SD 073C/07/en
Nr. 51507143

Service Procedures CUS 31 / CUS 31 W

Application: Raw Water / Drinking Water

Calibration

In operating mode **„FNU“** each sensor together with the assembly is factory calibrated according to the standard description of the Turbidity Method EN ISO 7027. The preparation of standard solutions and the calibration procedure is carried out automatically under controlled conditions and is surveyed by the Quality Management System of Endress+Hauser (see QUALITY CERTIFICATE attached). The calibration is long term stable under certified and non-destructive operation conditions.

Note:
On-site calibration in the turbidity range < 5 FNU is not recommended due to the inaccuracies in preparing and handling the standard solutions.

Maintenance

No	Maintenance Action	Maintenance Period	Who, Estimated Time	Tool needed by Service/Customer
1.	Adjustment of duration of wiper operation to **20 sec.**	Once after installation	Customer/ Service, 1 minute	none
2.	Adjustment of pause between 2 wiper cycles to **30 min up to 120 min**	Once after installation	Customer/ Service, 1 minute	none
3.	Sensor Check without assembly	Every ½ year	Service, Customer, 15 minutes	Sensor Check Unit CUY 22 acc. to BA 226C/07/en
4.	Adaption for Reflection effects in case of coverage of assembly by water inpurities (see Appendix)	Every ½ year	Service, Customer, 30 minutes	1) 2 filter cartridges a) pre cartridge 1.2 µm b) main cartridge 0.2 µm 2) tap water <2FNU, > 2bar, >50 l/h
5.	1) Recalibration for applications leading to coverage of the optics 2) Check of wiper axes and sealings in cases of hard waters, high contents of inorganic inpurities	Every year, optional	Endress+Hauser In average: 8.5 calendary days (without delivery time)	

Service Schedule

Maintenance actions 3. and 4. should be carried out together every ½ year. Maintenance action 5. including recalibration of the sensors together with the original assembly is optional for prevention purposes once a year. This can be carried out together with a general check of the sensor by Endress+Hauser.

Appendix

Maintenance Action 4: adaption for reflection effects

1) For production of „ultra low turbid water“ near the theortical value of 0.010 FNU two filter cartridges in series are used. The water supply is connected to the pre cartridge with pore size of 1,2 µm. The outlet of the pre cartridge is connected via a tube to the second cartridge with a pore size of 0.2 µm.
2) The water supply (for example tap water) should meet the following requirements :
   a) turbidity < 2 FNU b) pressure > 2 bar c) flow rate > 50 l/ h.
3) Before connecting the outlet of the filter unit to the S assembly, the filter unit is rinsed for 10 minutes.
4) The S assembly including the sensor is connected to the outlet of the filter unit. Then the assembly is rinsesd for about 10 minutes.
5) Adjust the Liquisys function **B6 "Display measured value with reflection adaption"** to **no.**
6) Return to the measuring mode and wait for a stable reading of the measured value (now including reflection by the assembly).
7) Carry out the function **C14 "adaption for reflection"** in Liquisys and input the value of the filtered water: **0.010 FNU**. Store the result.
8) After successful finishing, the reflection adaption is switched on automatically and the read out of measured value for the filtered water should be about **0.010 FNU.**