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**Huba Control**  
FEINE MESSIDEEN FÜR DRUCK UND STRÖMUNG  
LA FINESSE DES MESURES DE PRESSION ET DE DÉBIT  
FOR FINE PRESSURE AND FLOW MEASUREMENT



# Operating Manual

## Digital Display

## Type 800

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## Technical description

The digital display type 800 can be used to monitor or control any type of signal current or voltage. It converts the input signal to an internal standard signal of for example 0 to 100.0%. Within this range two alarm contacts can be set independently. A 4-digit LED display shows the actual value and setpoints or alarm values in the range of -1999 to 9999 units.

All settings as alarm values, hysteresis, range and operating mode of the floating contacts can be defined with a link cable, connected to a personal computer or a laptop. Both contacts can also be programmed with the keyboard. Power supply: Various Power Supplies available 24 - 230VAC / 24VDC

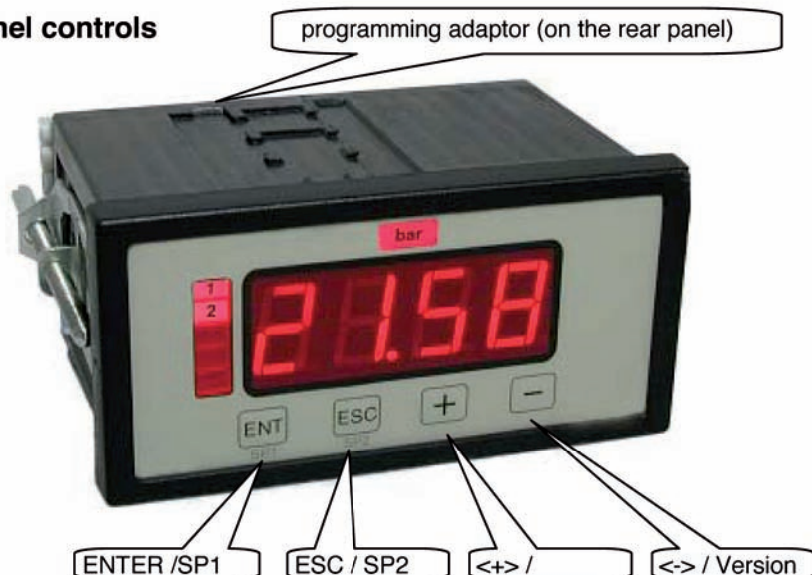
A typical application would be to measure and monitor pressure in a process vessel. The pressure transmitter converts the pressure of 1 to 10 bar to a current signal of 4 to 20mA. Type 800 monitors under- and overpressure in the vessel. It converts the 4... 20mA signal current to 1.00...10.00bar. The alarm is set between 1.00bar and 10.00bar. With these floating alarm contacts, overpressure valves, compressors, etc. can be driven directly.

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## A. Front panel controls



## B. Adjusting the limit contacts with the keyboard

The setpoint values of the limit contacts can be changed without programming Software and PC.

### 1. Unlock the user menu / insert or modify the menu protection access code:

The values of the user menu can be protected from unintended access using an access code. After activating the access code, menu values can be observed but no longer modified. To modify setpoints and other parameters, the access code has to be set to the value 0000. If the code has a value different from 0000, writing to the user menu is suppressed.

Set the access code:

1. Press and hold both buttons **<ENTER>** und **<ESC>** for 4 seconds.

⇒ After 4 seconds The display shows SP\_1 indicating the user menu.

2. Now navigate to the Code menu item with the button **<->**, then press **<ENTER>**.

*a) A code has already been entered:* The display flashes between Code und 0. Enter now the valid access code with the buttons **<+>** and **<->** and confirm with the **<ENTER>** key. If the code is wrong, the instrument quits the user menu. If the code is correct, it can be modified with the keys **<+>** and **<->**, or in order to make changes to the user menu, set to 0000.

