Programmable LED Indicator

No. 5715V102-UK
From serial number:
121496001 (B)
131077001 (D)

PR electronics A/S offers a wide range of analog and digital signal conditioning devices for industrial automation. The product range includes Isolators, Displays, Ex Interfaces, Temperature Transmitters, and Universal Devices. You can trust our products in the most extreme environments with electrical noise, vibrations and temperature fluctuations, and all products comply with the most exacting international standards. »Signals the Best« is the epitome of our philosophy - and your guarantee for quality.

PR electronics A/S offre une large gamme de produits pour le traitement des signaux analogiques et numériques dans tous les domaines industriels. La gamme de produits s’étend des transmetteurs de température aux afficheurs, des isolateurs aux interfaces SI, jusqu’aux modules universels. Vous pouvez compter sur nos produits même dans les conditions d’utilisation sévères, p.ex. bruit électrique, vibrations et fluctuations de température. Tous nos produits sont conformes aux normes internationales les plus strictes. Notre devise »SIGNALS the BEST« c’est notre ligne de conduite - et pour vous l’assurance de la meilleure qualité.

# PROGRAMMABLE LED INDICATOR

## 5715

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</tr>
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**WARNING**

This module is designed for connection to hazardous electric voltages. Ignoring this warning can result in severe personal injury or mechanical damage. To avoid the risk of electric shock and fire, the safety instructions of this manual must be observed and the guidelines followed. The specifications must not be exceeded, and the module must only be applied as described in the following. Prior to the commissioning of the module, this manual must be examined carefully. Only qualified personnel (technicians) should install this module.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

**WARNING**

Until the module is fixed, do not connect hazardous voltages to the module.

The following operations should only be carried out on a disconnected module and under ESD safe conditions:

- Troubleshooting the module.

Repair of the module must be done by PR electronics A/S only.

**SYMBOL IDENTIFICATION**

- **Triangle with an exclamation mark**: Warning / demand. Potentially lethal situations.

- **The CE mark**: Proves the compliance of the module with the essential requirements of the directives.
SAFETY INSTRUCTIONS

DEFINITIONS
Hazardous voltages have been defined as the ranges: 75 to 1500 Volt DC, and 50 to 1000 Volt AC.
Technicians are qualified persons educated or trained to mount, operate, and also troubleshoot technically correct and in accordance with safety regulations.
Operators, being familiar with the contents of this manual, adjust and operate the knobs or potentiometers during normal operation.

RECEIPT AND UNPACKING
Unpack the device without damaging it. The packing should always follow the device until this has been permanently mounted. Check at the receipt of the device whether the type corresponds to the one ordered.

ENVIRONMENT
Avoid direct sunlight, dust, high temperatures, mechanical vibrations and shock, as well as rain and heavy moisture. If necessary, heating in excess of the stated limits for ambient temperatures should be avoided by way of ventilation.
All modules fall under Installation Category II, Pollution Degree 1, and Insulation Class II.

MOUNTING
Only technicians who are familiar with the technical terms, warnings, and instructions in the manual and who are able to follow these should connect the module. Should there be any doubt as to the correct handling of the module, please contact your local distributor or, alternatively,

PR electronics A/S
www.prelectronics.com

Mounting and connection of the module should comply with national legislation for mounting of electric materials, i.e. wire cross section, protective fuse, and location. Descriptions of Input / Output and supply connections are shown in the block diagram and side label.
The following apply to fixed hazardous voltages-connected modules:

The max. size of the protective fuse is 10 A and, together with a power switch, it should be easily accessible and close to the module. The power switch should be marked with a label telling it will switch off the voltage to the module.

UL INSTALLATION REQUIREMENTS
For use on a flat surface of a type 1 enclosure
Use 60/75°C copper conductors only
Enclosure rating (face only)...................... Type 4X, UL50E
Max. ambient temperature ....................... 60°C
Max. wire size, pins 41...46 ..................... AWG 30-16
Max. wire size, others ........................... AWG 30-12
UL file number ...................................... E248256

CALIBRATION AND ADJUSTMENT
During calibration and adjustment, the measuring and connection of external voltages must be carried out according to the specifications of this manual. The technician must use tools and instruments that are safe to use.

NORMAL OPERATION
Operators are only allowed to adjust and operate modules that are safely fixed in panels, etc., thus avoiding the danger of personal injury and damage. This means there is no electrical shock hazard, and the module is easily accessible.

