5725
Programmable frequency indicator
No. 5725V100-UK
From ser. no. 100687001

PR electronics A/S offers a wide range of analogue 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.

PROGGRAmmABLE FREqUENcy INDIcATOR
5725

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WARNING
This device 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 device must only be applied as described in the following. Prior to the commissioning of the device, this manual must be examined carefully. Only qualified personnel (technicians) should install this device. 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 device is fixed, do not connect hazardous voltages to the device. The following operations should only be carried out on a disconnected device and under ESD safe conditions:
- Troubleshooting the device.
- Repair of the device must be done by PR electronics A/S only.

SYMBOL IDENTIFICATION


The CE mark proves the compliance of the device 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 devices fall under Installation Category II, Pollution Degree 2, 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 device. Should there be any doubt as to the correct handling of the device, please contact your local distributor or, alternatively,

PR electronics A/S
www.prelectronics.com

Mounting and connection of the device 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 devices:

The max. size of the protective fuse is 10 A and, together with a power switch, it shall be easily accessible and close to the device. The power switch shall be marked as the disconnecting unit for the device.

**UL INSTALLATION REQUIREMENTS**
For use on a flat surface of a type 1 enclosure.
Use 60/75°C copper conducters 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 devices 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 device is easily accessible.

**CLEANING**
When disconnected, the device 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.
EC DECLARATION OF CONFORMITY

As manufacturer

PR electronics A/S
Lerbakken 10
DK-8410 Rønde

hereby declares that the following product:

Type: 5725
Name: Programmable frequency indicator

is in conformity with the following directives and standards:

The EMC Directive 2004/108/EC and later amendments

EN 61326-1 : 2006

For specification of the acceptable EMC performance level, refer to the electrical specifications for the device.

The Low Voltage Directive 2006/95/EC and later amendments

EN 61010-1 : 2001

Rønde, 11 June 2012

Kim Rasmussen
Manufacturer’s signature
FRONT AND BACK LAYOUT

Picture 1: Front of 5725.

Picture 2: Back of 5725.
PROGRAMMABLE FREQUENCY INDICATOR
5725

• Frequencies from 0.001 Hz to 50 kHz
• Input for various sensors; NPN, PNP, Contact, Namur, S0, Tacho and TTL
• 2 SPDT relays and analogue output
• 4-digit, 14-segment easily readable LED display
• Universal supply voltage

Application
• 5725 is a digital indicator for readout of frequency signals and pulse signals.
• Typical applications are indication and conversion of process speed measurements and flow rate.
• The indicator can also be used for measuring the passing time on e.g. a conveyor line, as the 5725 can handle period time measurements.
• Process control is possible as the type 5725D contains 2 pairs of potential-free change-over relays and an analogue output.
• The display offers IP65 protection from the front and the splash-proof cover - PR type 8335 - can be used against atmospheres and liquids.

Technical characteristics
• 4-digit LED indication with 13.8 mm 14-segment characters for a -1999...9999 display readout with programmable decimal point.
• Relay ON / OFF indication via front LED’s.
• Various input sensor types and custom current and voltage trig levels can be selected via the programming menu.
• Input and supply of NPN and PNP proximity switches is possible from the input terminals.
• A menu item allows the user to minimise the installation test time for the relay outputs by activating or deactivating each relay independently of the input signal.

Mounting / installation
• Panel mounted indicator, 48x96mm which obtains IP65 (type 4X) when using the rubber gasket provided.
• All standard operational parameters can be adjusted to any application by way of the front function keys.
• Help texts in eight different languages are available and can be selected via a menu item.
CONNECTIONS

Input signals:

Special trig current & voltage
TTL
S0
Namur
PNP
NPN
Contact (NPN)
Tacho

Output signals:

Analogue, 0/4...20 mA

Supply:

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

+ Sup 5...17 V
+ Input
tacho
Input gnd

Relay 2
Relay 1
Order: 5725

<table>
<thead>
<tr>
<th>Type</th>
<th>Version</th>
</tr>
</thead>
</table>
| 5725  | Standard..................: A  
      | Analogue output and 2 relays ..: D |

Accessories: 8335 = Splash proof front

Electrical specifications

Environmental conditions:
Specifications range .................................... -20°C to +60°C  
Storage temperature ................................... -40°C to +85°C  
Calibration temperature............................... 20...28°C  
Relative humidity ......................................... < 95% RH (non-cond.)  
Protection degree ........................................ IP20  
Installation in pollution degree 2 & overvoltage category II.

