## Programming diagram of the LIGHT MENU

**Measured value** (red/green LED)

**Value on the display** (green LED)

T Tare

**Password to access the menu**
range: 0...999

**Selection of the type of instrument**
Basic selection of input type, default „DEF" items of the selected type

**Selecting the instrument's mode**

| | |
|---|---|
| DC | DC voltmeter |
| PM | Process monitor |
| OHM | Ohmmeter |
| Pt | Thermometer for sensors Pt 100/500/1 000 |
| Cu | Thermometer for sensors Cu 50/100 |
| Ni | Thermometer for sensors Ni 1 000/10 000 |
| TC | Thermometer for thermocouples |
| DU | Display for linear potentiometer |

**Selection of the instrument measuring range**
Measuring ranges 30 mV and 60 mV have detection of broken input circuit „E. in."

**Range selection**

| | |
|---|---|
| i0.1 | ±90 mA |
| i0.2 | ±180 mA |
| 30n | ±30 mV |
| 60n | ±60 mV |
| u 1. | ±1 V |
| u20. | ±20 V |
| u40. | ±40 V |
| u80. | ±80 V |

**DC**

**Selection of the instrument measuring range**

**Range selection**

| | |
|---|---|
| U 2. | 0...2 V |
| U 5. | 0...5 V |
| U 10. | 0...10 V |
| I 0. | 0...20 mA |
| I 4. | 4...20 mA |
| E 4. | 4...20 mA (broken loop indication) |

**PM**

**Selection of the instrument measuring range**

**Range selection**

| | |
|---|---|
| 0.1 | 100 Ω |
| 03 | 300 Ω |
| 1.5 | 1,5 kΩ |
| 30 | 3 k Ω |
| 240 | 24 kΩ |
| 300 | 30 kΩ |

**Selection of the type of sensor connection**

**Connection**

| | |
|---|---|
| 2-u | 2-wire |
| 3-u | 3-wire |

**OHM**

**Selection of the instrument measuring range**

**Range selection**

| | |
|---|---|
| E0.1 | Pt 100 |
| E0.5 | Pt 500 |
| E 1.0 | Pt 1000 |
| U0.1 | Pt 100 - US |
| r.05 | Pt 50 - RU |
| r0.1 | Pt 100 - RU |

**Selection of the type of sensor connection**

**Connection**

| | |
|---|---|
| 2-u | 2-wire |
| 3-u | 3-wire |

**Pt**

**Selection of the instrument measuring range**

**Range selection**

| | |
|---|---|
| Cu1 | Cu 50/4280 |
| Cu2 | Cu 100/4280 |
| Cu3 | Cu 50/4260 |
| Cu4 | Cu 100/4260 |

**Selection of the type of sensor connection**

**Connection**

| | |
|---|---|
| 2-u | 2-wire |
| 3-u | 3-wire |

**Cu**

**Selection of the instrument measuring range**

**Range selection**

| | |
|---|---|
| S- 1 | Ni 1000/5000 |
| b- 1 | Ni 1000/6180 |
| S 10 | Ni 10000/5000 |
| b 10 | Ni 10000/6180 |

**Selection of the type of sensor connection**

**Connection**

| | |
|---|---|
| 2-u | 2-wire |
| 3-u | 3-wire |

**Ni**

**Selection of the instrument measuring range**

**Selection of thermoc.**

| | |
|---|---|
| b | T/C - B |
| E | T/C - E |
| J | T/C - J |
| K | T/C - K |
| n | T/C - N |
| r | T/C - R |
| S | T/C - S |
| t | T/C - T |
| L | T/C - L |

**Selection of the type of sensor connection**
Measuring ranges have detection of broken input circuit „E. in."

**Connection**

| | |
|---|---|
| in.1 | measuring C.J. at instrument brackets |
| in2. | measuring C. J. at instrument brackets with anti-series connected ref. TC |
| EH.1 | the entire measuring set is working under invaried and constant temperature |
| EH2. | when using compensation box |

For thermocoule type "B" the items CON. and C.J. T. are not available

**T/C**

**Setting display projection for minimum value of input signal**
range: ±1999

**Setting display projection for maximum value of input signal**
range: ±1999

**DC** **PM** **OHM** **DU**

**Setting projection of the decimal point**
The projection can be either with fixed decimal point as well as with the floating decimal point „FL.P."