CLEANING
When disconnected, the module may be cleaned with a cloth moistened with distilled water.

LIABILITY
To the extent the instructions in this manual are not strictly observed, the customer cannot advance a demand against PR electronics A/S that would otherwise exist according to the concluded sales agreement.
FRONT AND BACK LAYOUT

Picture 1: Front of PReview 5715.

Picture 2: Back of PReview 5715.
PROGRAMMABLE LED INDICATOR
PREVIEW 5715

• 4-digit 14-segment LED display
• Input for mA, V, potentiometer, Ohm, RTD and TC
• 4 relays and analogue output
• Universal supply
• Programmable via front keys and PC

Application
• Display for digital readout of current / voltage / resistance / temperature or 3-wire potentiometer signals.
• Process control with 4 pairs of potential-free change-over relays and analogue output.
• For tank level control, with the possibility of customer linearisation ensuring correct level measurement and control in non-linear tanks.

Technical characteristics
• 4-digit LED indicator with 13.8 mm 14-segment characters. Max. display readout -1999...9999 with programmable decimal point and relay ON / OFF indication.
• All standard operational parameters can be adjusted to any application by way of the front function keys. When programming is carried out by way of a PC and the configuration program PReset, additional configuration options are available, such as customer-defined linearisation and special input signals.
• Help texts in eight languages can be selected via a menu item.
• A menu item allows the user to minimise the installation test time for the relay outputs by activating/deactivating each relay independently of the input signal.

Mounting / installation
• To be mounted in panel front. The included rubber packing must be mounted between the panel cutout hole and the display front to obtain a protection degree of IP65 (type 4X). For extra protection in extreme environments, PReview 5715 can be delivered with a specially designed splash-proof cover as accessory.
APPLICATIONS

Input signals:

Output signals:

Supply:

Input signals:

Output signals:

Supply:

21.6...253 VAC
or
19.2...300 VDC
Electrical specifications

Specifications range:
-20°C to +60°C

Common specifications:
Supply voltage, universal ..................................... 21.6...253 VAC, 50...60 Hz or 19.2...300 VDC

Consumption:

<table>
<thead>
<tr>
<th>Type</th>
<th>Internal consumption</th>
<th>Max. consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>5715B</td>
<td>3.0 W</td>
<td>3.3 W</td>
</tr>
<tr>
<td>5715D</td>
<td>3.5 W</td>
<td>3.8 W</td>
</tr>
</tbody>
</table>

Isolation voltage, test / operation .................... 2.3 kVAC / 250 VAC
Signal / noise ratio ........................................ Min. 60 dB (0...100 kHz)
Communications interface .................................. USB Loop Link
Response time (0...90%, 100...10%):
  - Temperature input ..................................... < 1 s
  - Current / voltage input ................................ < 400 ms
Calibration temperature .................................... 20...28°C

Accuracy, the greater of general and basic values:

<table>
<thead>
<tr>
<th>Input type</th>
<th>Absolute accuracy</th>
<th>Temperature coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>≤ ±0.1% of reading</td>
<td>≤ ±0.01% of reading / °C</td>
</tr>
</tbody>
</table>
### Basic values

<table>
<thead>
<tr>
<th>Input type</th>
<th>Basic accuracy</th>
<th>Temperature coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>mA</td>
<td>(\leq \pm 4 \mu A)</td>
<td>(\leq \pm 0.4 \mu A / ^\circ C)</td>
</tr>
<tr>
<td>Volt</td>
<td>(\leq \pm 20 \mu V)</td>
<td>(\leq \pm 2 \mu V / ^\circ C)</td>
</tr>
<tr>
<td>Pt100</td>
<td>(\leq \pm 0.2^\circ C)</td>
<td>(\leq \pm 0.01^\circ C / ^\circ C)</td>
</tr>
<tr>
<td>Linear resistance</td>
<td>(\leq \pm 0.1 \Omega)</td>
<td>(\leq \pm 0.01 \Omega / ^\circ C)</td>
</tr>
<tr>
<td>Potentiometer</td>
<td>(\leq \pm 0.1 \Omega)</td>
<td>(\leq \pm 0.01 \Omega / ^\circ C)</td>
</tr>
<tr>
<td>TC type: E, J, K, L, N, T, U</td>
<td>(\leq \pm 1^\circ C)</td>
<td>(\leq \pm 0.05^\circ C / ^\circ C)</td>
</tr>
<tr>
<td>TC type: R, S, W3, W5, LR</td>
<td>(\leq \pm 2^\circ C)</td>
<td>(\leq \pm 0.2^\circ C / ^\circ C)</td>
</tr>
<tr>
<td>TC type: B 85...200°C</td>
<td>(\leq \pm 4^\circ C)</td>
<td>(\leq \pm 0.4^\circ C / ^\circ C)</td>
</tr>
<tr>
<td>TC type: B 200...1820°C</td>
<td>(\leq \pm 2^\circ C)</td>
<td>(\leq \pm 0.2^\circ C / ^\circ C)</td>
</tr>
</tbody>
</table>