Mechanical specifications:
Dimensions (H x W x D) ........................................ 48 x 96 x 120 mm  
Cutout dimensions ........................................... 44.5 x 91.5 mm  
Protection degree (mounted in panel).............. IP65 / Type 4X, UL50E  
Weight ................................................. 230 g  
Wire size, pin 11-12 & 41-44, max............. 1 x 1.5 mm2/ AWG 30...16 stranded wire  
Wire size, others, max............................... 1 x 2.5 mm2/ AWG 30...12 stranded wire  
Terminal connection .................................... Spring-cage

Common electrical specifications:
Supply voltage, universal ......................... 21.6...253 VAC, 50...60 Hz  
                                      or 19.2...300 VDC  
Max consumption, 5725A / 5725D ............. 2.8 W / 3.6 W  
Isolation voltage, test / operation ............ 2.3 kVAC / 250 VAC  
Signal / noise ratio ................................. > 60 dB
Input:

General:
Frequency range, F/I conversion function ..... 0.001 Hz to 50 kHz
Time range, Period time function ................ 999.9 sec to 20 µsec
Response time (0...90%, 100...10%) ........... < 1 period + 100 msec
Low cut off frequency ................................. 0.0009 Hz
Low cut off period time ............................... 1111 sec
Max. frequency, with input filter ON .......... 50 Hz

<table>
<thead>
<tr>
<th>Specification</th>
<th>Absolute accuracy</th>
<th>Temperature coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input to Display &amp; Relays</td>
<td>≤ ±0.05%</td>
<td>≤ ±0.01% / °C</td>
</tr>
<tr>
<td>Input to Analogue Output</td>
<td>≤ ±0.1%</td>
<td></td>
</tr>
</tbody>
</table>

EMC immunity influence ......................... < ±0.5% of span
Extended EMC immunity:
NAMUR NE 21, A criterion, burst ................. < ±1% of span

NAMUR input - acc. to EN 60947-5-6:
Trig-level LOW .................................... ≤ 1.2 mA
Trig-level HIGH ................................... ≥ 2.1 mA
Input impedance ................................ 1 kΩ / < 1.5 nF
Breakage detection ............................. ≤ 0.1 mA
Short-circuit detection ....................... ≥ 6.9 mA
Sensor supply - pin 44, fixed ............... 8.3 V

Tacho input:
Trig-level LOW .................................... ≤ - 50 mV
Trig-level HIGH ................................... ≥ + 50 mV
Input impedance ................................ 100 kΩ / < 1.5 nF
Max. input voltage ............................. 80 VAC pp
Sensor supply - pin 44, programmable .... 5 -17 V / 20 mA

NPN / PNP input:
Trig-level LOW .................................... ≤ 4.0 V
Trig-level HIGH ................................... ≥ 7.0 V
Input impedance ................................ 3.48 kΩ / < 1.5 nF
Sensor supply - pin 44, programmable .... 5 -17 V / 20 mA
**TTL input:**
Trig-level LOW ............................................. ≤ 0.8 VDC
Trig-level HIGH ............................................ ≥ 2.0 VDC
Input impedance ......................................... ≥ 100 kΩ / < 1.5 nF
Sensor supply - pin 44, programmable ..... 5 -17 V / 20 mA