**Selecting the menu type LIGHT/PROFI**
LIG. - simplified menu (minimal choice of settings)
PRO. - entire menu (for advanced users)

**Return to the manufacturer's settings**
Restores manufacturer's califrations and default setting of menu items (DEF)

**Návrat k uživatelskému nastavení přístroje**
Načtení uživatelského nastavení přístroje, tzn. nastavení které bylo uloženo v položce SER/RES/SAV.

**Calibration of input range, potentiometr slidind element is at the start position**
Before confirming the „YES" the sliging element must be still!

**Calibration of input range, potentiometr slidind element is at the end position**
Before confirming the „YES" the sliging element must be still!

**DU**

If the mode „DU" is not selected, these calibration menu items are left out

Only for mode „DU"

**Setting a new user password for the LIGHT menu**
range: 0...999

- range of the number code: 0...999
- universal passwords in the event of loss: „177"

**Displaying the instrument's SW version**
Type of instrument, SW version and currectly selected input (Mode) are projected on the display

## Programming diagram of the PROFI MENU

1428 ⊙ + ⊖ PAS. ⊖ 0 ⊖

**InP**
- Tare reseting: CLr. ⊖ C tA
- Selection of measuring rate: CFG. ⊖ n.PS. ⊖ ▲ 05 • 12 • 25 • 50 • 100 • 200 ▼
- Selection of "instrument" Typee: tYPE ⊖ ▲ dC • PM • • • trC • dU ▼
- Selection of instrument measuring range: nOd ⊖
  - DC: ▲ 30n • 60n • U 1 ▼
  - PM: ▲ 10 • 14 • E4 • U 2 • U 5 • U 10 ▼
  - OHM: ▲ 0.1 • 0.3 • 15 • 30 • 240 • 300 ▼
  - RTD: ▲ E0.1 • E05 • E 10 • U0.1 • r05 • r0.1 ▼
  - ▲ Cu1 • Cu2 • Cu3 • Cu4 ▼
  - ▲ n 15 • n 16 ▼
  - T/C: ▲ b • E • J • t • n • r • S • t • L ▼
  - COn. ⊖ ▲ 2-u • 3-u ▼
  - rAd. ⊖ 0 — Setting for RTD/OHM
  - LEA. ⊖ 0
  - COn. ⊖ ▲ In1 • In2 • EH1 • EH2 ▼
  - t.CJ. ⊖ 0 — Setting for T/C
- Selecting function of auxiliary input: EHt. ⊖ EH.1 ⊖ ▲ OFF • HLd • tAr. ▼

**CHA.**
- C.A. ⊖ SEt
  - Setting display projection for minimum value of input signal: nIn. ⊖ 1
  - Setting display projection for maximum value of input signal: nAX. ⊖ 1
  - FIL. ⊖ nOd. ⊖ ▲ nO • EXP. • rnd. ▼
    - Setting the digital filters*
    - Setting the constant: COn. ⊖ 0
  - FOr. ⊖ ▲ 000 • 00o • 0oo • ooo • FLP ▼ — Setting the decimal point

***Setting the digital filters**

| | |
|---|---|
| OFF | filters are off |
| EXP. | exponential filter |
| rnd. | rouding |
| COn. | setting of the calibration constant |

**OUt**
- diS. ⊖ bri. ⊖ ▲ 25 • 50 • 75 • 100 • AH • AM • AL ▼ — Selecting the display's brightness

**SEr.**
- Selecting Typee of menu: MnU. ⊖ ▲ L IG. • Pro ▼
- Restoring manufacturer's settings: rES. ⊖ Fir. ⊖ YES
  - USr.
  - SAv.
- Calibratin of the range (DU): CAL. ⊖ C.L0. ⊖ 0
  - C.H 1.
- Setting access passwords: nPA. ⊖ P.L 1. ⊖ 0
  - P.Pr.
- Identification of instrument: Id. ⊖ OMM 323Uni...

