Universal Transmitter

DRST-UN

User’s Guide

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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:

General mounting, connection and disconnection of wires.
Troubleshooting the device.

Repair of the device and replacement of circuit breakers must be done by Omega Engineering A/S only.

**WARNING**

DRST-UN must be mounted on a DIN rail according to DIN 46277.

**WARNING**

Do not open the front plate of the module as this will cause damage to the connector for the display / programming front DRSL-DISPLAY. This module contains no DIP-switches or jumpers.

### 1.2 - Symbol Identification

- **Triangle with an exclamation mark:** Warning / demand. Potentially lethal situations.
- **CE mark:** The CE mark proves the compliance of the device with the essential requirements of the directives.
- **Double insulation symbol:** The double insulation symbol shows that the device is protected by double or reinforced insulation.
Section 2 - Instructions

2.1 - 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.

2.2 - Receipt and Unpacking

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

2.3 - 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 1, and Insulation Class II.

2.4 - 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, 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 should be easily accessible and close to the device. The power switch should be marked with a label indicating that it will switch off the voltage to the device.
Year of manufacture can be taken from the first two digits in the serial number.
Section 2.5 - UL Installation Requirements

Use 60/75°C copper conducters only
For use only in pollution degree 2 or better
Max. ambient temperature - 60°C
Max. wire size - AWG 26-14
UL file number - E231911

Section 2.6 - 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.

Section 2.7 - 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.

Section 2.8 - Cleaning

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

Section 2.9 - Liability

To the extent that the instructions in this manual are not strictly observed, the customer cannot advance a demand against Omega Engineering A/S that would otherwise exist according to the concluded sales agreement.
Demounting

Section 3.1 - How to demount DRST-UN

First, remember to demount the connectors with hazardous voltages.
Picture 1: Detach the device from the DIN rail by lifting the bottom lock.

When front LED lights red / display shows AO.ER
DRST-UN is designed as a SIL 2 device with a high safety level. Therefore, a continuous measurement of the outgoing current is carried out on a 4...20 mA and 20...4 mA output signal. If the current output signal is different from the internal calculated output value or the current output is 0 (due to e.g. an open circuit breakage), an error mode switches on the red front LED. This function is not a default option but must be actively selected via the programming menu (S4-20 & S20-4). The error mode can only be reset by switching off and then switching on the supply voltage to the device.
Section 4.1 - Universal Transmitter DRST-UN

- Input for RTD, TC, Ohm, potentiometer, mA and V
- 2-wire supply > 16 V
- Output for current and voltage
- Universal AC or DC supply

4.2 - Advanced Features

Programmable by way of detachable display front DRSL-DISPLAY, process calibration, signal simulation, password protection, error diagnostics and help text available in several languages.

4.3 - Application

- Linearised, electronic temperature measurement with RTD or TC sensor.
- Conversion of linear resistance variation to a standard analogue current / voltage signal, i.e. from solenoids and butterfly valves or linear movements with attached potentiometer.
- Power supply and signal isolator for 2-wire transmitters.
- Process control with standard analogue output.
- Galvanic separation of analogue signals and measurement of floating signals.
- The DRST-UN is designed according to strict safety requirements and is thus suitable for application in SIL 2 installations.

4.4 - Technical characteristics

- When DRST-UN is used in combination with the DRSL-DISPLAY display / programming front, all operational parameters can be modified to suit any application. As the DRST-UN is designed with electronic hardware switches, it is not necessary to open the device for setting of DIP-switches.
- A green / red front LED indicates normal operation and malfunction.
- Continuous check of vital stored data for safety reasons.
- 3-port 2.3 kVAC galvanic isolation.
Section 5.1 - Functionality

explanatory help texts guide you effortlessly and automatically through the configuration steps, thus making the product very easy to use. Functions and configuration options are described in the section “Configuration / operating the function keys”.

5.2 - Application

• Communications interface for modification of operational parameters in DRST-UN.

• Can be moved from one DRST-UN device to another and download the configuration of the first transmitter to subsequent transmitters.

• Fixed display for readout of process data and status.