**S0 input acc. to DIN 43864:**
Trig-level LOW ............................................. ≤ 2.2 mA
Trig-level HIGH ............................................ ≥ 9.0 mA
Input impedance ......................................... 758 Ω / < 1.5 nF
Sensor supply - pin 44, fixed ..................... 17 V

**Special voltage input:**
User programmable trig-levels .................... -0.05...6.50 V
Hysteresis, min ........................................... 50 mV
Input impedance, selectable:
  High Z .................................................... ≥100 kΩ / < 1.5 nF
  Pull up and pull down ................................ 3.48 kΩ / < 1.5 nF
Sensor supply - pin 44, programmable ..... 5 -17 V / 20 mA

**Special current input:**
User programmable trig-levels .................... 0.0...10.0 mA
Hysteresis, min ........................................... 0.2 mA
Input impedance ......................................... 1 kΩ / < 1.5 nF
Sensor supply - pin 44, programmable ..... 5 -17 V / 20 mA
Output:

Display:
Display readout ........................................... -1999...9999 (4 digits)
Decimal point .............................................. Programmable
Digit height .................................................. 13.8 mm
Display updating ......................................... 2.2 times / sec.
Input frequency outside range &
Namur input sensor error is indicated by....... Explanatory text

Current output (5725D):
Programmable signal ranges ...................... 0...20, 4...20 &
20...0, 20...4 mA
Load (max.).............................................. 20 mA / 800 Ω / 16 VDC
Current limit.............................................. ≤ 28 mA
Load stability.............................................. ≤ 0.01% of span / 100 Ω
Programmable response time ................. 1.0...60.0 sec
Sensor error indication, at Namur input:
    selectable .............................................. 0 / 3.5 / 23 mA / none
Output limitation at outside range:
    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

Relay outputs (5725D):
Relay function.............................................. Setpoint
Hysteresis, in % / display counts ............ 0.1...100% / 1...9999
On and Off delay................................. 0...3600 sec
Power On delay........................................... 1.0...60.0 sec
Sensor error action................................. Make / Break / Hold
Max. voltage.............................................. 250 VRMS
Max. current ............................................ 2 A / AC
Max. AC power ........................................... 500 VA
Max. current at 24 VDC............................ 1 A

Approvals:
EMC 2004/108/EC ...................................... EN 61326-1
LVD 2006/95/EC .......................................... EN 61010-1
UL, Standard for Safety .............................. UL 508
GOST R

Marine:
Det Norske Veritas, Ships & Offshore ........ Stand. f. Certific. No. 2.4
**Sensor error indication, inside and outside range**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Out of range limit</th>
<th>Relay behaviour</th>
<th>Analogue output value</th>
<th>Display readout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor input type = NAMUR and sensor error detection = ON</td>
<td>&gt; 6.9 mA</td>
<td>Set to user defined value: HOLD. ACTIVE. DEACTIVE or NONE</td>
<td>Set to user-defined value (23.0, 3.5 mA or NONE)</td>
<td>&quot;SE.SH&quot;</td>
</tr>
<tr>
<td></td>
<td>&lt; 0.1 mA</td>
<td></td>
<td></td>
<td>&quot;SE.BR&quot;</td>
</tr>
</tbody>
</table>

---

**Input "out of range" indication**

<table>
<thead>
<tr>
<th>Valid measurement range:</th>
<th>Out of range limit</th>
<th>Display readout</th>
</tr>
</thead>
<tbody>
<tr>
<td>F to I function: 0.001 Hz to 50 kHz</td>
<td>&lt; 0.0009 Hz - equals &quot;Low cut off time&quot;</td>
<td>&quot;0&quot; or &quot;IN.LO&quot; if 0% input value is set different from &quot;0&quot;</td>
</tr>
<tr>
<td></td>
<td>&gt; 50.5 kHz</td>
<td>&quot;IN.HI&quot;</td>
</tr>
<tr>
<td>Period time function: 20 µs to 999.9 s</td>
<td>&gt; 1111 s (18 min. 31 sec.) - equals &quot;Low cut off time&quot;</td>
<td>&quot;IN.LO&quot;</td>
</tr>
<tr>
<td></td>
<td>&lt; 19.8 µs</td>
<td>&quot;IN.HI&quot;</td>
</tr>
</tbody>
</table>