EMC immunity influence: \(< \pm 0.5\%\) of reading

#### Auxiliary supply:
- 2-wire supply (pin 46...45) \(25...15 VDC / 0...20 mA / 30 mA\) nom.
- IEC 60068-2-6 Test FC
- 2...13.2 Hz \(\pm 1\ mm\)
- 13.2...100 Hz \(\pm 0.7\ g\)
- Wire size, pin 41...46 (max.) \(1 \times 1.5 \ mm^2\) stranded wire
- Wire size, others (max.) \(1 \times 2.5 \ mm^2\) stranded wire
- Relative humidity: \(< 95\%\) RH (non cond.)

#### Dimensions (HxBxD):
- \(48 \times 96 \times 120\ mm\)

#### Cutout dimensions:
- \(44.5 \times 91.5\ mm\)

#### Protection degree (mounted in panel):
- IP65 / Type 4X, UL50E

#### Weight:
- \(260\ g\)

### RTD, linear resistance and potentiometer input:

<table>
<thead>
<tr>
<th>Input type</th>
<th>Min. value</th>
<th>Max. value</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt10...Pt1000</td>
<td>-200°C</td>
<td>+850°C</td>
<td>IEC 60751</td>
</tr>
<tr>
<td>Ni50...Ni1000</td>
<td>-60°C</td>
<td>+250°C</td>
<td>DIN 43760</td>
</tr>
<tr>
<td>Cu10...Cu100</td>
<td>-200°C</td>
<td>+260°C</td>
<td>(\alpha = 0.00427)</td>
</tr>
<tr>
<td>Lin. R</td>
<td>0 Ω</td>
<td>10000 Ω</td>
<td>-</td>
</tr>
<tr>
<td>Potentiometer</td>
<td>10 Ω</td>
<td>100 kΩ</td>
<td>-</td>
</tr>
</tbody>
</table>
Input for RTD types:
Pt10, Pt20, Pt50, Pt100, Pt200, Pt250, Pt300, Pt400, Pt500, Pt1000
Ni50, Ni100, Ni120, Ni1000, Cu10, Cu20, Cu50, Cu100
Cable resistance per wire, RTD (max.)............. 50 Ω
Sensor current, RTD................................................ Nom. 0.2 mA
Effect of sensor cable resistance
(3- / 4-wire), RTD..................................................... < 0.002 Ω / Ω
Sensor error detection, RTD................................. Yes
Short circuit detection, RTD................................. < 15 Ω

TC input:

<table>
<thead>
<tr>
<th>Type</th>
<th>Min. value</th>
<th>Max. value</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>+0°C</td>
<td>+1820°C</td>
<td>IEC 60584-1</td>
</tr>
<tr>
<td>E</td>
<td>-100°C</td>
<td>+1000°C</td>
<td>IEC 60584-1</td>
</tr>
<tr>
<td>J</td>
<td>-100°C</td>
<td>+1200°C</td>
<td>IEC 60584-1</td>
</tr>
<tr>
<td>K</td>
<td>-180°C</td>
<td>+1372°C</td>
<td>IEC 60584-1</td>
</tr>
<tr>
<td>L</td>
<td>-200°C</td>
<td>+900°C</td>
<td>DIN 43710</td>
</tr>
<tr>
<td>N</td>
<td>-180°C</td>
<td>+1300°C</td>
<td>IEC 60584-1</td>
</tr>
<tr>
<td>R</td>
<td>-50°C</td>
<td>+1760°C</td>
<td>IEC 60584-1</td>
</tr>
<tr>
<td>S</td>
<td>-50°C</td>
<td>+1760°C</td>
<td>IEC 60584-1</td>
</tr>
<tr>
<td>T</td>
<td>-200°C</td>
<td>+400°C</td>
<td>IEC 60584-1</td>
</tr>
<tr>
<td>U</td>
<td>-200°C</td>
<td>+600°C</td>
<td>DIN 43710</td>
</tr>
<tr>
<td>W3</td>
<td>0°C</td>
<td>+2300°C</td>
<td>ASTM E988-90</td>
</tr>
<tr>
<td>W5</td>
<td>0°C</td>
<td>+2300°C</td>
<td>ASTM E988-90</td>
</tr>
<tr>
<td>LR</td>
<td>-200°C</td>
<td>+800°C</td>
<td>GOST 3044-84</td>
</tr>
</tbody>
</table>