5.3 - Technical characteristics

• LCD display with 4 lines; Line 1 (H=5.57 mm) shows input signal, line 2 (H=3.33 mm) shows units, line 3 (H=3.33 mm) shows analogue output or tag no. and line 4 shows communication status.

• Programming access can be blocked by assigning a password. The password is saved in the transmitter in order to ensure a high degree of protection against unauthorised modifications to the configuration.
Section 6.1 - Mounting and Installation

- Click DRSL-DISPLAY onto the front of DRST-UN.

Section 6.2 - Mounting/Demounting the DRSL-DISPLAY

1: Insert the taps of DRSL-DISPLAY into the holes at the top of the device.
2: Swing DRSL-DISPLAY into place.

Section 6.3 - Demounting of DRSL-DISPLAY

3: Push the release button on the bottom of DRSL-DISPLAY and swing DRSL-DISPLAY up.
Section - 7.1 - Inputs Signals

Current

Voltage

Potentiometer

RTD and lin. R
Connect., wires

TC

Order separately: 5910 CJC connector.
See the connection drawing on page 15.

Section - 7.2 - Output Signals

Analogue, 0/4...20 mA and voltage

Section - 7.3 - Supply

21.6...253 VAC
or
19.2...300 VDC
Section - 8.1 - Order Codes

DRST-UN = Universal transmitter
DRSL-DISPLAY = Display / programming front
5910 = CJC connector

Section - 8.2 - Electrical Specifications

Environmental conditions
Specifications range .......... -20°C to +60°C
Calibration temperature..... 20...28°C
Relative humidity............ < 95% RH (non-cond.)
Protection degree .......... IP20

Mechanical specifications
Dimensions (HxBxD) ....... 109 x 23.5 x 104 mm
Dimensions, with DRSL-DISPLAY/DRST-CM (H x B x D), 109 x 23.5 x 116/131 mm
Weight.............................. 145 g
Weight with DRSL-DISPLAY/DRST-CM 160 g / 245 g
Max. wire size.................... 1 x 2.5 mm² stranded wire
Screw terminal torque ....... 0.5 Nm
Vibration.......................... IEC 60068-2-6 : 2007
2...13.2 Hz............... ±1 mm
13.2...100 Hz.................... ±0.7 g

Common specifications
Supply voltage, universal .. 21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Max. consumption .......... ≤ 2.0 W
Fuse................................. 400 mA SB / 250 VAC
Isolation voltage, test / operation 2.3 kVAC / 250 VAC
Communications interface. Communication enabler DRST-CM
Programming front DRSL-DISPLAY
Signal / noise ratio........... Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%):
Temperature input .......... ≤ 1 s
mA / V input .................... ≤ 400 ms

Accuracy, the greater of the general and basic values:

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

### Auxiliary supplies:
- **2-wire supply** (terminal 44...43) 25...16 VDC / 0...20 mA
- **RTD, linear resistance and potentiometer input**

#### Input for RTD types:
- Pt10, Pt20, Pt50, Pt100, Pt200, Pt250, Pt300, Pt400, Pt500, Pt1000
- Ni50, Ni100, Ni120, Ni1000, Cu10, Cu20, Cu50, Cu100

### Basic values

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

### EMC immunity
- EMC immunity influence: $\leq \pm 0.5%$ of span
- Extended EMC immunity: NAMUR NE 21, A criterion, burst: $\leq \pm 1%$ of span

### TC type:
- E, J, K, L, N, T, U: $\leq \pm 1 ^\circ C$; $\leq \pm 0.05 ^\circ C / ^\circ C$
- R, S, W3, W5, LR: $\leq \pm 2 ^\circ C$; $\leq \pm 0.2 ^\circ C / ^\circ C$
- B 85...200°C: $\leq \pm 4 ^\circ C$; $\leq \pm 0.4 ^\circ C / ^\circ C$
- B 200...1820°C: $\leq \pm 2 ^\circ C$; $\leq \pm 0.2 ^\circ C / ^\circ C$
Cable resistance per wire (max.), RTD............ 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

