Front and back layout

Picture 1: Front of PReview 5714.

Programmable LED indicator
PReview 5714

- 4-digit 14 segment LED indicator
- Input for mA, V, Pt100, TC and potentiometer
- 2 relays and analogue output
- Universal voltage supply
- Front key programmable

Application:
- Display for digital readout of current, voltage, temperature or potentiometer signals.
- Process control with 2 potential free relays and/or analogue output.
- For local readout in extreme wet atmospheres with a special designed splash-proof cover.

Technical characteristics:
- 4-digit LED indicator with 13.8 mm 14 segment characters. Max. display readout -1999...9999 with programmable decimal point, relay ON/OFF-indication.
- With the function front keys all operational parameters can be adjusted to any application.
- PReview 5714 is available fully-configured acc. to specifications ready for process control and visualisation.
- In versions with relay outputs the user can minimise the installation test time by activating/deactivating each relay independent of the input signal.

Mounting:
- To be mounted in board front panel. An included rubber packing must be mounted between the panel cutout hole and the display front to obtain IP65 (NEMA 4) tightness. PReview 5714 can be delivered with a special designed splash-proof cover as accessory to obtain IP67 tightness.
**Input**
- 2-wire transmitter
- Current, mA
- Voltage
- Pt100 sensor
- TC sensor
- Potentiometer

**Output**
- 4...20 mA
- Relay 1
- Relay 2

**Order: 5714**

<table>
<thead>
<tr>
<th>Type</th>
<th>Version</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>5714</td>
<td>Standard</td>
<td>A English: UK</td>
</tr>
<tr>
<td></td>
<td>2 Relays</td>
<td>B Dansk: DK</td>
</tr>
<tr>
<td></td>
<td>Analogue output</td>
<td>C Français: FR</td>
</tr>
<tr>
<td></td>
<td>Analogue output and 2 relays</td>
<td>D Deutsch: DE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Svenska: SE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Italiano: IT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Espanol: ES</td>
</tr>
</tbody>
</table>

**NB!** Please order the splash-proof cover [IP67] separately. Order No 8335.

**Electrical specifications:**

**Specifications range:**
- -20°C to +60°C

**Common specifications:**
- Supply voltage: 24...230 VAC ± 10%
- 50...60 Hz
- 24...250 VDC ± 20%

- Max. consumption: ≤ 3.5 W
- Isolation voltage / operation: 2.3 kVAC / 250 VAC
- Signal- / noise ratio: min. 60 dB (0...100 kHz)
- Response time (0...90 %, 100...10 %): < 1 s
- 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>General values</th>
<th>Absolute accuracy</th>
<th>Temperature coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input type</td>
<td>≤ ±0.1% of reading</td>
<td>≤ ±0.01% of reading / °C</td>
</tr>
<tr>
<td>Basic values</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Input type</td>
<td>Basic accuracy</td>
<td>Temperature coefficient</td>
</tr>
<tr>
<td>mA</td>
<td>≤ ±4 μA</td>
<td>≤ ±0.4 μA / °C</td>
</tr>
<tr>
<td>Volt</td>
<td>≤ ±20 μV</td>
<td>≤ ±2 μV / °C</td>
</tr>
<tr>
<td>Pt100</td>
<td>≤ ±0.2°C</td>
<td>≤ ±0.02°C / °C</td>
</tr>
<tr>
<td>Potentiometer</td>
<td>≤ ±0.1 Ω</td>
<td>≤ ±0.01 Ω / °C</td>
</tr>
<tr>
<td>TC-type:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E, J, K, L, N, T, U</td>
<td>≤ ±1°C</td>
<td>≤ ±0.05°C / °C</td>
</tr>
<tr>
<td>TC-type:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B, R, S, W3, W5</td>
<td>≤ ±2°C</td>
<td>≤ ±0.2°C / °C</td>
</tr>
</tbody>
</table>

**Auxiliary supplies:**
- 2 wire supply: 25...15 VDC / 0...20 mA
- Wire size, pin 41-46 (max): 1 x 1.5 mm² multicore cable
- Wire size, others (max): 1 x 2.5 mm² multicore cable
- Screw terminal torsion: 0.5 Nm
- Relative humidity: < 95% RH (non-cond.)
- Dimensions (HxWxD): 48 x 96 x 120 mm
- Cutout dimensions: 44.5 x 91.5 mm
- Tightness (mounted in panel): IP65 (IP67 with cover 8335)
- Weight: 230 g

**Pt100 and potentiometer input:**

<table>
<thead>
<tr>
<th>Input type</th>
<th>Min. value</th>
<th>Max. value</th>
<th>Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt100</td>
<td>-200°C</td>
<td>+850°C</td>
<td>IEC60751</td>
</tr>
<tr>
<td>Potentiometer</td>
<td>10 Ω</td>
<td>100 kΩ</td>
<td></td>
</tr>
</tbody>
</table>