*b) No code has been entered:* The display shows 0000. A code can be entered with the keys **<+>** and **<->** then confirm with the **<ENTER>** key. If you do not need the user menu protection, leave the value 0000 unchanged and quit the code menu with the **<ESC>** key.

### 2. Adjust the limit contacts:

1. Press and hold the button **<ENTER>** und **<ESC>** for 4 seconds.

⇒ The display shows SP\_1 indicating the user menu.

2. Move to menu item SP\_1 for limit contact #1 or SP\_2 for limit contact #2.

To move, use the button **<+>** or **<->**, then press **<ENTER>**.

⇒ The display indicates the actual value of the limit contact.

3. Change the value of the limit contact, using the button **<+>** or **<->**, then press **<ENTER>**.

4. Move to menu item HSt\_1 for limit contact #1 or HSt\_2 for limit contact #2.

To move, use the button **<+>** or **<->**, then press **<ENTER>**.

5. Change the value of the hysteresis, using the button **<+>** or **<->**, then press **<ENTER>**.

6. Move to menu item LED\_1 for limit contact #1 or LED\_2 for limit contact #2.

To move, use the button **<+>** or **<->**, then press **<ENTER>**.

7. Change the lamp status with the button **<+>** or **<->**, then press **<ENTER>**.

"nor": LED lamp ON, when the input value exceeds the setpoint value.

"Inr": LED lamp ON, when the input value under-runs the setpoint value.

8. Move to menu item rEL\_1 for limit contact #1 or rEL\_2 for limit contact #2.

To move, use the button **<+>** or **<->**, then press **<ENTER>**.

9. Change the relay operating mode with the button **<+>** or **<->**, then press **<ENTER>**.

"nor": Relay ON, when input value exceeds the setpoint value (normally open contact closed)

"Inr": Relay ON, when input value under-runs the setpoint value (normally open contact closed)

10. Press the button **<ESC>**

⇒ the display shows the actual measuring value.

### C. Adjusting the limit contacts with *Mpro*

Connect the link cable with the Computer and the display. (see H, page 6)

1. start "Mpro"
2. Choose "M2229" in menu "Instrument" <A>
3. Choose "Linear conversion table" under "Range" <B>
4. Choose "Adjust the limit contacts" <C>
5. Enter the values for the limit contacts and all other settings (hysteresis etc.)
6. Choose "Program the limit contacts"

### D. Adjusting the display range with *Mpro*

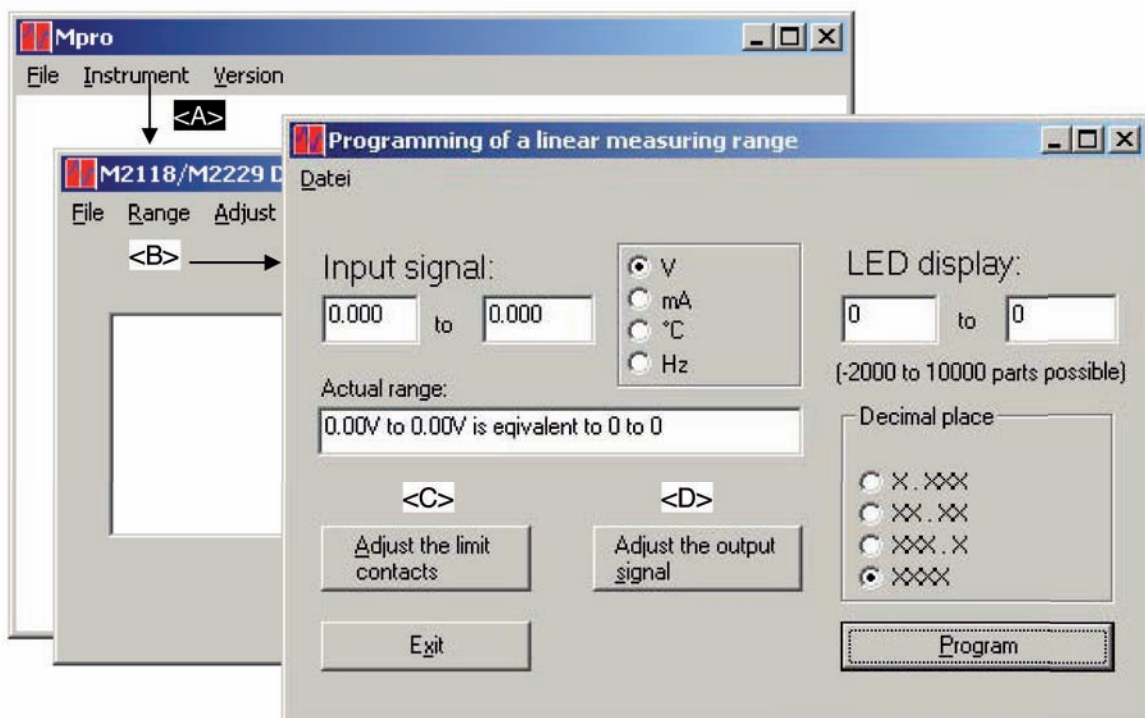
Connect the link cable with the Computer and the display. (see H, page 6)