Section 8.3 - TC input
Cold junction compensation (CJC)
via external sensor in connector 5910  20...28°C ≤ ±1°C
-20...-20°C /
28...70°C ≤±2°C
via internal CJC 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 50 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...5 / 1...5 /
  0...10 and 2...10 VDC
Input resistance ............... Nom. 10 MΩ

Current output
Signal range (span) .......... 0...20 mA
Programmable signal ranges 0...20 / 4...20 / 20...0 / 20...4 mA
Load (max.) ...................... 20 mA / 800 Ω / 16 VDC
Load stability .................. ≤ 0.01% of span / 100 Ω
Sensor error detection....... 0 / 3.5 / 23 mA / none
NAMUR NE 43 Upscale / 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

Voltage output
Signal range .................... 0...10 VDC
Programmable signal ranges 0...1 / 0.2...1 / 0...10 / 0...5 / 1...5 /
  2...10 / 1...0 / 1...0.2 / 5...0 / 5...1 / 10...0 and 10...2 V
Load (min.) ...................... 500 kΩ

Ex / I.S. approval
FM, applicable in .............. Class I, Div. 2, Group A, B, C, D
  Class I, Div. 2, Group IIC
  Zone 2
Max. ambient temperature for T5  60°C

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

of span = of the currently selected measurement range

### Display readout on the DRSL-DISPLAY of sensor error detection and input signal outside range

<table>
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<th>Sensor error check:</th>
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<td>Device:</td>
</tr>
<tr>
<td>DRST-UN</td>
</tr>
<tr>
<td>Else:</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 &lt; -25 mV</td>
<td>IN.HI &gt; 1.2 V</td>
</tr>
<tr>
<td></td>
<td>0...10 V / 2...10 V</td>
<td>IN.LO &lt; -25 mV</td>
<td>IN.HI &gt; 12 V</td>
</tr>
<tr>
<td>CURR</td>
<td>0...20 mA / 4...20 mA</td>
<td>IN.LO &lt; -1.05 mA</td>
<td>IN.HI &gt; 25.05 mA</td>
</tr>
<tr>
<td></td>
<td>0...800 Ω</td>
<td>IN.LO &lt; 0 Ω</td>
<td>IN.HI &gt; 1075 Ω</td>
</tr>
<tr>
<td></td>
<td>0...10 kΩ</td>
<td>IN.LO &lt; 0 Ω</td>
<td>IN.HI &lt; 110 kΩ</td>
</tr>
<tr>
<td>POTM</td>
<td>-</td>
<td>IN.LO &lt; -0.5 %</td>
<td>IN.HI &gt; 100.5 %</td>
</tr>
<tr>
<td>TEMP</td>
<td>TC / RTD</td>
<td>IN.LO &lt; temperature range -2°C</td>
<td>IN.HI &gt; temperature range +2°C</td>
</tr>
</tbody>
</table>

### Display readout below min.- / above max. (-1999, 9999):

<table>
<thead>
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<th>Input</th>
<th>Range</th>
<th>Readout</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>All</td>
<td>-1999</td>
<td>Display readout &lt;1999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9999</td>
<td>Display readout &gt;9999</td>
</tr>
</tbody>
</table>
Sensor error detection limits

<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..20 mA)</td>
<td>SE.BR</td>
<td>&lt;= 3.6 mA; &gt; = 21 mA</td>
</tr>
<tr>
<td>POTM</td>
<td>All, SE.BR on all 3-wire</td>
<td>SE.BR</td>
<td>&gt; ca. 126 kΩ</td>
</tr>
<tr>
<td>LIN.R</td>
<td>0...800 Ω</td>
<td>SE.BR</td>
<td>&gt; ca. 875 Ω</td>
</tr>
<tr>
<td></td>
<td>0...10 kΩ</td>
<td>SE.BR</td>
<td>&gt; ca. 11 kΩ</td>
</tr>
<tr>
<td>TEMP</td>
<td>TC</td>
<td>SE.BR</td>
<td>&gt; ca. 750 kΩ / (1.25 V)</td>
</tr>
<tr>
<td></td>
<td>RTD, 2-, 3-, and 4-wire</td>
<td>SE.BR</td>
<td>&gt; ca. 15 kΩ</td>
</tr>
<tr>
<td></td>
<td>No SE.SH for Cuxx, Pt10, Pt20 and Pt50</td>
<td>SE.SH</td>
<td>&lt; ca. 15 Ω</td>
</tr>
</tbody>
</table>

