

Meas. Type:	Analog signals 0-10V/0-20mA
Dimension Display:	On request
Display/ Rate:	3_Digits / 2.5 Meas./s
Display Type:	LED 12.5mm, red
Polarity:	Auto., "-" sign
Decimal Point:	Programmable
Protection Index:	IP50, DIN 40050
Operating Temp.:	-10°C...+50°C
Control Outputs:	2 Relays N/O or N/C
Limit Values:	Programmable
Relay Contact:	230V / 5A
Connector Type:	Lift clamp
Front Panel:	DIN 48 x 96
Mounting Depth:	D = 115mm
Panel Cut-out:	H x W = 44.5x90.5mm
Supply:	230V 50-60Hz 4.5VA
Meas. Ranges:	Set by jumper
Front keys:	Lockable by jumper
Sensor Supply:	24V / 30mA DC

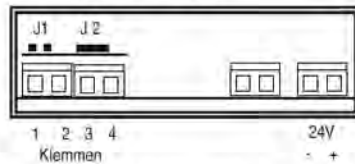
Measuring Ranges (and Functions)

Analog Signals

Accuracy: $\pm 0.1\%$, ± 1 Digit of meas.val.

I	0 - 1V	Ri 1 MOhm
I	0 - 10V	Ri 10 MOhm
II	0 - 20mA	Ri 10 Ohm
II	4 - 20mA	Ri 10 Ohm

Setting the Ranges



The Measuring Range is freely settable through jumpers at the right side of the device housing.

Jumper 1	Meas. Range	0 - 10V / 0 - 1V
Jumper 2	Meas. Range	0 - 20mA / 4 - 20mA

Attention: Either set Jumper 1 or Jumper 2. Other combinations may lead to serious damages of the device. Jumpers may not be changed while the device is being connected to power.

Operation Instruction:



- MOD** enter or leave programming mode
- ▲** increment selected digit
- ◀** select next digit / position
- SP1** display threshold value of SP1 relay

SP1 SP1 ON : SP1 relay contact is closed

Error indications:

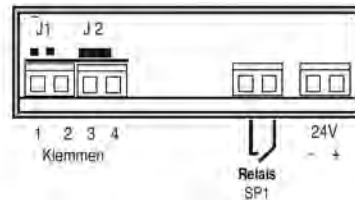
If the measuring signal exceeds or falls short of the allowed measuring range the LED display shows:

- "oooo" = Measuring range exceeded
- "uuuu" = Measuring range fallen short

Reset to default device setting:

Turn off power. Push simultaneously the leftmost three keys. Hold and turn on power. Release keys after 3 seconds.

Terminal Legend:



- Input 1:** In-HI Voltage range 0 - 10V
- Input 2:** In-HI Voltage range 0 - 1V
- Input 3:** In-HI Current Range 0 - 20mA/4 - 20mA
- Input 4:** GND for all measuring ranges
- Relay SP1:** Potential free switch

CE-Convention

Meets EMV convention (89/336/EWG) and the German EMV ruling by applying the Basic Standard EN 50080/ EN 50081. Meets the Low Voltage convention (73/23/EWG) by applying Product Standard EN 61010.

Safety Precautions

Employing these instruments: regulations for working with high voltage equipment, as well as any Professional Trade Association regulation for working with electrical appliances and installations have to be observed.

Guarantee Regulations:

Regulations by law apply for guarantee within 12 month. All equipment is factory tested and calibrated. Excluded from the guarantee are normal wear and tear, defects due to misuse, negligence, chemical exposure, mechanical stress as well as equipment, which has been modified, re-labeled or otherwise altered or if attempts to repair have been made. All guarantee claims are subject to our scrutiny and approval.

Programming:

The programmable Panel Meter 460-xxx with its integrated measuring routines can be controlled by a variety of parameters for the measuring cycle. New values can be entered as on a pocket calculator via keyboard, easy and comfortable.

This is how to select a measuring routine:

- Push MOD to enter programming mode
- Select routine number with increase key
- Push MOD again to confirm selection

To change value on selected routine:

- Enter desired value with increase key
- Select next position with shift key,
- decimal point of selected digit is blinking
- Select value with increase key
- Enter inserted value

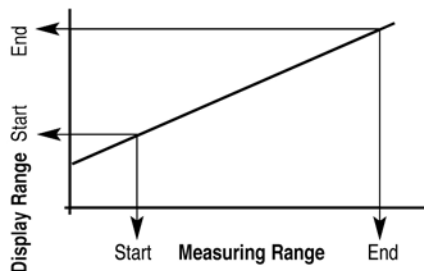
The device now works again in the measuring mode.



Integrated Programming Routines

Routine 1 – 4: Special Measuring Range only

With routines 1-4 the ration between the measuring range and the display range is set. Thereby the slope of the line between start and end values as well as a zero-offset value can be set. To excess these routines parameter 1 must be set in Routine 23.



Routine 1: Start of measuring range

Routine 2: Start of display range

Routine 3: End of measuring range

Routine 4: End of display range

Example: Measuring Range: 0 - 1000

Display Range: 0 - 780

- Routine 23 set to 1

- Routine 1 set to 000

- Routine 2 set to 000

- Routine 3 set to 1000

- Routine 4 set to 780

Routine 5: Setting 0

Routine 6: Setting the Decimal Point

Setting the position of the comma on the LED display

- 000 = No decimal point (default)

- 001 = 1.999

- 002 = 19.99

- 003 = 199.9

Routine 7: Setting the Switch Point SP 1 With this routine the desired threshold (display) value for SP 1 can be set.

Routine 8: Activating Switch Point SP 1 The switch point function can be turned on or off. 000 = Inactive, 001 = Active

Routine 11: Switch Point Hysteresis SP 1

Routine 13: Test Function Relay SP 1

Routine 15: Setting of relay function SP 2

Routine 17: ON- / OFF- delay of SP 1

When reaching the threshold value the relay function is time-delayed. The time-delay is proportional to the number of measuring cycles (max. 1999 cycles). Number of measuring cycles = Time-delay Default: 000

Routine 19: Viewing Maximum measuring value retention

Routine 20: Viewing Minimum measuring value retention The maximum and minimum measuring values since the last reset are continuously recorded and stored. These values can be reset while the min. or max. value is displayed by pushing and holding for at least 3 seconds keys SP 1 and SP 2 simultaneously

Routine 21: Rounding the last digit

The last digit can be rounded to 0, 2 or 5.

Setting: 000 = last digit will be set to 0

001 = last digit will be displayed (default)

002 = 2 / 4 / 6 / 8

003 = 0 / 5 / 0

Routine 22: Setting the number of measurements to generate an average value The average measuring value will be displayed.

Setting: 000 = no average value generation (default).

002 – 1999 number of measuring cycles used

to generate an average value

Routine 23: Selection of measuring method

Setting: 000 = standard measuring (default)

001 = special measuring range.

Routines 1 – 4 can be accessed

Routine 25:

Setting: 000 = no measurement output (default)

Routine 26: Measurement division by 10

Setting: 000 = no division (default)

001 = measuring value divided by 10

Service

We are glad that you decided on an instrument from our product range. If there are what so ever any defects, please send the instrument (postage paid) to your distributor.

For technical information contact us via E Mail
Info@schwille.de

Technical changes reserved.

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