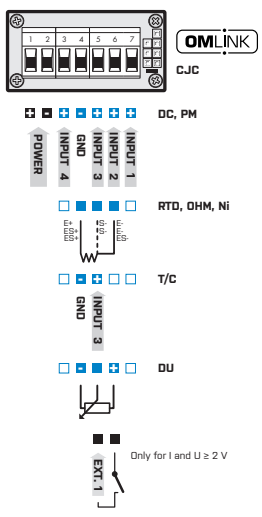
**ERROR STATEMENTS**

| ERROR | CAUSE | ELIMINATION |
|---|---|---|
| E.dU. | number is too small (large negative) to be displayed | change DP setting, channel constant |
| E.dO. | number is too large to be displayed | change DP setting, channel constant |
| E. IU. | Input quantity is smaller than permitted input quantity range | change input signal value or input (range) setting |
| E. IO. | Input quantity is larger than permitted input quantity range | change input signal value or input (range) setting |
| EHu. | a part of the instrument does not work properly | send the instrument for repair |
| E.EE. | data in EEPROM corrupted | perform restoration of manufacture setting, upon repeated error statement send instrument for repair |
| E.dt. | data in EEPROM outside the range | perform restoration of manufacture setting, upon repeated error statement send instrument for repair |
| E.CL. | memory was empty (presetting carried out) | upon repeated error statement send instrument for repair, possible failure in calibration |
| E. In. | disconnected input circuit | check wiring |

**!**

Upon delay exceeding 60 s the programming mode is automatically discontinued and the instrument itself restores the measuring mode

## CONNECTING AND CONTROLING OF INSTRUMENT


Power supply cord should not be near low voltage input signal leads.

Contactors, large electrical motors and other power elements should not be operated in the vicinity of the instrument.

Input signal leads (measured value) should be separated from all power devices.

Our instruments are extensively tested and they comply with relevant standrads for use in industrial environment, however, adhering to the above mentioned measures is stronlgy advised.

**!**

In „**RTD**" or „**OHM**" input with 2-wire connection it is necessary to link the unconnected inputs (No. 5 and 6) on the terminal block

### MEASURING RANGES - CONNECTION

| TYPE | INPUT 1 | INPUT 2 | INPUT 3 | INPUT 4 |
|---|---|---|---|---|
| **DC** | ±20/±40/±80 V | | ±30/60 mV/±1 V | ±90/±180 mA |
| **PM** | ±2/±5/±10 V | | | ±5/20 mA, 4...20 mA |
| **OHM** | 0...100 Ω/300 Ω/0...3 kΩ/0...24 kΩ/0...30 kΩ | | | |
| **RTD-PT** | Pt 50/Pt 100/Pt 1 000 | | | |
| **RTD-CU** | Cu 50/Cu 100 | | | |
| **RTD-NI** | Ni 1 000/Ni 10 000 | | | |
| **T/C** | | | J/K/T/E/B/S/R/N/L | |
| **DU** | Linear potentiometer (min. 500 Ω) | | | |

### EXTERNAL INPUT

| | DESCRIPTION | CONTROLS |
|---|---|---|
| **EXT. 1** | controlling input, its function is set in the menu (see. Menu > EX. 1) Only for inputs I and U ≥ 2 V | upon contact, terminal (No. 5 + 6) |