---

**Display out of range Indication**

<table>
<thead>
<tr>
<th>Valid display value range:</th>
<th>Out of range limit</th>
<th>Display readout</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1999 to 9999</td>
<td>&lt; -1999</td>
<td>&quot;-1.9.9.9.&quot; - flashing</td>
</tr>
<tr>
<td></td>
<td>&gt; 9999</td>
<td>&quot;9.9.9.9.&quot; - flashing</td>
</tr>
</tbody>
</table>

---

**Hardware error indication**

<table>
<thead>
<tr>
<th>Error explanation</th>
<th>Error cause</th>
<th>Display readout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error in internal communication (SPI etc.)</td>
<td>Permanent error in inter-communication between microcontrollers</td>
<td>&quot;HW.ER&quot;</td>
</tr>
<tr>
<td>Error in checksum test of the configuration in RAM</td>
<td>Error in RAM</td>
<td>&quot;RA.ER&quot;</td>
</tr>
<tr>
<td>Error in checksum test of the configuration in EEPROM</td>
<td>Error in EEPROM</td>
<td>&quot;EE.ER&quot;</td>
</tr>
<tr>
<td>Error in OK check or checksum test of the calibration data in FLASH</td>
<td>Error in FLASH or Calibration has not been performed or Calibration data in FLASH are corrupt</td>
<td>&quot;NO.CA&quot;</td>
</tr>
</tbody>
</table>

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

Supply:

Inputs:

Special current

Special voltage

Tacho

PNP

NPN

Contact (NPN)

Namur

S0

TTL

Output:

Current

Relays
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 1 2 and 3. 1 will increase the numerical value or choose the next parameter. 2 will decrease the numerical value or choose the previous parameter. 3 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 3 will return to the previous menu or go back to the default state (“Monitor”) without saving the changed values or parameters.

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

Further explanations:

Fast setpoint adjustment and relay test (only 5725D):
These menus are interactive and allow you to adjust the setpoints while the display is measuring the input signal. The front LED’s will then indicate when the relays change state, thus easing the setpoint adjustment in many situations. By activating 1 and 2 simultaneously, a relay test will be initiated and the relay will change state. The setpoint adjustment will be saved by a quick press of 3. Holding down 3 for more that 0.5 seconds will return the display to the default state (“Monitor”) without changing the setpoint.
Password protection

Using a password will block access to the menu and parameters. Default password 2008 allows access to all configuration menus.

5725D only: 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).
ROUTING DIAGRAM FOR 5725A

If no key is activated for 2 minutes, the display returns to default state "Monitor" 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 OK Back to previous menu / return to default state "Monitor" without saving.

*1 Only visible if password is enabled (E.PAS = YES)
1. Only visible if password is enabled (EPAS = YES)
2. Displays either Hz/kHz or s/ms for 1 sec. before actual value is displayed.
   When value hits digit-limit while scrolling, either Hz/kHz or s/ms is displayed again for 1 sec. to show the user that the new range is active.
3. Only visible if max. \((INLO,INHI)\) value is \(\leq 50\) Hz (F/I) or \(\geq 20\) ms (Period time)
   Default if visible = YES, else deactivated.
4. Minimum \(INHI\) value is automatically limited to 1 display count above \(INLO\).
If no key is activated for 2 minutes, the display returns to default state "Monitor" without saving configuration changes.

- Increase value / choose next parameter
- Decrease value / choose previous parameter
- Accept the chosen parameter and go to the next menu
- Back to previous menu / return to default state "Monitor" without saving.

