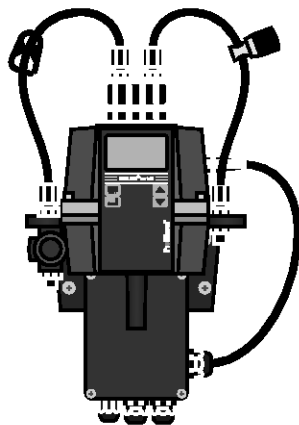


7.5 DULCOTEST® Measuring Points for Turbidity

7.5.1 Measuring Points for Turbidity



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The new DULCOTEST® measuring points for turbidity in the DULCO® turb C range with versions TUC1, TUC2, TUC3 and TUC4, are compact online turbidity measuring points, consisting of a sensor, inline flow fitting and measuring device. The measuring device permits the measured value to be displayed, calibration, transmission of the measured value via a 4-20 mA signal and the indication of limit value transgressions and device faults. The measuring cuvette integrated in the measuring device enable the device to operate in the bypass of the process line. The visual measuring unit does not come into contact with the sample medium.

The intended application is the treatment of drinking water, whereby the DULCO® turb C can be used in all treatment stages of raw water, from filter monitoring to measurement of fine turbidity in dispensed drinking water. It is also possible to monitor the turbidity of slightly contaminated process water and waste water, as well as treated water from the food and beverage industry up to a turbidity value of 1,000 NTU. Compared with the TUC 1 / TUC 2, the measuring stations TUC 3 / TUC 4 include an ultrasound-based self-cleaning function. This helps in particular to extend the service intervals particularly when used with the types of water that form films.

The measuring principle is identical to light scatter measurements. The light beam that is beamed into the measuring cuvette filled with sample water is dispersed on turbidity particles and the scattered light is measured at right angles (90°) to the beamed in light (Nephelometric measurement). The measuring unit for the turbidity measurement can be given as NTU (Nephelometric Turbidity Unit) or as FNU (Formazin Nephelometric Unit). The measuring process of types TUC1/TUC3 (infrared light) corresponds to the globally applicable standard ISO 7027 and the European Standard DIN EN 27027. The measuring process of types TUC3/TUC4 (achromatic light) corresponds to the US American standard USEPA 180.1.

Technical Data

Measurement range	0 ... 1,000.0 NTU
Accuracy	± 2 % of the displayed value or ± 0.02 NTU below 40 NTU, depending on which value is the greater ± 5 % of the displayed value above 40 NTU
Resolution	0.0001 NTU below 10 NTU
Response time	configurable
Display	Multiple row LCD display with background lighting
Alarm relay	Two programmable alarms, 120-240 VAC, 2 A Form C relay
Output signal	4 ... 20 mA, 600 Ω, not electrically isolated: dual-isolated, degree of interference, overvoltage category II
Communication interface	Bi-directional RS-485, Modbus
Max. pressure	Integrated pressure regulating valve regulates 1380 kPa (200 psi), based on the flow rate
Flow	6 – 60 l/h
Temperature	1 ... 50 °C
Material that comes into contact with the media	Polyamide (PA), silicone, polypropylene (PP), stainless steel, borosilicate glass
Voltage supply	100 - 240 VAC, 47-63 Hz, 80 VA
Ambient conditions	Nicht geeignet für den Gebrauch im Freien. Einsatzhöhe maximal 2000 m ü NN. Maximal 95 % relative Luftfeuchtigkeit (nicht kondensierend).
Enclosure rating	IP 66
Standard	USEPA 180.1 with the "Infrared" version, ISO 7027 or DIN EN 27027 with the "Achromatic light" version
Dimensions H x W x D	35 x 30 x 30 cm
Shipping weight	2.5 kg

	Standard	Ultraschallreinigung	Order no.
TUC 1	Infrared: ISO 7027, DIN EN 27027	No	1037696
TUC 2	Achromatic light: US EPA 180.1	No	1037695
TUC 3	Infrared: ISO 7027, DIN EN 27027	Yes	1037698
TUC 4	Achromatic light: US EPA 180.1	Yes	1037697