



Temperature Switch ETS 3200

Integrated temperature probe

Display

Up to 2 switching outputs
Analogue output



Description:

The ETS 3200 is a compact electronic temperature switch with a 4-digit display.

With its integrated temperature probe, the ETS 3200 is particularly suitable for direct tank installation and is available in various lengths.

Pressure-resistant up to 600 bar with an integrated 18 mm temperature probe, this model can be mounted directly inline or on the hydraulic block.

Different output models with one or two switching outputs, optionally with an additional analogue output signal, offer a variety of application possibilities.

The switch points and the associated hystereses can be adjusted very quickly and easily using the key pad.

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

The ETS 3200 is also available in a variant with menu navigation in accordance with VDMA.

Technical data:

Input data					
Measuring range	-25 .. +100 °C (-13 .. +212 °F)				
Probe length	mm	18	100	250	350
Probe diameter	mm	6	8	8	8
Pressure resistance	bar	600	50 ¹⁾	50 ¹⁾	50 ¹⁾
Mechanical connection	G1/2 A ISO 1179-2				
Tightening torque, recommended	45 Nm				
Parts in contact with fluid	Mech. connection: Stainless steel Seal: FKM				
Output data					
Switching outputs	1 or 2 PNP transistor outputs Switching current: max. 1.2 A per output Switching cycles: > 100 million				
Analogue output, permitted load resistance	Selectable: 4 .. 20 mA load resist. max. 500 Ω 0 .. 10 V load resist. min. 1 kΩ				
Accuracy (at room temperature)	≤ ± 1.0 °C (≤ ± 2.0 °F)				
Temperature drift (environment)	≤ ± 0.015 % FS / °C				
Response time acc. to DIN EN 60751	t ₉₀ :	3 s	8 s	8 s	8 s
	t ₉₅ :	9 s	15 s	15 s	15 s
Repeatability	≤ ± 0.25 % FS max.				
Environmental conditions					
Operating temperature range	-25 .. +80 °C (-13 .. +176 °F) (-25 .. +60 °C [-13 .. +140 °F] for UL-Spec.)				
Storage temperature range	-40 .. +80 °C (-40 .. +176 °F)				
Fluid temperature range ²⁾	-40 .. +100 °C / -25 .. +100 °C (-40 .. +212 °F / -13 .. +212 °F)				
CE mark	EN 61000-6-1 / -2 / -3 / -4				
cULus mark ³⁾	Certificate-No.: E318391				
Vibration resistance acc. to DIN EN 60068-2-6 at 0 .. 500 Hz	≤ 10 g				
Shock resistance acc. to DIN EN 60068-2-27 (11 ms)	≤ 50 g				
Protection class acc. to DIN EN 60529 ⁴⁾	IP 67				
Other data					
Supply voltage	9 .. 35 V DC, without analogue output 18 .. 35 V DC, with analogue output				
when applied acc. to UL specifications	- limited energy – acc. to 9.3 UL 61010; Class 2; UL 1310 / 1585; LPS UL 60950				
Residual ripple of supply voltage	≤ 5 %				
Current consumption	≤ 2.455 A total ≤ 35 mA with inactive switching outputs ≤ 55 mA with inactive switching output and analogue output				
Display	4-digit, LED, 7-segment, red, height of digits 7 mm				
Weight	g	~ 135	~ 150	~ 185	~ 210

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

FS (Full Scale) = relative to complete measuring range

¹⁾ Higher pressure resistance on request

²⁾ -25 °C with FKM seal, -40 °C on request

³⁾ Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 No. 61010-1

⁴⁾ With mounted mating connector in corresponding protection class

Setting options: Standard design

All the settings available on the ETS 3200 are combined in two easy-to-navigate menus. In order to prevent unauthorised adjustment of the device, a programming lock can be set.

Setting ranges for the switching outputs:

Switch point function

Unit	Switch point	Hysteresis	Increment*
°C	-23.0 .. 100.0	1.0 .. 123.5	0.5
°F	-10 .. 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	-10 .. 208	-7 .. 209	1

* All ranges given in the table can be adjusted by the increments shown.

Setting options: menu navigation acc. to VDMA

All terms and symbols used for setting the ETS 3200 as well as the menu structure comply with the specifications in the VDMA Standard (VDMA 24574-2) for temperature switches.

The ETS 3200 can easily be adjusted via three push-buttons.

Setting ranges for the switching outputs:

Measuring range	Lower limit of RP / FL	Upper limit of SP / FH
-25 .. +100 °C	-23.5 °C	100.0 °C
-13 .. +212 °F	-11 °F	212 °F

Measuring range	Min. difference betw. RP and SP & FL and FH	Increment*
-25 .. +100 °C	1.5 °C	0.5 °C
-13 .. +212 °F	2 °F	1 °F

* All ranges given in the table can be adjusted by the increments shown.