Error indications

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<th>Error search</th>
<th>Readout</th>
<th>Error cause</th>
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<tr>
<td>Test of internal CJC sensor</td>
<td>CJ.ER</td>
<td>CJC sensor defect or temperature outside range</td>
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<tr>
<td>Checksum test of the configuration in FLASH</td>
<td>FL.ER</td>
<td>Error in FLASH</td>
</tr>
<tr>
<td>Check measurement of analogue output current</td>
<td>AO.ER</td>
<td>1) No load on the current output (only S4..20/S20..4 mA)</td>
</tr>
<tr>
<td>Communications test DRSL-DISPLAY/DRST-UN</td>
<td>NO.CO</td>
<td>Connection error</td>
</tr>
<tr>
<td>Check that input signal matches input configuration</td>
<td>IN.ER</td>
<td>1) Error levels on input</td>
</tr>
<tr>
<td>Check that saved configuration in DRSL-DISPLAY/</td>
<td>TY.ER</td>
<td>Configuration is not DRST-UN</td>
</tr>
</tbody>
</table>

1 Error indications in the display flash once per second. The help text explains the error.
1) The error is reset by switching off and then switching on the supply voltage to the device.
Section 9.1 - Connections

Supply:

Inputs

- RTD, 2-wire
- RTD, 3- / 4-wire
- TC, internal CJC sensor
- Resistance, 2-wire
- Resistance, 3- / 4-wire
- Potentiometer
- 2-wire transmitter
- Voltage
- *TC, external CJC connector
* Order separately: CJC connector 5910

Outputs

- Current
- Voltage, 1 V
- Voltage, 10 V

mA
V

9

Diagrams
Section 9.2 - Block Diagram

Order separately: CJC connector 5910
Section 9.3 - Routing Diagram

If no key is activated for 1 minute, the display will return to the default state 1.0 without saving configuration changes.
1 Increase value / choose next parameter
2 Decrease value / choose previous parameter
3 Accept the chosen value and proceed to the next menu
Hold 3 Back to previous menu / return to menu 1.0 without saving

1.0 = Default state
Line 1 shows input signal.
Line 2 shows UNIT.
By pressing 1 and 2 simultaneously line 3 alternates between A.Out and TAG.
Line 4 shows communication status.
1.1 = Only if password-protected.
1.2 = Not valid for these input signals: 0...20 mA and voltage
1.3 = Only if input signal is temperature.

Continued on the page Routing diagram ADV.SET

Selectable UNITS:

- @C, °F, Hz, l, mm, t/h
- %, in, l/min, mm/s, uA
- A, in/h, l/s, mol, um
- bar, in/min, m, MPa, uS
- cm, m/h, mV, V
- ft, ips, m/min, MW, W
- ft/h, K, m/s, MWh, Wh
- ft/min, kA, m/s2, N, yd
- ft/s, kg, m3, Ohm, [blank]
- g, kJ, m3/h, Pa
- gal/h, kPa, m3/min, pH
- gal/min, kV, mA, rpm
- GW, kW, mbar, s
- hp, kWh, mils, S
Section 9.4 - Routing Diagram Advanced Settings

2.0 In the submenu simulation (SIM) you must press 3 to return to the default state 1.0.
Section 10.1 - General

settings which fit the application. For each menu there is a scrolling help text which is automatically shown in line 3 on the display.

Configuration is carried out by using the 3 function keys:

- \( \uparrow \) will increase the numerical value or choose the next parameter
- \( \downarrow \) will decrease the numerical value or choose the previous parameter
- \( \text{ok} \) will accept the chosen value and proceed to the next menu

When configuration is completed, the display will return to the default state 1.0.

