

HYDAC INTERNATIONAL


Electronic Temperature Switch

ETS 3200

for Tank Mounting

Description:

The ETS 3200 is a compact electronic temperature switch with digital display.

With its integral temperature probe, the ETS 3200 is particularly suitable for direct tank-mounting and is available in various lengths. Different output models with one or two switching outputs, optionally with an additional analogue output signal, offer a variety of application possibilities.

The switching points and the associated hystereses can be adjusted very quickly and easily using the keypad.

For optimum adaptation to the particular application, the unit has many additional adjustment parameters (e.g. switching delay times, N/C / N/O function, etc.).

Special features:

- 2 switching outputs, up to 1.2 A load per output
- Analogue output signal selectable (4 .. 20 mA / 0 .. 10 V)
- 4-digit display
- Optimum alignment - display can be rotated in two planes (axes)
- Switching / switch-back points and many useful additional functions can be set using the keypad.
- Display of temperature and unit of measurement in °C or °F

Technical specifications:

Input data	
Measuring range	-25 .. 100°C (-13 ... 212 °F)
Probe lengths	100; 250; 350 mm
Pressure resistance	50 bar
Mechanical connection	G1/2 A DIN 3852
Torque value	45 Nm
Parts in contact with medium	Mech. connection: Stainless steel Seal: FPM
Output data	
Accuracy (display, analogue output)	≤ ± 1.0 °C (≤ ± 2.0 °F)
Temperature drift (environment)	≤ ± 0.015 % FS / °C max. zero point ≤ ± 0.015 % FS / °C max. range
Analogue output (optional)	
Signal	selectable: 4 .. 20 mA ohmic resist. max. 500 Ω 0 .. 10 V ohmic resistance min. 1 kΩ corresponds in each case to -25 .. +100 °C
Switching outputs	
Type	PNP transistor switching outputs
Switching current	max. 1.2 A per output
Switching cycles	> 100 million
Rise time to DIN EN 60751	t ₅₀ ⁺ : 8 s t ₅₀ ⁻ : 15 s
Ambient conditions	
Ambient temperature range	-25 .. +80°C (-25 ... +60°C acc. to UL spec.)
Storage temperature range	-40 .. +80 °C
Fluid temperature range	-40 .. +100 °C
CE mark	EN 61000-6-1 / 2 / 3 / 4
UL mark*	Certificate No.: E 318391
Vibration resistance to DIN EN 60068-2-6 (0 .. 500 Hz)	≤ 10 g
Shock resistance to DIN EN 60068-2-29 (11 ms)	≤ 50 g
Protection class to DIN 40050	IP 67
Other data	
Supply voltage	9 .. 35 V DC without analogue output 18 .. 35 V DC with analogue output - limited energy - according to 9.3 UL 61010; Class 2; UL 1310/1585; LPS UL 60950
for use acc. to UL spec.	
Current consumption	max. 2.455 A total max. 35 mA with inactive switch outputs max. 55 mA with inactive switch outputs and analogue output
Residual ripple of supply voltage	≤ 5 %
Display	4-digit, LED, 7 segment, red, height of digits 7 mm
Weight	approx. 150 g (Probe length 100 mm) approx. 185 g (Probe length 250 mm) approx. 210 g (Probe length 350 mm)

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range
* Environmental conditions according to 1.4.2 UL 61010-1; C22.2 No 61010-1

E 18.319.2/03.11

Setting options:

All the settings available on the ETS 3200 are combined in two easy-to-follow menus. To prevent unauthorised adjustment of the unit a program disable can be activated.

Setting ranges of the switching points and switch-back hystereses:

Switch point function

Unit	Switching point	Hysteresis	Increment*
°C	-23.0 .. 100.0	1.0 .. 123.5	0.5
°F	-9 .. 212	2 .. 222	1

Window function

Unit	Lower switch value	Upper switch value	Increment*
°C	-23.0 .. 97.5	-22.0 .. 98.5	0.5
°F	-9 .. 208	-7 .. 209	1

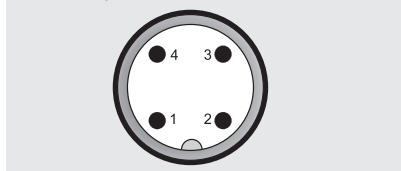
* All ranges given in the table are adjustable by the increments shown.

Additional functions:

- Switching mode of the switching outputs adjustable (switching point function or window function)
- Switching direction of the switching outputs adjustable (N/C or N/O)
- Switch-on and switch-back delay adjustable from 0.00 .. 99.99 seconds
- Choice of display (actual temperature, peak temperature, switching point 1, switching point 2, display off)

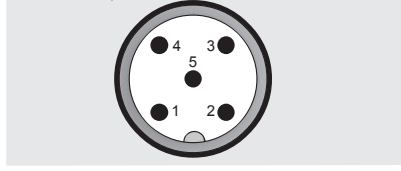
Pin connections:

M12x1, 4 pole



Pin	ETS 3226-2	ETS 3226-3
1	+U _B	+U _B
2	SP 2	Analogue
3	0 V	0 V
4	SP 1	SP 1

M12x1, 5 pole



Pin	ETS 3228-5
1	+U _B
2	Analogue
3	0 V
4	SP 1
5	SP 2

Model code:

ETS 3 2 2 X - X - XXX - 000

Mechanical connection

2 = G1/2 A DIN 3852 (male)

Electrical connection

6 = M12x1, 4 pole, male
only possible on output models "2" and "3"

8 = M12x1, 5 pole, male
only possible on output model "5"

Output

2 = 2 switching outputs
only in conjunction with electrical connection "6"

3 = 1 switching output and 1 analogue output
only in conjunction with electrical connection type "6"

5 = 2 switching outputs and 1 analogue output
only in conjunction with electrical connection type "8"

Probe length in mm

100; 250; 350

Modification number

000 = standard

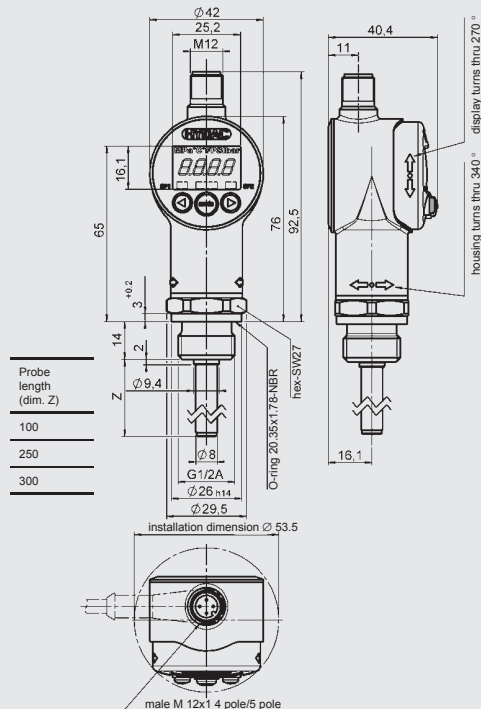
Note:

On instruments with a different modification number, please read the label or the technical amendment details supplied with the instrument.

Accessories:

Appropriate accessories, such as electrical connectors, splash guards, etc. can be found in the Accessories section.

Dimensions:



Note:

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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