SP = switch point

RP = switch-back point

FL = temperature window lower value

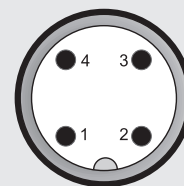
FH = temperature window upper value

Additional functions:

- Switching mode of the switching outputs adjustable (switch point function or window function)
- Switching direction of the switching outputs adjustable (N/C or N/O function)
- Switch-on and switch-off delay adjustable from 0.00 .. 99.99 seconds
- Analogue output signal selectable 4 .. 20 mA or 0 .. 10 V
- Display of the actual temperature in °C or °F.
- Choice of display (actual temperature, peak temperature, switch point 1, switch point 2; additional, in standard version, display off)

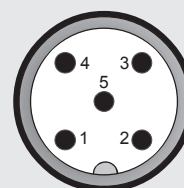
Pin connections:

M12x1, 4 pole



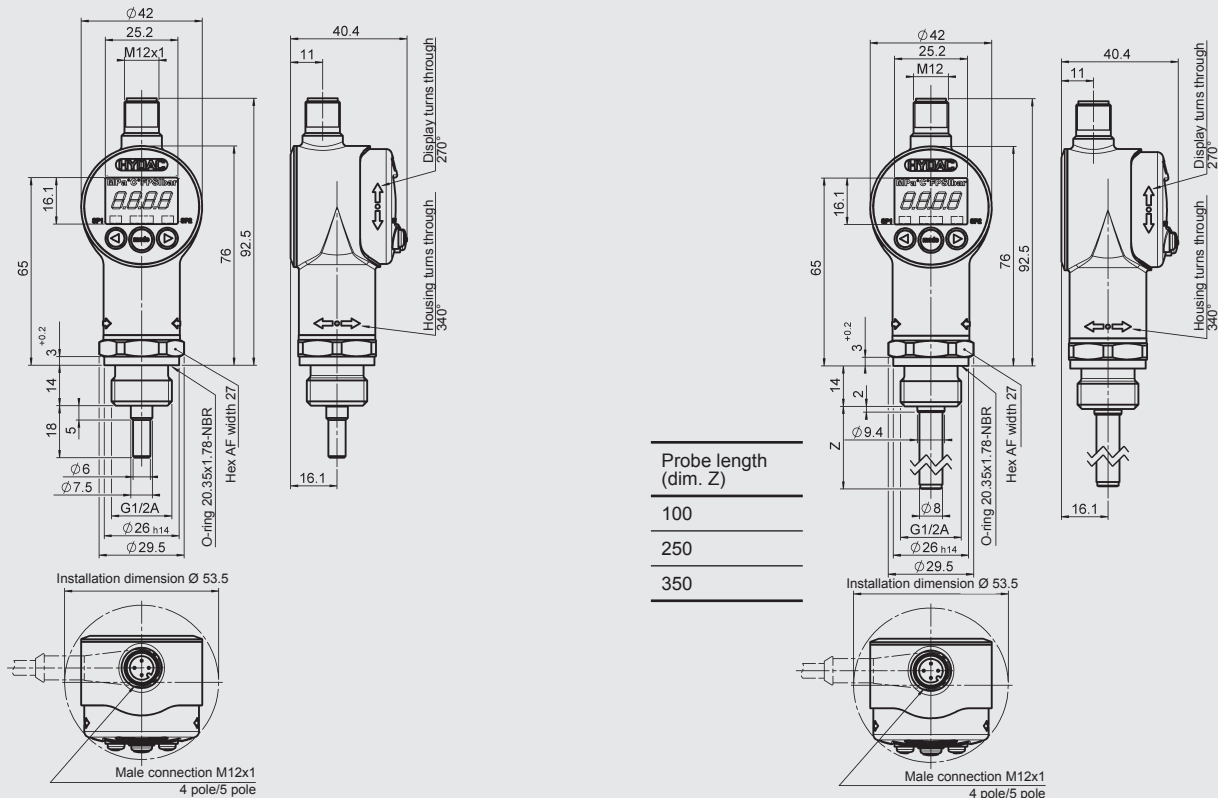
Pin	ETS 3226-2	ETS 3226-3
1	+U _B	+U _B
2	SP2	Analogue
3	0 V	0 V
4	SP1	SP1

M12x1, 5 pole



Pin	ETS 3228-5
1	+U _B
2	Analogue
3	0 V
4	SP1
5	SP2

Dimensions:



Model code:

ETS 3 2 2 X - X - XXX - X00

Type

2 = with integrated temperature probe

Mechanical connection

2 = G1/2 A ISO 1179-2

Electrical connection

- 6 = male M12x1, 4 pole
only possible on output models "2" and "3"
(mating connector not supplied)
- 8 = male M12x1, 5 pole
only possible on output model "5" and modification "000"
(mating connector not supplied)

Output

- 2 = 2 switching outputs
only in conjunction with electrical connection type "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 code type "8"
and modification "000"

Probe length in mm

018; 100; 250; 350

Modification number

000 = standard
V00 = menu navigation acc. to VDMA (standard sheet 24574)

Accessories:

Appropriate accessories, such as mating connectors, protective sleeves for tank installation and splash guards, can be found in the Accessories brochure.

Note:

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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