Cold junction compensation (CJC)
via internal sensor................................. ±(2.0°C + 0.4°C * Δt)
Δt = internal temperature - ambient temperature
Sensor error detection, all TC types........... Yes
Sensor error current:
when detecting........................................... Nom. 2 μA
else ......................................................... 0 μA

Current input:
Measurement range................................. 0...20 mA
Programmable measurement ranges............ 0...20 and 4...20 mA
Input resistance................................. Nom. 20 Ω + PTC 25 Ω
Sensor error detection:
loop break 4...20 mA................................. Yes
**Voltage input:**
Measurement range: ........................................... 0...12 VDC
Programmable measurement ranges: 0...1, 0.2...1, 0...10 and 2...10 VDC
Input resistance: ........................................... Nom. 10 MΩ

**Outputs:**

**Display:**
Display readout: ........................................... -1999...9999 (4 digits)
Decimal point: .................................................. Programmable
Digit height: ................................................... 13.8 mm
Display updating: ........................................... 2.2 times / s
Input outside input range is indicated by: ...................... Explanatory text

**Current output:**
Signal range (span): ........................................... 0...20 mA
Programmable signal ranges: 0...20, 4...20, 20...0 and 20...4 mA
Load (max.): ................................................... 20 mA / 800 Ω / 16 VDC
Load stability: .................................................. ≤ 0.01% of span / 100 Ω
Sensor error detection: ....................................... 23 / 0 / 3.5 mA / none
NAMUR NE 43 Up- / Downscale: ................................ 23 mA / 3.5 mA
Output limitation:
on 4...20 and 20...4 mA signals: ....................... 3.8...20.5 mA
on 0...20 and 20...0 mA signals: ....................... 0...20.5 mA
Current limit: .................................................. ≤ 28 mA

**Relay outputs:**
Relay function: .................................................. Setpoint
Hysteresis: ..................................................... 0...100%
On and Off delay: ........................................... 0...3600 s
Sensor error detection: ....................................... Make / Break / Hold
Max. voltage: .................................................. 250 VRMS
Max. current: ................................................... 2 A / AC
Max. AC power: .................................................. 500 VA
Max. current at 24 VDC: .................................... 1 A

**Marine approval:**
Det Norske Veritas, Ships & Offshore: Standard for Certification No. 2.4

**Observed authority requirements:**
EMC 2004/108/EC: ........................................... EN 61326-1
LVD 2006/95/EC: ............................................. EN 61010-1
UL, Standard for Safety: .................................... UL 508
EAC TR-CU 020/2011: ........................................ EN 61326-1
## Sensor error detection inside and outside range

### Sensor error check in 5715 variants:

<table>
<thead>
<tr>
<th>Variant</th>
<th>Configuration</th>
<th>Sensor error detection:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5715B</td>
<td>ERR1, ERR2, ERR3 and ERR4 = NONE</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>Else:</td>
<td>ON</td>
</tr>
<tr>
<td>5715D</td>
<td>ERR1, ERR2, ERR3 and ERR4=NONE, O.ERR=NONE.</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>Else:</td>
<td>ON</td>
</tr>
</tbody>
</table>