1. start "Mpro"
2. Choose "M2229" under "Instrument" <A>
3. Choose "Linear conversion table" under "Range" <B>
4. Enter the value for input range, output range and decimal place
5. Choose "Program"

### E. Adjusting the output signal range with *Mpro*

Connect the link cable with the Computer and the display. (see H, page 6)

1. start "Mpro"
2. Choose "M2229" in menu "Instrument" <A>
3. Choose "Linear conversion table" under "Range" <B>
4. Choose "Adjust the output signal" <D>
5. Enter the values for the limit contacts and all other settings (hysteresis etc.)
6. Choose "Program the limit contacts"





## F. Fine-adjust the display/current output with the keyboard

The display and the current output can be changed without programming Software and PC.

### 1. Unlock the user menu / insert or modify the menu protection access code:

see B, page 4

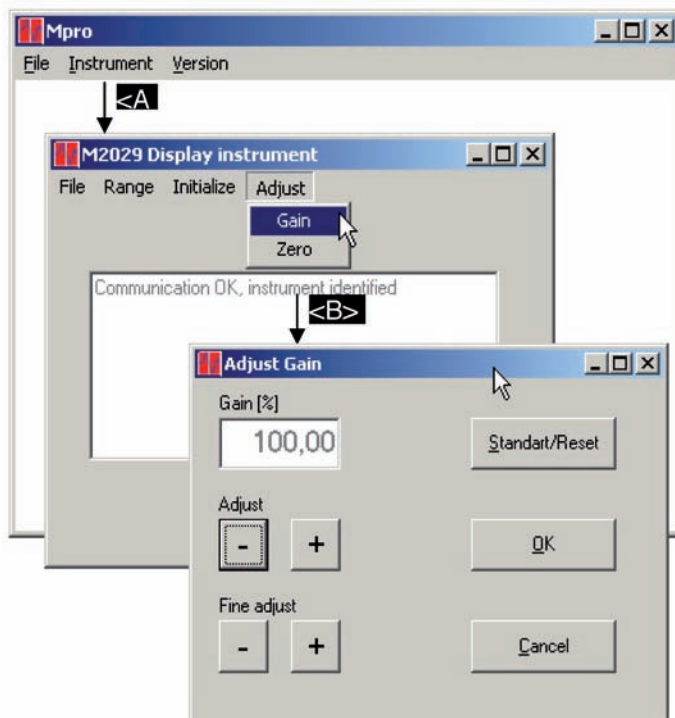
### 2. Adjust the limit contacts:

1. Press and hold the button <ENTER> and <ESC> for 4 seconds.  
⇒ The display shows  $\$P_1$  indicating the user menu.
2. Move to menu item d\_Zo for display min. and or d\_GA for display max. value, or I\_Zo for current output min. and I\_GA for current output max. value  
To move, use the button <+> or <->, then press <ENTER>.  
⇒ The display indicates the actual value of the limit contact.
3. Change the value, using the button <+> or <->, then press <ENTER>.
4. Press the button <ESC>  
⇒ the display shows the actual measuring value.