### MEASURING INPUT

| | | | | |
|---|---|---|---|---|
| Input | **DC** | Range | ±90 mA | < 1 V Input 4 |
| | | | ±180 mA | < 2 V Input 4 |
| | | | ±30 mV | > 10 MΩ Input 3 |
| | | | ±60 mV | > 10 MΩ Input 3 |
| | | | ±1 000 mV | > 10 MΩ Input 3 |
| | | | ±20 V | 1,25 MΩ Input 1 |
| | | | ±40 V | 1,25 MΩ Input 1 |
| | | | ±80 V | 1,25 MΩ Input 1 |
| | **PM** | Range | 0/4...20 mA | < 200 mV Input 4 |
| | | | ±2 V | 1,25 MΩ Input 1 |
| | | | ±5 V | 1,25 MΩ Input 1 |
| | | | ±10 V | 1,25 MΩ Input 1 |
| | **OHM** | Range | 0...100 Ω | |
| | | | 0...300 Ω | |
| | | | 0...1,5 kΩ | |
| | | | 0...3 kΩ | |
| | | | 0...24 kΩ | |
| | | | 0...30 kΩ (only 2-wire) | |
| | | Connection | 2- or 3-wire | |
| | **RTD** | Type | EU > Pt 50/100/1 000 Ω, with 3 850 ppm | -50°...450°C |
| | | | US > Pt 100 Ω, with 3 920 ppm/°C | -50°...450°C |
| | | | RU > 50/100 Ω with 3 910 ppm/°C | -200°...1 100°/450°C |
| | | Connection | 2- or 3-wire | |
| | **Ni** | Type | Ni 1 000/ Ni 10 000 with 5 000 ppm/°C | -50°...250°C |
| | | | Ni 1 000/ Ni 10 000 with 6 180 ppm/°C | -200°...250°C |
| | | Connection | 2- or 3-wire | |
| | **Cu** | Type | Cu 50/Cu 100 with 4 260 ppm/°C | -50°...200°C |
| | | | Cu 50/Cu 100 with 4 280 ppm/°C | -200°...200°C |
| | | Connection | 2- or 3-wire | |
| | **T/C** | Type | J (Fe-CuNi) | -200°...900°C |
| | | | K (NiCr-Ni) | -200°...1 300°C |
| | | | T (Cu-CuNi) | -200°...400°C |
| | | | E (NiCr-CuNi) | -200°...690°C |
| | | | B (PtRh30-PtRh6) | 300°...1 820°C |
| | | | S (PtRh10-Pt) | -50°...1 760°C |
| | | | R (Pt13Rh-Pt) | -50°...1 740°C |
| | | | N (Omegalloy) | -200°...1 300°C |
| | | | L (Fe-CuNi) | -200°...900°C |
| | **DU** | Lin. pot.supply | 2,5 VDC/6 mA, min. potentiometer resistance is 500 Ω | |

## TECHNICAL DATA

### INSTRUMENT'S ACCURACY

| | |
|---|---|
| TC | 50 ppm/°C |
| Accuracy | ±0,15 % of the range + 1 digit<br>±0,3 % of the range + 1 digit (T/C) |
| Accuracy of cold junction measurement: | ±1,5°C |
| Rate | 0,5...20 measurements/s |
| Overload capacity: | 10x (t < 30 ms) - not for > 200 V and 5 A; 2x |
| Resolution | 0,1°C (RTD), 1°C (T/C) |
| Data back-up | stores the measured value after the device has been switched off (EEPROM) |
| Digital filtres | exponencialn filter, rounding |
| Functions | Hold - "freezing the measured value", Tare (upon contact), Only for ranges I and U ≥ 2 V |
| External inputs | 1, with the possibility of assigning various functions in the instrument's menu |
| OM Link | Company communication interface for operating, setting and updating of instruments |
| Watch-dog | reset after 500 ms |
| Calibration | at 25°C and 40 % r.h. |

### PROJECTION

| | |
|---|---|
| Display | 1999, red or green 7-segment LED, digit height 9,1mm |
| Projection | ±1999 |
| Decimal point | setting - in menu |
| Brightness | 0%, 25%, 50%, 75%, 100% (selectable in the menu) or automatically at three steps Auto. H, Auto. M and Auto. L |

### POWER SUPPLY

| | |
|---|---|
| | 10...30 VDC/24 VAC, ±10 %, 0,2...1,5 VA, isolated |

### MECHANICAL PROPERTIES

| | |
|---|---|
| Material | Noryl GFN2 SE1, incombustible UL 94 V-I |
| Dimensions | 48 x 24 x 72 mm |
| Panel cut out | 43,5 x 22,5 mm |

### ENVIROMENTAL

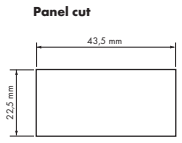
| | |
|---|---|
| Connection | terminal board, section < 1,5 mm² |
| Stabilization period | 15 minutes after switch on |
| Working temperature | -20°...60°C |
| Storage temperature | -20°...85°C |
| Cover | IP42 (front panel only) |
| Construction | security calss I |
| El. safety | EN 61010-1, A2 |
| Dielectric strength | 2,5 kVAC after 1 min between supply and input |
| Insulation resistance* | for pollution degree II, measuring cat. III. power supply > 300 V (PI) |
| EMC | EN 61326-1 (Industrial area) |

*PI - Primary insulation, DI - Double insulation

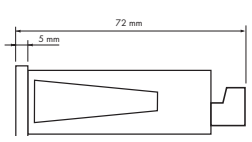
## MOUNTING AND DIMENSIONS

**Front view**


**Panel cut**




**Side view**



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