### Outside range readout (IN.LO, IN.HI):
If the valid range of the A/D converter or the polynomial is exceeded

<table>
<thead>
<tr>
<th>Input</th>
<th>Range</th>
<th>Readout</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLT</td>
<td>0...1 V / 0,2...1 V</td>
<td>IN.LO</td>
<td>&lt; -25 mV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN.HI</td>
<td>&gt; 1,2 V</td>
</tr>
<tr>
<td></td>
<td>0...10 V / 2...10 V</td>
<td>IN.LO</td>
<td>&lt; -25 mV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN.HI</td>
<td>&gt; 12 V</td>
</tr>
<tr>
<td>CURR</td>
<td>0...20 mA / 4...20 mA</td>
<td>IN.LO</td>
<td>&lt; -1,05 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN.HI</td>
<td>&gt; 25,05 mA</td>
</tr>
<tr>
<td>POTM</td>
<td></td>
<td>IN.LO</td>
<td>&lt; -0,5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN.HI</td>
<td>&gt; 100,5%</td>
</tr>
<tr>
<td>TEMP</td>
<td>TC / RTD</td>
<td>IN.LO</td>
<td>&lt; temperature range -2°C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN.HI</td>
<td>&gt; temperature range +2°C</td>
</tr>
<tr>
<td>LIN R</td>
<td>0...800 ohm</td>
<td>IN.LO</td>
<td>&lt; 0 ohm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN.HI</td>
<td>&gt; 1 kohm</td>
</tr>
<tr>
<td></td>
<td>0...10 kohm</td>
<td>IN.LO</td>
<td>&lt; 0 ohm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN.HI</td>
<td>&gt; 15 kohm</td>
</tr>
</tbody>
</table>

### Sensor error detection (SE.BR, SE.SH):

<table>
<thead>
<tr>
<th>Input</th>
<th>Range</th>
<th>Readout</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURR</td>
<td>Loop break (4..20mA)</td>
<td>SE.BR</td>
<td>&lt;= 3,6 mA; &gt; = 21 mA</td>
</tr>
<tr>
<td>TEMP</td>
<td>TC</td>
<td>SE.BR</td>
<td>&gt; ca. 750 kohm / (1,25 V)</td>
</tr>
<tr>
<td></td>
<td>RTD, 2-, 3- &amp; 4-wire</td>
<td>SE.BR</td>
<td>&gt; 12 kohm</td>
</tr>
<tr>
<td></td>
<td>No SE.SH for Cuxx, Pt10, Pt20 &amp; Pt50</td>
<td>SE.SH</td>
<td>&lt; 15 ohm</td>
</tr>
<tr>
<td>LIN R</td>
<td>0...800 ohm</td>
<td>SE.BR</td>
<td>&gt; 875 ohm</td>
</tr>
<tr>
<td></td>
<td>0...10 kohm</td>
<td>SE.BR</td>
<td>&gt; 12 kohm</td>
</tr>
</tbody>
</table>

### Display readout below min. / above max. (-1.9.9.9, 9.9.9.9):

<table>
<thead>
<tr>
<th>Input</th>
<th>Range</th>
<th>Readout</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURR</td>
<td>All</td>
<td>-1.9.9.9</td>
<td>Display readout &lt; -1999</td>
</tr>
<tr>
<td>VOLT</td>
<td></td>
<td>9.9.9.9</td>
<td>Display readout &gt; 9999</td>
</tr>
<tr>
<td>POTM</td>
<td></td>
<td>-1.9.9.9</td>
<td>Display readout &lt; -1999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.9.9.9</td>
<td>Display readout &gt; 9999</td>
</tr>
</tbody>
</table>

### Readout at hardware error

! Error indications in the display blink once a second. The help text explains the error

<table>
<thead>
<tr>
<th>Error search</th>
<th>Readout</th>
<th>Error cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test of internal communication uC / ADC</td>
<td>HW.ER</td>
<td>Permanent error in ADC</td>
</tr>
<tr>
<td>Test of internal CJC sensor</td>
<td>CJ.ER</td>
<td>CJC sensor defect</td>
</tr>
<tr>
<td>Check-sum test of the configuration in RAM</td>
<td>RA.ER</td>
<td>Error in RAM</td>
</tr>
<tr>
<td>Check-sum test of the configuration in EEPROM</td>
<td>EE.ER</td>
<td>Error in EEPROM</td>
</tr>
</tbody>
</table>
CONNECTIONS

Supply:

Inputs:

RTD & Lin R, 2-wire

RTD & Lin R, 3-wire

RTD & Lin R, 4-wire

TC

2-wire transmitter

Current

Voltage

Potentiometer

Output:

Current

Relays

Relays
1.0 = Default state
1.1 = Only if password-protected
1.2 = Only if FastSet is enabled
1.3 = Setpoint adjustment and relay test disabled at password 5000...9999.
1.4 = Only for special configuration via PC
1.5 = Not valid for these input signals: Potentiometer, 0...20 mA and voltage
1.6 = Only if input signal is temperature
1.7 = No analogue output
1.8 = In default state press and hold ▲ or ▼ to change display intensity between damped and full (7 = full intensity)
If no key is activated for 2 minutes, the display returns to default state 1.0 without saving configuration changes.

