I/O	4 pcs input /output ports (60 V / 100 mA)
2071-RS	Serial input RS232 / RS485		
2081-BCD	BCD-input (1-5 digits)		

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