- Cable resistance pr. wire, Pt100 (max): 50 Ω
- Sensor current, Pt100: Nom. 0.2 mA
- Effect of sensor cable resistance
- (3- / 4-wire), Pt100: < 0.002 Ω / Ω
- Sensor error detection, Pt100: Yes
- Short circuit detection, Pt100: < 15 Ω

**TC input:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Min. value</th>
<th>Max. value</th>
<th>Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>+400°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>
</tbody>
</table>

- Cold junction compensation (CJC): < ±1.0 °C
- Sensor error detection: Yes
- Sensor error current:
  - when detecting: Nom. 2 μA
  - else: 0 μA

**Current input:**
- Measure range: - 1...25 mA
- Programmable measure ranges: 0...20 and 4...20 mA
- Input resistance: Nom. 20 Ω + PTC 25 Ω

**Voltage input:**
- Measure range: -20 mV...12 VDC
- Programmable measure ranges: 0...1, 0, 2...1, 0...10 and 2...10 VDC
- Input resistance: Nom. 10 MΩ

**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: Explaining text
**Current output:**
Signal range (span).........................0..20 mA
Programmable signal ranges........0., 0.4, 0.5, 0.6, 0.8, 1.
Load (max)..........................20 mA / 800 Ω / 16 VDC
Load stability..........................±0.01% of span / 100 Ω
Sensor error detection........0., 0.6, 0.3 / 23 mA or none
NAMUR NE 43 Upscale..................23 mA
NAMUR NE 43 Downscale.............3.5 mA
Current limit..........................≤28 mA

**Relay outputs:**
Max., voltage..........................250 VRMS
Max., current..........................2 A / AC
Max., AC power.........................500 VA
Max., current at 24 VDC..............1 A
Sensor error detection..............Make/Break/Hold

**Marine approval:**
Det Norske Veritas Rules for ships .. Certificate. Notes No.2.4

**Observed authority requirements:**
Standard: EMC 89/336/EEC:
Emission and immunity.................EN 61326
LVD 73/23/EEC........................EN 61010-1
UL*, Standard for Safety.............UL 508 and UL 873

* Certificates pending

**Sensor error detection / sensor error detection outside range:**

<table>
<thead>
<tr>
<th>Variant</th>
<th>Configuration</th>
<th>Sensor error detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>5714A</td>
<td>Always:</td>
<td>ON</td>
</tr>
<tr>
<td>5714B</td>
<td>ERR1=NONE, ERR2=NONE:</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>else:</td>
<td>ON</td>
</tr>
<tr>
<td>5714C</td>
<td>ERR1=NONE, ERR2=NONE:</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>else:</td>
<td>ON</td>
</tr>
<tr>
<td>5714D</td>
<td>ERR1=NONE, ERR2=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):**
At exceed of the valid range of the A/D converter or the polynomial

<table>
<thead>
<tr>
<th>Input</th>
<th>Range</th>
<th>Readout</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLT</td>
<td>0.1V / 0.2V</td>
<td>IN, LO</td>
<td>&lt; -25 mV</td>
</tr>
<tr>
<td></td>
<td>0.1V / 0.2V</td>
<td>IN, HI</td>
<td>&lt; 25 mV</td>
</tr>
<tr>
<td>CURR</td>
<td>0.2VmA / 4.2VmA</td>
<td>IN, LO</td>
<td>&lt; -1.05 mA</td>
</tr>
<tr>
<td></td>
<td>0.2VmA / 4.2VmA</td>
<td>IN, HI</td>
<td>&gt; 1.05 mV</td>
</tr>
<tr>
<td>POTM</td>
<td>-</td>
<td>IN, LO</td>
<td>&lt; 0.05%</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>IN, HI</td>
<td>&gt; 0.05%</td>
</tr>
<tr>
<td>TEMP</td>
<td>TC / PT-100</td>
<td>IN, LO</td>
<td>&lt; temperature range</td>
</tr>
<tr>
<td></td>
<td>TC / PT-100</td>
<td>IN, HI</td>
<td>&gt; temperature range</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 (4.2mA)</td>
<td>SE, BR</td>
<td>&lt; 2.6 mA</td>
</tr>
<tr>
<td>TEMP</td>
<td>PT-100 2-wire</td>
<td>SE, BR</td>
<td>&gt; ca. 15 mV</td>
</tr>
<tr>
<td></td>
<td>PT-100 2-wire</td>
<td>SE, SH</td>
<td>&gt; ca. 15 mV</td>
</tr>
<tr>
<td></td>
<td>PT-100 4-wire</td>
<td>SE, BR</td>
<td>&gt; ca. 15 mV</td>
</tr>
<tr>
<td></td>
<td>PT-100 4-wire</td>
<td>SE, SH</td>
<td>&gt; ca. 15 mV</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>Display readout &lt; 1.999</td>
<td></td>
</tr>
<tr>
<td>VOL</td>
<td>All</td>
<td>Display readout &gt; 9.999</td>
<td></td>
</tr>
<tr>
<td>POTM</td>
<td>All</td>
<td>Display readout &lt; 1.999</td>
<td></td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>Display readout &gt; 9.999</td>
<td></td>
</tr>
</tbody>
</table>