- Increase value / choose next parameter
- Decrease value / choose previous parameter
- Accept the chosen parameter and go to the next menu

Hold ☑ Back to previous menu / return to default state 1.0 without saving
SCROLLING HELP TEXTS

Display in default state xxxx, hardware error:
- SE.BR --> SENSOR WIRE BREAKAGE
- SE.SH --> SENSOR SHORT CIRCUIT
- IN.HI --> INPUT OVERRANGE
- IN.LO --> INPUT UNDERRANGE
- 9.9.9.9 --> DISPLAY OVERRANGE
- -1.9.9.9 --> DISPLAY UNDERRANGE
- HW.ER --> HARDWARE ERROR
- EE.ER --> EEPROM ERROR - CHECK CONFIGURATION
- RA.ER --> RAM MEMORY ERROR
- CJ.ER --> CJC SENSOR ERROR

Fastset (Enabled):
- F.SET
- REL1 --> FAST SET MENU -
- REL2 --> SELECT RELAY
- REL3
- REL4

- SETP
  xxxx --> RELAY SETPOINT - PRESS OK TO SAVE

Fastset (Disabled):
- SETP
  xxxx --> RELAY SETPOINT - READ ONLY

Configuration menus:
- ADV
  YES --> ENTER ADVANCED SETUP MENU?
  NO

- PASS
  xxxx --> SET CORRECT PASSWORD

- IN
  CLIN* --> TEXT ENTERED BY USER IN PRESET
  CURR --> CURRENT INPUT
  VOLT --> VOLTAGE INPUT
  POTM --> POTENTIOMETER INPUT
  LIN.R --> LINEAR RESISTANCE INPUT
  TEMP --> TEMPERATURE SENSOR INPUT

- RANG
  When current selected:
  0-20 --> INPUT RANGE IN mA
  4-20 --> INPUT RANGE IN mA

- RANG
  When voltage selected:
  0-10 --> INPUT RANGE IN Volt
  2-10 --> INPUT RANGE IN Volt
  0.0-1 --> INPUT RANGE IN Volt
  0.2-1 --> INPUT RANGE IN Volt

- DEC.P
  1111 --> DECIMAL POINT POSITION
  111.1 --> DECIMAL POINT POSITION
  11.11 --> DECIMAL POINT POSITION

- LR.LO
  xxxx --> SET RESISTANCE VALUE LOW

- LR.HI
  xxxx --> SET RESISTANCE VALUE HIGH

- DI.LO
  xxxx --> DISPLAY READOUT LOW

- DI.HI
  xxxx --> DISPLAY READOUT HIGH

- REL.U
  PERC --> SET RELAY IN PERCENTAGE
  DISP --> SET RELAY IN DISPLAY UNITS

- TYPE
  CU --> SELECT CU SENSOR TYPE
  PT --> SELECT PT SENSOR TYPE
  NI --> SELECT NI SENSOR TYPE
  TC --> SELECT TC SENSOR TYPE
  CU.TY
  10 --> SELECT CU SENSOR TYPE
  20 --> SELECT CU SENSOR TYPE
  50 --> SELECT CU SENSOR TYPE
  100 --> SELECT CU SENSOR TYPE
  PT.TY
  10 --> SELECT PT SENSOR TYPE
  20 --> SELECT PT SENSOR TYPE
  50 --> SELECT PT SENSOR TYPE
  100 --> SELECT PT SENSOR TYPE
  200 --> SELECT PT SENSOR TYPE
  250 --> SELECT PT SENSOR TYPE
  300 --> SELECT PT SENSOR TYPE
  400 --> SELECT PT SENSOR TYPE
  500 --> SELECT PT SENSOR TYPE
  1000 --> SELECT PT SENSOR TYPE
  NI.TY
  50 --> SELECT NI SENSOR TYPE
  100 --> SELECT NI SENSOR TYPE
  120 --> SELECT NI SENSOR TYPE
  1000 --> SELECT NI SENSOR TYPE

- CONN
  When Cu, Pt and Ni sensor is selected
  2W --> SELECT 2-WIRE SENSOR CONNECTION
  3W --> SELECT 3-WIRE SENSOR CONNECTION
  4W --> SELECT 4-WIRE SENSOR CONNECTION