Power up

"Start"

1. Increase setpoint
2. Decrease setpoint
3. Save and exit the menu
4. Increase setpoint and decrease setpoint simultaneously = relay changes state

Fast setpoint adjustment and relay test

1. Increase value / choose next parameter
2. Decrease value / choose previous parameter
3. Accept the chosen parameter and go to the next menu
4. Hold (3sec.)
5. "Start"
**1** Only visible if password is enabled
\[(\text{EPAS} = \text{YES})\]

**2** Password 5000...9999:
FastSet and Relay Test features disabled.
(FastSet menus show the actual setpoints).

**3** Displays either Hz/kHz or s/ms for 1 sec. before actual value is displayed.
When value hits digit-limit while scrolling, either Hz/kHz or s/ms is displayed again for 1 sec. to show the user that the new range is active.

**4** Only visible if max. (\(\text{INLO}, \text{INHI}\)) value is \(\leq 50\) Hz (F/I) or \(\geq 20\) ms (Period time)
Default if visible = \text{YES}, else deactivated.

**5** Range depends on selected display scaling.

**6** Only visible for NAMUR input.
0mA only visible for \(\text{ROUT} = 0-20\) or 20-0
35mA only visible for \(\text{ROUT} = 4-20\) or 20-4

**7** Not visible if both relay functions are \text{OFF}.

**8** Minimum \(\text{INHI}\) value is automatically limited to 1 display count above \(\text{INLO}\).

Same procedure for REL21!
## SCROLLING HELP TEXTS

<table>
<thead>
<tr>
<th>Top line</th>
<th>Scrolling text</th>
<th>TEXT NR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language menu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>UK - SELECT ENGLISH HELP TEXT</td>
<td>0</td>
</tr>
<tr>
<td>DK</td>
<td>DK - VÆLG DANSK HJÆLPETEKST</td>
<td>1</td>
</tr>
<tr>
<td>DE</td>
<td>DE - WÄHLE DEUTSCHEN HILFETEXT</td>
<td>2</td>
</tr>
<tr>
<td>FR</td>
<td>FR - SELECTION TEXTE D'AIDE EN FRANCAIS</td>
<td>3</td>
</tr>
<tr>
<td>SE</td>
<td>SE - VALJ Svensk hjälpTekst</td>
<td>4</td>
</tr>
<tr>
<td>IT</td>
<td>IT - SELEZIONARE TESTI DI AIUTO ITALIANI</td>
<td>5</td>
</tr>
<tr>
<td>ES</td>
<td>ES - SELECCIONAR TEXTO DE AYUDA EN ESPANOL</td>
<td>6</td>
</tr>
<tr>
<td>CZ</td>
<td>CZ - VYBER CESKOU NAPOVEDU</td>
<td>7</td>
</tr>
</tbody>
</table>

### Error indication
(when active, labels are flashing @ app. 1 Hz)

- **SE.BR**: SENSOR WIRE BREAKAGE
- **IN.HI**: INPUT OVERRANGE
- **SE.SH**: SENSOR SHORT CIRCUIT
- **IN.LO**: INPUT UNDERRANGE
- **9.9.9.9.**: DISPLAY OVERRANGE
- **-1.9.9.9.**: DISPLAY UNDERRANGE
- **H.W.ER**: HARDWARE ERROR
- **EE.ER**: EEPROM ERROR - CHECK CONFIGURATION
- **RA.ER**: RAM MEMORY ERROR
- **NO.CA**: DEVICE NOT CALIBRATED

### Fastset Menu

- **F.SET**
  - **REL1**: FAST SET MENU - SELECT RELAY
  - **REL2**: FAST SET MENU - SELECT RELAY

### Configuration setup

- **PASS**
  - xxxx: SET CORRECT PASSWORD

- **IN**
  - **PNP**: PNP SENSOR INPUT
  - **NPN**: NPN SENSOR INPUT
  - **TTL**: TTL SENSOR INPUT
  - **NAMU**: NAMUR SENSOR INPUT
  - **S0**: S0 SENSOR INPUT
  - **TACH**: TACHO SENSOR INPUT
  - **XmA**: SPECIAL CURRENT SENSOR INPUT
  - **XV**: SPECIAL VOLTAGE SENSOR INPUT

