

# H100 DO Transmitter

## Specification Data Sheet

Hamilton H100 DO Transmitter combines ease of use and reliability. It has been designed for universal process application including use in pharmaceutical, chemical, food & beverage industries as well as water / waste water treatment. The self-explaining user interface ensures comfortable and intuitive handling. Hamilton H100 DO Transmitter provides continuous sensor monitoring and preventive maintenance indication for maximal reliability.



### H100 DO Specifications

#### DO input

Measuring current	-2 ... +1800 nA
Resolution (at $V_{pol} \leq 800$ mV and $V_{ref} \leq 200$ mV)	0.05 nA
Saturation (-10 ... 80 °C)	0 ... 200 %
Measurement error <sup>1, 2, 3)</sup>	0.5 % meas.val. + 0.5 %
Concentration (-10 ... 80 °C)	0.00 ... 20.00 mg/l
	0.00 ... 20.00 ppm
Measurement error <sup>1, 2, 3)</sup>	0.5 % meas.val. + 0.05 mg/l (0.05 ppm)
Permitted guard current	$\leq 20$ $\mu$ A
Polarization voltage <sup>1)</sup>	0 ... 1000 mV
Process pressure <sup>1)</sup>	0.000 ... 9.999 bar (... 999.9 kPa / ... 145.0 psi)
Salinity correction <sup>1)</sup>	00.00 ... 45.00 g/kg

#### Sensor standardization

Operating modes <sup>1)</sup>	O2 saturation (automatic)	O2 concentration (automatic)
	Product calibration	Zero calibration
Calibration range	Zero point	$\pm 2$ nA
Sensor type A	Slope	25 ... 130 nA (at 25 °C, 1013 mbar)
Calibration range	Zero point	$\pm 2$ nA
Sensor type B	Slope	200 ... 550 nA (at 25 °C, 1013 mbar)
Calibration timer <sup>1)</sup>	0000 ... 9999 h	
Pressure correction <sup>1)</sup>	0.000 ... 9.999 bar / 999.9 kPa / 145.0 psi	

#### Sensor monitoring

Sensocheck®	Monitoring for short circuits / open circuits (can be disabled)
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Sensoface®	Provides information on the sensor condition (evaluation of zero/slope, response time, calibration interval, Sensocheck®)
<b>Temperature input <sup>1)</sup></b>	NTC 22 kOhm / NTC 30 kOhm
	2-wire connection, adjustable
Measuring range	-20.0 ... +150.0 °C / -4 ... +302 °F
Adjustment range	10 K
Resolution	0.1 °C / 1 °F
Measurement error <sup>1, 2, 3)</sup>	< 0.5 K (< 1 K at > 100 °C)
<b>Output 1</b>	0/4 ... 20 mA, max. 10 V, floating (galvanically connected to output 2)
Process variable <sup>1)</sup>	DO saturation / DO concentration
Overrange <sup>1)</sup>	22 mA in the case of error messages
Output filter <sup>1)</sup>	Low-pass, filter time constant: 0 ... 120 s
Measurement error <sup>1)</sup>	< 0.3 % current value + 0.05 mA
Start/end of scale <sup>1)</sup>	As desired within range
Permissible span	5 ... 200 % / 0.5 ... 20 mg/l (ppm)
<b>Output 2</b>	0/4 ... 20 mA, max. 10 V, floating (galvanically connected to output 1)
Measured variable	Temperature
Overrange <sup>1)</sup>	22 mA in case of temp error messages
Output filter <sup>1)</sup>	Low-pass, filter time constant: 0 ... 120 s
Measurement error <sup>1)</sup>	< 0.3 % current value + 0.05 mA
Start/end of scale <sup>1)</sup>	-20 ... +150 °C / -4 ... 302 °F
Permissible span	20 ... 170 K / 36 ... 366 °F
<b>Alarm contact</b>	Relay contact, floating
Contact ratings	AC < 250 V / < 3A / < 750 VA DC < 30 V / < 3A / < 90 W
Contact response	N/C (fail-safe type)
Response delay	10 s
<b>Limit Value</b>	Output via relay contact
Contact ratings	AC < 250 V / < 3A / < 750 VA DC < 30 V / < 3A / < 90 W
Contact response <sup>1)</sup>	N/C or N/O
Delay <sup>1)</sup>	0000 ... 9999 s
Setpoint <sup>1)</sup>	Within selected range
Hysteresis <sup>1)</sup>	000.0 ... 050.0% / 00.00 ... 05.00 mg/l (ppm)
<b>Rinsing function</b>	Relay contact, floating, for controlling a simple rinsing system
Contact ratings	AC < 250 V / < 3A / < 750 VA DC < 30 V / < 3A / < 90 W
Contact response	N/C or N/O

Rinse interval	000.0 ... 999.9 h (000.0h = cleaning function switched off)
Rinse duration	0000 ... 1999 s
<b>Display</b>	LC display, 7-segment with icons
Main display	Character height 17 mm, unit symbols 10 mm
Secondary display	Character height 10 mm, unit symbols 7 mm
Sensoface®	3 status indicators (friendly, neutral, sad face)
Mode indication	4 mode indicators: meas, cal, alarm, config. Further icons for configuration and messages
Alarm indication	Red LED in case of alarm
<b>Keypad</b>	5 keys: [cal] [conf] [▲] [▶] [enter]
<b>Service functions</b>	
Current source	Current can be specified for output 1 and 2 (00.00 ... 22.00 mA)
Device self-test	Automatic memory test (RAM, FLASH, EEPROM)
Display test	Display of all segments
Last Error	Display of last error occurred
Sensor monitor	Display of direct, uncorrected sensor signal
<b>Data retention</b>	Parameters and calibration data > 10 years (EEPROM)
<b>Protection against electric shock</b>	Protective separation of all extra-low-voltage circuits against mains by double insulation to EN 61010-1
<b>Power supply</b>	24 (–15 %) ... 230 (+10 %) V AC/DC; approx. 5 VA, 2.5 W AC: 45 ... 65 Hz Overvoltage category II, protection class II
<b>Nominal operating conditions</b>	
Ambient temperature	–20 ... +55 °C
Transport/Storage temp	–20 ... +70 °C
Relative humidity	80% at temperature up to 55 °C Maximum operating height 2000m
<b>EMC</b>	EN 61326-1, EN 61326-2-3
Emitted interference	Class B (residential area), Class A for mains > 60 V DC
Immunity to interference	Industry
<b>Explosion protection</b>	
<b>FM</b>	NI Class I Div 2 Group A, B, C & D, T4 Ta = 55 °C; Type 2 NI Class 1 Zone 2 Group IIC, T4 Ta = 55 °C; Type 2
<b>Housing</b>	Molded enclosure made from PBT (polybutylene terephthalate)
Color	Bluish gray RAL 7031
Mounting	Wall mounting, pipe mounting 243082 (Ø 40 ... 60 mm, □ 30 ... 45 mm) panel mounting 243083 (cutout to DIN 43 700, sealed against panel)
Dimensions	H 144 mm, W 144 mm, D 105 mm
Ingress protection	IP 65 / NEMA 4X
Cable glands	3 knockouts for cable glands M20x1.5 2 knockouts for NPT ½" or rigid metallic conduit
Weight	Approx. 1 kg

\*) User-defined; **1)** To IEC 746 Part 1, at nominal operating conditions; **2)** ±1 count; **3)** Plus sensor error



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