- TC.TY
  TC. B --> SELECT TC SENSOR TYPE
  TC. E --> SELECT TC SENSOR TYPE
  TC. J --> SELECT TC SENSOR TYPE
  TC. K --> SELECT TC SENSOR TYPE
  TC. L --> SELECT TC SENSOR TYPE
  TC. N --> SELECT TC SENSOR TYPE
  TC. R --> SELECT TC SENSOR TYPE
  TC. T --> SELECT TC SENSOR TYPE
  TC. U --> SELECT TC SENSOR TYPE
  TC. W3 --> SELECT TC SENSOR TYPE
  TC. W5 --> SELECT TC SENSOR TYPE
  TC. LR --> SELECT TC SENSOR TYPE

- DEC.P
  When temperature selected
  1111 --> DECIMAL POINT POSITION
  111.1 --> DECIMAL POINT POSITION

- UNIT
  °C --> DISPLAY AND RELAY SETUP IN CELSIUS
  °F --> DISPLAY AND RELAY SETUP IN FAHRENHEIT
**REL1**
- **SET** --> ENTER RELAY 1 SETUP
- **SKIP** --> SKIP RELAY 1 SETUP
- **OFF** --> RELAY 1 DISABLED

**SETP**
- xxx --> RELAY SETPOINT

**ACT1**
- **INCR** --> ACTIVATE AT INCREASING SIGNAL
- **DECR** --> ACTIVATE AT DECREASING SIGNAL

**HYS1**
- xxx --> RELAY HYSTERESIS

**ERR1**
- **HOLD** --> HOLD RELAY AT ERROR
- **ACTI** --> ACTIVATE RELAY AT ERROR
- **DEAC** --> DEACTIVATE RELAY AT ERROR
- **NONE** --> UNDEFINED STATUS AT ERROR

**ON.DE**
- xxx --> RELAY ON-DELAY IN SECONDS

**OFF.DE**
- xxx --> RELAY OFF-DELAY IN SECONDS

**RELX (X = 2...4)**
- **SET** --> ENTER RELAY 2 SETUP
- **SKIP** --> SKIP RELAY 2 SETUP
- **OFF** --> RELAY 2 DISABLED

**SETP**
- xxx --> RELAY SETPOINT

**ACTX (X = 2...4)**
- **INCR** --> ACTIVATE AT INCREASING SIGNAL
- **DECR** --> ACTIVATE AT DECREASING SIGNAL

**HYSX (X = 2...4)**
- xxx --> RELAY HYSTERESIS

**ERRX (X = 2...4)**
- **HOLD** --> HOLD RELAY AT ERROR
- **ACTI** --> ACTIVATE RELAY AT ERROR
- **DEAC** --> DEACTIVATE RELAY AT ERROR
- **NONE** --> UNDEFINED STATUS AT ERROR

**ON.DE**
- xxx --> RELAY ON-DELAY IN SECONDS

**OFF.DE**
- xxx --> RELAY OFF-DELAY IN SECONDS

**A.OUT**
- **0-20** --> OUTPUT RANGE IN mA
- **4-20** --> OUTPUT RANGE IN mA
- **20-0** --> OUTPUT RANGE IN mA
- **20-4** --> OUTPUT RANGE IN mA

**O.LO**
- xxx --> DISPLAY VALUE FOR OUTPUT LOW

**O.HI**
- xxx --> DISPLAY VALUE FOR OUTPUT HIGH

**O.ERR**
- **23 mA** --> NAMUR NE43 UPScale AT ERROR
- **3.5 mA** --> NAMUR NE43 DOWNScale AT ERROR
- **0 mA** --> DOWNScale AT ERROR
- **NONE** --> UNDEFINED OUTPUT AT ERROR

**RESP**
- xxx --> ANALOGUE OUTPUT RESPONSE TIME IN SECONDS

**E.PAS**
- **NO** --> ENABLE PASSWORD PROTECTION
- **YES** -->

**N.PAS**
- xxx --> SELECT NEW PASSWORD

**ADV MENU:**
- **LANG** --> ENTER LANGUAGE SETUP
- **DISP** --> ENTER DISPLAY SETUP
- **CAL** --> PERFORM PROCESS CALIBRATION