- **TR.LO** (when special voltage input is selected)
  - xxxx: SET LOW TRIGGER LEVEL IN VOLT

- **TR.LO** (when special current input is selected)
  - xxxx: SET LOW TRIGGER LEVEL IN mA

- **TR.HI** (when special voltage input is selected)
  - xxxx: SET HIGH TRIGGER LEVEL IN VOLT

- **TR.HI** (when special current input is selected)
  - xxxx: SET HIGH TRIGGER LEVEL IN mA

- **Z.IN** (when special voltage input is selected)
  - HI.Z: SET INPUT RESISTANCE HIGH
  - PL.UP: SET INPUT PULL UP
  - PL.DN: SET INPUT PULL DOWN
  - S.SUP: (not when NAMUR or S0 input is selected)
  - xxxx: SET SENSOR SUPPLY VOLTAGE

- **IN.LO**
  - xxxx: SET INPUT RANGE LOW IN HZ
  - xxxx: SET INPUT RANGE LOW IN KHZ
  - xxxx: SET INPUT RANGE LOW IN S
  - xxxx: SET INPUT RANGE LOW IN mS

- **IN.HI**
  - xxxx: SET INPUT RANGE HIGH IN HZ
  - xxxx: SET INPUT RANGE HIGH IN KHZ
  - xxxx: SET INPUT RANGE HIGH IN S
  - xxxx: SET INPUT RANGE HIGH IN mS

- **FILT**
  - NO: ENABLE INPUT FILTER
  - YES: ENABLE INPUT FILTER

- **DEC.P**
  - 1111: DECIMAL POINT POSITION
  - 111.1: DECIMAL POINT POSITION
  - 11.11: DECIMAL POINT POSITION
  - 1.111: DECIMAL POINT POSITION

- **DL.LO**
  - xxxx: DISPLAY READOUT LOW

- **DL.HI**
  - xxxx: DISPLAY READOUT HIGH
<table>
<thead>
<tr>
<th>REL.U</th>
<th>PERC</th>
<th>SET RELAY IN PERCENTAGE</th>
<th>52</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISP</td>
<td>SET RELAY IN DISPLAY UNITS</td>
<td>53</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REL1</th>
<th>OFF</th>
<th>RELAY 1 DISABLED</th>
<th>54</th>
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<tbody>
<tr>
<td>SETUP</td>
<td>ENTER RELAY 1 SETUP</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>SKIP</td>
<td>SKIP RELAY 1 SETUP</td>
<td>56</td>
<td></td>
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</table>

| SETP | xxxxx | RELAY SETPOINT | 57 |

<table>
<thead>
<tr>
<th>ACT1</th>
<th>INCR</th>
<th>ACTIVATE AT INCREASING SIGNAL</th>
<th>58</th>
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</thead>
<tbody>
<tr>
<td>DECR</td>
<td>ACTIVATE AT DECREASING SIGNAL</td>
<td>59</td>
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| HYS1 | xxxxx | RELAY HYSTERESIS | 60 |

<table>
<thead>
<tr>
<th>ERR1</th>
<th>HOLD</th>
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<th>61</th>
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<tbody>
<tr>
<td>ACTI</td>
<td>ACTIVATE RELAY AT ERROR</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>DEAC</td>
<td>DEACTIVATE RELAY AT ERROR</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>NONE</td>
<td>UNDEFINED STATUS AT ERROR</td>
<td>64</td>
<td></td>
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| ON.DE | xxxxx | RELAY ON-DELAY IN SECONDS | 65 |

| OF.DE | xxxxx | RELAY OFF-DELAY IN SECONDS | 66 |

<table>
<thead>
<tr>
<th>REL2</th>
<th>OFF</th>
<th>RELAY 2 DISABLED</th>
<th>67</th>
</tr>
</thead>
<tbody>
<tr>
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<td>ENTER RELAY 2 SETUP</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>SKIP</td>
<td>SKIP RELAY 2 SETUP</td>
<td>69</td>
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| SETP | xxxxx | RELAY SETPOINT | 70 |

