

# TestMate® Water Sensor | TWS-D

## Introduction

The TWS-D with an integrated digital display is based on the proven TWS-C series for the on-line detection of water in oils, particularly as a sensor for Condition Monitoring. The TestMate® water sensor provides early detection of water problems thus preventing faults and unnecessary interruption to operations. The device has 2 switching outputs and one reversible analogue output signal (4-20 mA or 0-10 V selectable). The TWS-D detects the water saturation level and temperature of the fluid and transmits the values in the form of an analogue signal. The 4-digit digital display is capable of rotation around both axes enabling optimal alignment. All settings available on the TWS are grouped in 2 easy-to-navigate menus. The following parameters can be modified:

- Saturation level/temperature
- Switching points
- Switching mode of switching outputs
- Switching direction
- Switching delay times

The TWS-D thus enables a continuous monitoring of hydraulic and lubrication oils; precise, permanent and on-line.

## Features

- 4 - digit digital display, can be aligned in two axes
- User friendly key programming
- Reliable compact rugged design
- No calibration necessary for different oil types



TWS-D

## Specifications

Input Data	Measuring Range:	0 to 100% Saturation; -13°F to 212°F (25°C to 100°C)	
	Operating Pressure:	-7.25 to 725 psi max (-0.5 to 50 bar)	
	Burst Pressure:	9135 psi (630 bar) max	
	Parts in Contact with Media:	Connection Point: Stainless Steel/Ceramic with vacuum-metalized metal Seal: EPDM or Viton	
Output Data	<b>Humidity Measurement</b>		
	Output Signal (saturation level):	4 to 20 mA	
	Calibrated Accuracy:	≤ ± 2% FS max	
	Accuracy in Media Measurements:	≤ ± 3% FS typ.	
	Pressure-dependent:	+ 0.02% FS/bar	
Output Data	<b>Temperature Measurement</b>		
	Output Signal (temperature):	4 to 20 mA	
	Accuracy:	± 2% FS max	
Ambient Conditions	Nominal Temperature Range (saturation level measuring):	32°F to 176°F (0°C to 80°C)	
	Ambient Temperature Range:	-40°F to 176°F (-40°C to 80°C)	
	Fluid Temperature Range:	-40°F to 176°F (-40°C to 80°C)	
	Viscosity Range:	32 to 23,175 SUS (1 to 5000 cSt)	
	Flow Velocity:	Maximum 16 ft/s	
	Media Tolerance:	Mineral oil-based fluids, natural and synthetic esters	
	Mark:	EN 50081-1, EN 50081-2, EN 50082-1, EN 61000-6-1-2-3-4	
	Type of Protection acc. DIN 40050:	IP 67	
	Other Data	Supply Voltage:	18 to 35 VDC
		Residual Ripple Supply Voltage:	≤5%
Mechanical Connection:		G3/8A DIN 3852	
Torque Rating:		18.5 ft-lbs	
Electrical Connection:		M12x1, 5 pole (DIN VDE 0627)	
		Pin 1: +Ub Pin 2: Analog output Pin 3: 0V / GND Pin 4: SP 1 (alarm) Pin 5: SP 2 (warning)	