**HLPT**
- **DE** --> DE - WAehLE DEUTSCHEN HILFETEXT
- **DK** --> DK - VAELG DANSK HJAELETEKST
- **ES** --> ES - SELECCIONAR TEXTO DE AYUDA EN ESPANOL
- **FR** --> FR - SELECTION TEXTE D'AIDE EN FRANCAIS
- **IT** --> IT - SELEZIONARE TESTI DI AITU ITALIANI
- **SE** --> SE - VALJ SVENSK HJALPTEXT
- **UK** --> UK - SELECT ENGLISH HELPTEXT
- **CZ** --> CZ - VYBER CESKOU NAPOVEDU

**LIGHT**
- xxx --> ADJUST DISPLAY LIGHT INTENSITY

**CAL.LO**
- **YES** --> CALIBRATE INPUT LOW TO PROCESS VALUE?
- **NO** -->

**CAL.HI**
- **YES** --> CALIBRATE INPUT HIGH TO PROCESS VALUE?
- **NO** -->

**VAL.L**
- xxx --> SET VALUE FOR LOW CALIBRATION POINT

**VAL.H**
- xxx --> SET VALUE FOR HIGH CALIBRATION POINT

**USE.C**
- **YES** --> USE PROCESS CALIBRATED VALUES?
- **NO** -->
CONFIGURATION / OPERATING
THE FUNCTION KEYS

Documentation for the routing diagram

In general:

When configuring the display you are guided through all parameters, allowing you to choose the settings which fit the application. For each menu there is a scrolling help text which is automatically shown in the display if no key has been activated for appr. 5 seconds.

Configuration is carried out by way of the 3 function keys ▲ ◐ and OK. ▲ will increase the numerical value or choose the next parameter. ◐ will decrease the numerical value or choose the previous parameter. OK will accept the chosen value and go to the next menu. If a function does not exist in the hardware, all parameters belonging to that function will be skipped in order to make configuration as simple as possible. The configuration will not be saved until the end of the menu structure when the display shows ----.

Pressing and holding OK will return to the previous menu or go back to the default state (1.0) without saving the changed values or parameters.

If no key is activated for 2 minutes, the display will return to the default state (1.0) without saving the changed values or parameters.

Further explanations:

Fast setpoint adjustment and relay test: These menus are interactive and allow you to adjust the setpoints while the display is measuring the input signal. The diodes will then indicate when the relays change state, thus easing the setpoint adjustment in many situations. By activating ▲ and ◐ simultaneously, a relay test will be initiated and the relay will change state. The setpoint adjustment will be saved by a quick press of OK. Holding down OK for more that 0.5 seconds will return the display to the default state (1.0) without changing the setpoint.

Password protection: Using a password will block access to the menu and parameters. There are two levels of password protection. Passwords between 0000 and 4999 allow access to the fast setpoint adjustment and relay test menus (using this password blocks access to all other parts of the menu). Passwords between 5000 and 9999 block access to all parts of the menu, fast setpoint and relay test (current setpoint is still shown). Default password 2008 allows access to all configuration menus.
PROGRAMMING VIA PC

By way of PRerset, a simple yet sophisticated PC program, all operational parameters in the 5715 can be quickly configured to suit any application. Furthermore, the PC configuration allows you to set up a customer-defined input type for the input signals current, voltage, resistance and potentiometer. This input type can be defined with special input spans, e.g. 5...12 mA, and customer-defined linearisation with or without offset. The customer-defined input type is saved in the 5715 in the input menu C.LIN. If the display is later configured by way of the front keys for e.g. temperature input, the input type C.LIN containing all the original parameters can be subsequently selected. The PC configuration is sent to the display by way of the communications interface USB Loop Link.

Graphic depiction of the relay function setpoint
Displays  Programmable displays with a wide selection of inputs and outputs for display of temperature, volume and weight, etc. Feature linearization, scaling, and difference measurement functions for programming via PReset software.

Ex interfaces  Interfaces for analog and digital signals as well as HART® signals between sensors / I/P converters / frequency signals and control systems in Ex zone 0, 1 & 2 and for some devices in zone 20, 21 & 22.

Isolation  Galvanic isolators for analog and digital signals as well as HART® signals. A wide product range with both loop-powered and universal isolators featuring linearization, inversion, and scaling of output signals.

Temperature  A wide selection of transmitters for DIN form B mounting and DIN rail devices with analog and digital bus communication ranging from application-specific to universal transmitters.

Universal  PC or front programmable devices with universal options for input, output and supply. This range offers a number of advanced features such as process calibration, linearization and auto-diagnosis.