## G. Fine-adjust the display with Mpro

Connect the link cable with the computer and the display. (see H, page 6)

1. start "Mpro"
2. Choose "M2229" in menu "Instrument" <A>
3. Choose "Adjust" for fine-adjusting the "Gain" or "Zero" <B>.



## H. General references for using the Mpro

- The newest software may be downloaded any time and free of charge at [www.mostec.ch](http://www.mostec.ch).
- Connect the Type 800 to the power supply for programming
- Be sure that the connected COM-port isn't used by any other peripheral device.
- If the PC or the corresponding COM-port is "grounded" by the power line cable or by other cabling, ground loops may interfere with the measuring signal. The use of a computer with battery power is recommended to avoid such problems.
- Contact us if there are problems or questions concerning the software.

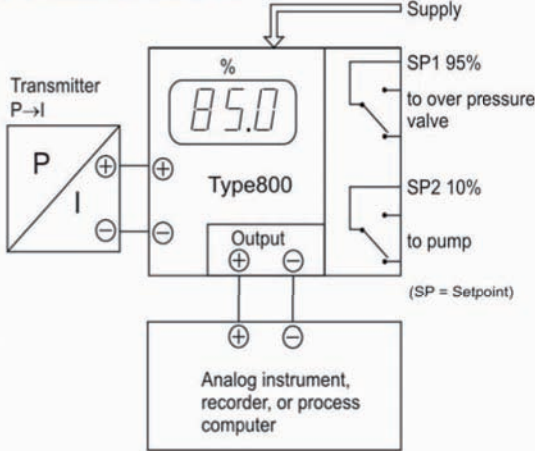
### Non-liability

The company Huba Control AG developed and tested the software "Mpro" with greatest care. However Huba Control AG is not responsible for any damages whatsoever, including loss of information, interruption of business, personal injury and/or any damage or consequential damage without limitation, incurred before, during or after the use of our products.