<table>
<thead>
<tr>
<th>ACT2</th>
<th>INCR</th>
<th>ACTIVATE AT INCREASING SIGNAL</th>
<th>71</th>
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</thead>
<tbody>
<tr>
<td>DECR</td>
<td>ACTIVATE AT DECREASING SIGNAL</td>
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</table>

| HYS2 | xxxxx | RELAY HYSTERESIS | 73 |

<table>
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<tr>
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<th>HOLD</th>
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<th>74</th>
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</thead>
<tbody>
<tr>
<td>ACTI</td>
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<td>75</td>
<td></td>
</tr>
<tr>
<td>DEAC</td>
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<td></td>
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<tr>
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| ON.DE | xxxxx | RELAY ON-DELAY IN SECONDS | 78 |

<table>
<thead>
<tr>
<th>A.OUT</th>
<th>20-4</th>
<th>OUTPUT RANGE IN mA</th>
<th>79</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-0</td>
<td>OUTPUT RANGE IN mA</td>
<td>80</td>
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<tr>
<td>4-20</td>
<td>OUTPUT RANGE IN mA</td>
<td>81</td>
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<tr>
<td>0-20</td>
<td>OUTPUT RANGE IN mA</td>
<td>82</td>
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<table>
<thead>
<tr>
<th>O.ERR</th>
<th>23mA</th>
<th>NAMUR NE43 UPSCALE AT ERROR</th>
<th>83</th>
</tr>
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<tbody>
<tr>
<td>3.5mA</td>
<td>NAMUR NE43 DOWNSCALE AT ERROR</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>0mA</td>
<td>DOWNSCALE AT ERROR</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>NONE</td>
<td>UNDEFINED OUTPUT AT ERROR</td>
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| RESP | xxxxx | ANALOG OUTPUT RESPONSE TIME IN SECONDS | 87 |

<table>
<thead>
<tr>
<th>E.PAS</th>
<th>NO</th>
<th>ENABLE PASSWORD PROTECTION</th>
<th>88</th>
</tr>
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<tbody>
<tr>
<td>YES</td>
<td>ENABLE PASSWORD PROTECTION</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>N.PAS</td>
<td>when password enabled</td>
<td>90</td>
<td></td>
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<table>
<thead>
<tr>
<th>A.OUT</th>
<th>20-4</th>
<th>OUTPUT RANGE IN mA</th>
<th>91</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-0</td>
<td>OUTPUT RANGE IN mA</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>4-20</td>
<td>OUTPUT RANGE IN mA</td>
<td>93</td>
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</tr>
<tr>
<td>0-20</td>
<td>OUTPUT RANGE IN mA</td>
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<table>
<thead>
<tr>
<th>O.ERR</th>
<th>23mA</th>
<th>NAMUR NE43 UPSCALE AT ERROR</th>
<th>95</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5mA</td>
<td>NAMUR NE43 DOWNSCALE AT ERROR</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>0mA</td>
<td>DOWNSCALE AT ERROR</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>NONE</td>
<td>UNDEFINED OUTPUT AT ERROR</td>
<td>98</td>
<td></td>
</tr>
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| RESP | xxxxx | ANALOG OUTPUT RESPONSE TIME IN SECONDS | 99 |

<table>
<thead>
<tr>
<th>E.PAS</th>
<th>NO</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>ENABLE PASSWORD PROTECTION</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>N.PAS</td>
<td>when password enabled</td>
<td>102</td>
<td></td>
</tr>
</tbody>
</table>
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 linearisation, scaling, and difference measurement functions for programming via PReset software.

Ex interfaces  Interfaces for analogue 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 modules in zone 20, 21 & 22.

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

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

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