Pressing and holding \( \text{ok} \) 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 1 minute, the display will return to the default state (1.0) without saving the changed values or parameters.

Section 10.2 - Password protection

mitter in order to ensure a high degree of protection against unauthorised modifications to the configuration. Default password 2008 allows access to all configuration menus.

Section 10.3 - Signal and sensor error info (Display front DRSL-DISPLAY)

Sensor error (see limits in the table) is displayed as SE.BR (sensor break) or SE.SH (sensor short). Signals outside the selected range (not sensor error, see table for limits) are displayed as IN.LO indicating low input signal or IN.HI indicating high input signal. The error indication is displayed in line 3 as text and at the same time the backlight flashes. Line 4 of the display is a status line which displays COM (flashing bullet) indicating correct functioning of DRSL-DISPLAY, and arrow up/down which indicates tendency readout of the input signal.
Section 10.4 - Signal and sensor error info (no display)

Status of the unit can also be read from the red/green LED in the front of the device. Green flashing LED 13 Hz indicates normal operation. Green flashing LED 1 Hz indicates sensor error. Steady green LED indicates internal error. Steady red LED indicates fatal error.

Section 10.5 - Advanced Functions

The unit gives access to a number of advanced functions which can be reached by answering “Yes” to the point “adv.set”.

Section 10.6 - Display setup

Here you can adjust the brightness contrast and the backlight. Setup of TAG number with 6 alphanumerics. Selection of functional readout in line 3 of the display - choose between readout of analogue output or TAG number.

Section 10.7 - Two-point process calibration

The unit can be process-calibrated in 2 points to fit a given input signal. A low input signal (not necessarily 0%) is applied and the actual value is entered via DRSL-DISPLAY. Then a high signal (not necessarily 100%) is applied and the actual value is entered via DRSL-DISPLAY. If you accept to use the calibration, the unit will work according to this new adjustment. If you later reject this menu point or choose another type of input signal the unit will return to factory calibration.
**Section 10.8 - Process simulation function**

If you say "yes" to the point “EN.SIM” it is possible to simulate an input signal by means of the arrow keys and thus control the output signal up or down. When you finalise the point with , the unit returns to normal mode.

**Section 10.9 - Password**

Here you can choose a password between 0000 and 9999 in order to protect the unit against unauthorised modifications to the configuration. The unit is delivered default without password. If you have locked the unit with a password by mistake, you can always open the menu by using the master password 2008.

**Section 10.10 - Language**

In the menu "lang.setup" you can choose between 7 different language versions of help texts that will appear in the menu. You can choose between UK, DE, FR, IT, ES, SE and DK.
Section 10.11 - Auto diagnosis

The unit performs an advanced auto diagnosis of the internal circuits. The following possible errors can be displayed in the front unit DRSL-DISPLAY.
- CJ.ER - CJC sensor defect or CJC temperature outside range
- FL.ER - Flash error
- AO.ER - No load on the current output (only for S4...20 mA/S20...4 mA)
- NO.CO - Connection error
- IN.ER - Error levels on input
- TY.ER - Configuration in DRSL-DISPLAY/DRST-CM does not match this product type

Section 10.12 - Selection of units

After choosing the input signal type you can choose the process units which will be displayed in text line 2 (see table). By selection of temperature input the process value is always displayed in Celsius or Fahrenheit. This is selected in the menu point after selection of temperature input.

Section 10.13 - Safety readback

When the device is delivered with default configuration, the SIL function is disabled. The safety readback function (loop surveillance) can be selected in the menu O.RANGE, thus enabling the device to run in SIL mode. In order to enable the SIL functionality, the menu item S4...20 mA must be selected. Please note, however, that when safety readback is enabled, a sensor error will be indicated as an error on the analogue output signal.
Section 10.14 - CJC

In the CJC menu you can choose between external CJC connector and internal cold junction compensation. The external CJC connector (5910) must be ordered separately.

Section 10.15 - Memory

In the memory menu you can save the configuration of the device in the DRSL-DISPLAY, and then move the DRSL-DISPLAY onto another device of the same type and download the configuration in the new device.
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