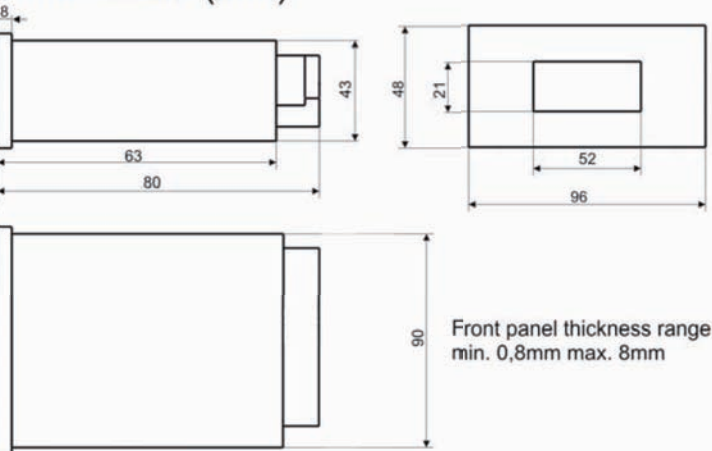
I. Technical Data

Input signal:	Type800-A: 0/4...20mA/0...1V and 10V, programmable Type800-T: Platinum-/nickel, with 100,200,500 or 1000Ω at 0°C (DIN 43 760), in 2- or 3-wire connection current signal=51Ω, voltage signal=1MΩ	
Input load / impedance:	24VDC max. 25mA	
2-Wire transmitter supply:	4-digit, LED red, 14.2 mm	
Display:	-1999...9999	
Display range:	±0.1% at 23°C ambient temperature	
Accuracy:	±0.1%	
Reproducibility:	zero drift: 30ppM/°C typical, gain drift: 25ppM/°C typical	
Temperature coefficient:	±0.1%	
Long-term stability:	-5 to +45°C	
Working temperature range:	95%, non-condensing	
Maximum humidity:	by computer programmable, see manual	
Range adjustment:	by computer programmable, see manual	
Zero-/Gain adjustment:	two, adjustable between 0,0 and 100,0%	
Option alarm contacts:	by computer programmable, factory set: ±5 digit, see manual	
Hysteresis:	floating change over contacts	
Contacts:	1A/230V resistive	
Max. contact load:	by button switches or computer programmable, see manual	
Change alarm contacts:	by button switches or computer programmable, see manual	
Display alarm contacts:	with two red LED-Lamps	
Mode of the alarm contacts:	with one red LED-Lamp	
Display unit:	0/4...20mA, galvanically isolated	
Option signal output:	500Ω	
Max. load:	>1MΩ typical	
Output impedance:	20 to 253VAC or DC	
Power supply:	4.5 to 7.0W at 230VAC	
Power supply load:	fulfilled	
CE-conformity:	plug-in screw terminals	
Terminals:	1 = supply voltage: AC~/DC(+)	
Terminal description:	3 = supply voltage: PE	2 = supply voltage: AC~/DC(-)
	5 = signal output (-)	4 = signal output (+)
	7 = not used	6 = signal output PE
	9 = signal input (-)	8 = 2-Wire transmitter supply +24V
	11 = signal input current (+)	10 = signal input: voltage (+)
	12 = alarm contact 1, n.o. contact	13 = alarm contact 1, c.o. contact
	14 = alarm contact 1, n.c. contact	15 = alarm contact 2, n.o. contact
	16 = alarm contact 2, c.o. contact	17 = alarm contact 2, n.c. contact
	2 mounting clamps	
	200g	
Mounting:	- Link cable for programming with a computer: P/N M2029LAP	
Weight:	- Other input signal	
Options:		
c.o.= change over		
n.o.= normally open		
n.c.= normally closed		

Pressure control:



Dimensions (mm):





J. User menu

Menu access:	press the button <b>(ENT)</b> and <b>(ESC)</b> for 4 seconds.		
Navigation within the menu:	buttons <b>(+)</b> and <b>(-)</b>		
Select a menu item:	button <b>(ENT)</b> (= ENTER)		
Leave a menu item:	button <b>(ESC)</b> (= ESCAPE)		
Change a value:	buttons <b>(+)</b> and <b>(-)</b>		
<b>(ENT) &amp; (ESC)</b>			
↓			
→SP_1	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b> **      *	<b>(+)/(–)</b> 1.053	Adjust setpoint 1
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→HSt1	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> 0.007	Adjust hysteresis 1
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→LED1	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> NOR / INR	LED 1 function normal/inverse
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→REL1	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> NOR / INR	Relay 1 function normal/inverse
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→SP_2	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> 1.053	Adjust setpoint 2
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→HSt2	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> 0.007	Adjust hysteresis 2
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→LED2	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> NOR / INR	LED 1 function normal/inverse
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→REL2	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> NOR / INR	Relay 1 function normal/inverse
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→Code	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> 0036	Change menu access code
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→d_2A	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> 0000	Fine-adjust display min. value
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→d_3A	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> 0000	Fine-adjust display max. value
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→d_2A	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> 0000	Fine-adjust current: output min. value
↓ <b>(+)</b> / ↑ <b>(–)</b>			
→d_3A	<b>(ENT)→</b> <b>←(ESC)/(ENT)</b>	<b>(+)/(–)</b> 0000	Fine-adjust current: output max. value



- \*\* Leave the menu without saving the value
- \* Leave the menu and save the value