**Error search / Readout at hardware error**

<table>
<thead>
<tr>
<th>Error search</th>
<th>Readout</th>
<th>Error cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test of internal communication I/O / ADC</td>
<td>HW, ER</td>
<td>Permanent error in ADC</td>
</tr>
<tr>
<td>Test of internal temperature sensor</td>
<td>C.E, ER</td>
<td>C.C 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>

* Error indications in the display blinks once a second. The help text explains the error.
Connections:

Supply:

Input:

PT100, 2-wire

PT100, 3-wire

PT100, 4-wire

TC, internal CJC

2-wire transmitter

Current

Voltage

Potentiometer

Output:

Current

Relay outputs

Block diagram
Routing diagram

If no keys are 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
- Save the chosen parameter and go to the next menu
- Hold Back to previous menu / return to menu 1.0 without saving

1.0 = Default state
1.1 = Only if password protected
1.2 = Fast setting and relay test disabled at password 5000...9999
1.3 = No relay outputs
1.4 = No analogue output

To default state 1.0

Save
Scrolling help text

Process Value (Norm): xxx
SE.BK --> SENSOR BREAKAGE
SE.SH --> SENSOR SHORT CIRCUIT
IN.HI --> INPUT OVER RANGE
IN.LO --> INPUT UNDER RANGE
9.999 --> DISPLAY OVER RANGE
-1.000 --> DISPLAY UNDER RANGE
HWER --> HARDWARE ERROR
EEER --> EEPROM MEMORY ERROR
RALER --> RAM MEMORY ERROR
CJER --> CJC SENSOR ERROR
NO.CA --> DEVICE NOT CALIBRATED

Fast Set (set enabled):
REL1: xxx --> SET POINT RELAY 1 - PRESS OK TO SAVE
REL2: xxx --> SET POINT RELAY 2 - PRESS OK TO SAVE

Fast Set (set disabled):
REL1: xxx --> SET POINT RELAY 1 - READ ONLY
REL2: xxx --> SET POINT RELAY 2 - READ ONLY

Configuration Setup
PASS: xxx --> SET PASSWORD

IN: POTM --> POTENTIOMETER INPUT
CURR --> CURRENT INPUT
VOLT --> VOLTAGE INPUT
TEMP --> TEMPERATURE SENSOR INPUT

RANG [when volt selected]:
2-10 --> INPUT RANGE IN VOLS
0-10 --> INPUT RANGE IN VOLS
0.2-1 --> INPUT RANGE IN VOLS
0.0-1 --> INPUT RANGE IN VOLS

DEC.P
1111 --> DECIMAL POINT POSITION
111.1 --> DECIMAL POINT POSITION
111.11 --> DECIMAL POINT POSITION
11111 --> DECIMAL POINT POSITION

DIO.LO: xxx --> DISPLAY READOUT LOW
DIO.HI: xxx --> DISPLAY READOUT HIGH

RELU
PERC: --> SET RELAY IN PERCENTAGE
DISP: --> SET RELAY IN DISPLAY UNITS

REL1: xxx --> SET POINT RELAY 1
ACT1: xx --> ACTIVATE AT INCREASING SIGNAL
INCR: --> ACTIVATE AT INCREASING SIGNAL
DEC.R: --> ACTIVATE AT DECREASING SIGNAL
HYL: --> HYSTERESIS RELAY 2

ERR1: HOLD: --> HOLD RELAY AT ERROR
ACT1: --> ACTIVATE RELAY AT ERROR
DEAC: --> DEACTIVATE RELAY AT ERROR

REXX: --> SET POINT RELAY 2
DEC.P: [when temp selected]

Configuration / Operating function keys

Documentation for routing diagram

In general:
When configuring the display you are guided through all parameters, you can choose the settings which fill the application. For each menu there is a scrolling help text which is automatically shown in the display, this starts after 5 seconds if no key has been activated.

Configuration is carried out by using the 3 function keys.
- will increase the numerical value or choose the next parameter.
- will decrease the numerical value or choose the previous parameter.
- will accept the chosen value and end the menu.

If a function does not exist in the display all parameters are skipped to make the configuration as simple as possible.

Once the configuration has been entered the display will show “-----”.
Pressing and holding will return to the previous menu or return 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 allow you to change the set point quickly and to check the operation of the relays.

Pressing and at the same time will change the state of the relay – this change is indicated by the diodes on the display.

Pressing will save the set point change.

If more than 0.5 seconds will return to the default state without changing the set point.

Password protection:
Using a password will stop access to the menu and parameters.
There are two levels of password protection.

Passwords between 0000...4999 allow access to the fast setpoint adjustment and relay test.
(Using this password stops access to all other parts of the menu)

Passwords between 5000...9999 stop access to all parts of the menu, fast setpoint and relay test.

(Current set point is still shown)

By using the master password 2008, all configuration menus are available.