

StamoSens CNM 750 / CNS 70

System for Online Nitrate Measurement



The StamoSens Sensor CNS 70 and the Transmitter CNM 750 form an analysis system for continuous nitrate measurement. It is specially designed to monitor the denitrification process and the outlet of wastewater treatment plants. The nitrate content is determined using a turbidity compensating multiple beam method.

Applications

- Monitoring of nitrate content in the outlet of wastewater treatment plants
- Monitoring and optimising denitrification processes

Features and benefits

- Economy-priced and ecological measuring process
- No sample taking or conditioning system required
- No chemicals required
- Service friendly design
- Very short response time
- In-situ calibration
- Measured value preparation in the sensor, therefore low interference susceptibility on signal transfer
- Measured values stored by data logger
- Menu-driven parameter setting and calibration

Endress+Hauser

The Power of Know How



Measuring system

The complete measuring system consists of

- the StamoSens Nitrate Sensor CNM 70
- the StamoSens Transmitter CNM 750

Optional:

- Immersion tube

Complete measuring system

StamoSens CNM 750 transmitter with CNS 70 sensor



NM750-01.TIF

Measuring principle

The measuring principle of the nitrate sensor is based on self-UV absorption by nitrate.

The water or sludge sample is irradiated by UV light. The transmission light is diverted to photoreceivers by means of an optical system consisting of mirrors and lenses. A reference light is used for compensation of absorption caused by suspended solids or organic substances.

An optional automatical self cleaning device provides stable and correct measurements even under difficult conditions.

The in-situ calibration feature provides a perfect adaptation of the measuring system to the wastewater requirements.

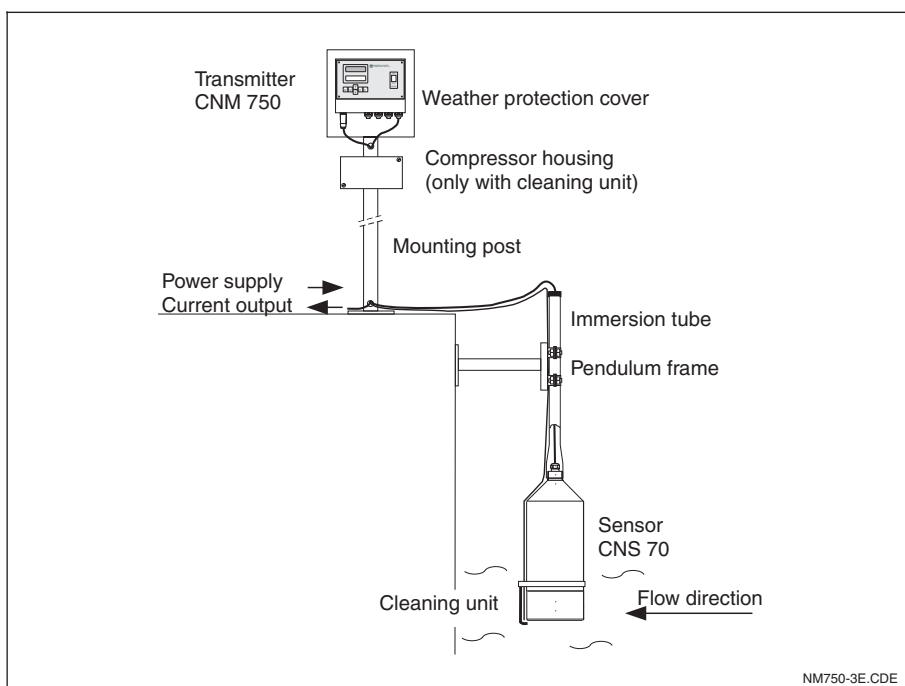
Installation

The StamoSens sensor CNS 70 is screwed in an immersion tube and is directly immersed into the medium by a pendulum frame. Due to the direct immersion, no additional sample taking or sample preparing equipment are required.

Alternatively it can be combined with a flow-through chamber.

The transmitter CNM 750 could both be installed close to the sensor as well as in a few meters distance.

Installation of the measuring system StamoSens CNM 750 with CNS 70



NM750-3E.CDE

Technical data

Transmitter CNM 750

General data	Manufacturer	Endress+Hauser
	Product designation	StamoSens Transmitter CNM 750
Mechanical data	Dimensions of transmitter (h x w x d)	185 x 241 x 114,5 mm
	Weight	1.6 kg
Input	Accuracy	±2 % of upper range value (referred to standard solutions)
	Reproducibility	0.5 %
	Displays	2-line LC display (5 mm) for programming LED display (12 mm) for measured values
	Measurement unit	mg/l NO ₃ -N (nitrogen), mg/l NO ₃ (nitrate)
Output	Current output	0/4 ... 20 mA, galvanically separated
	Load	max. 500 Ω
	Relay outputs	2 limit contacts, error signal, Hold function, sensor cleaning feature
	Contact switching power	230 V AC / 3 A; 30 V DC / 1 A
	Communication interface	RS 232, slot for bus expansion
Electrical data	Power supply	80 ... 250 V AC ±10 %, 50 / 60 Hz 24 V AC / DC
	Power consumption	max. 15 VA
Ambient conditions	Ambient temperature	-20 ... + 60 °C

Nitrate Sensor CNS 70

General data	Manufacturer	Endress+Hauser
	Product designation	StamoSens Nitrate Sensor CNS 70
Mechanical data	Dimensions (L x Ø)	359 x Ø 127 mm
	Weight	ca. 5 kg
Materials	Sensor head	Stainless steel SS 316 Ti with quartz glass window
	Sensor body	Polyoxymethylene POM (polyacetals) black
	Protection class	IP 68 (<1 bar)
Process connection	Sensor head	G 1 1/2
	Cable length	7 m / 15 m, max. length 200 m
Nitrate measurement	Measuring principle	Multiple beam photometer
	Optical measuring system	UV strobe lamp, measuring light and reference light photoreceiver
	Wavelength	Measuring light at the nitrate absorption maximum Reference light to compensate suspended solids and organic substances
	Measuring range of clear water	0.2 ... 60 ppm NO ₃ -N resp. 0 ... 260 ppm NO ₃ (mg/l)
	Measuring range of activated sludge	0.2 ... 30 ppm NO ₃ -N bzw. 0 ... 130 ppm NO ₃ (mg/l)
	Solids content	< 8 g/l
Operating data	Medium temperature	+2 ... +40 °C
	Medium pressure	max. 1 bar

Subject to modifications.

Accessories

- ❑ Weather protection cover CYY 101
Order no.: 50061258
- ❑ Mounting post CYY 102
Order no.: 50064291
- ❑ Wall bracket for CNS 70
Order no.: 51508576
- ❑ Flow vessel without dead volume reduction with hose sleeve 6.4 mm
Order no.: 51508578
- ❑ Extension cable 10 m, plug, socket
Order no.: 51502953
- ❑ Plug IP 67
Order no.: 51502954
- ❑ Socket
Order no.: 51502955
- ❑ Sensor connecting enclosure IP 65
Order no.: 51502956
- ❑ Immersion tube 2 m
Order no.: 51502959
- ❑ Immersion tube 3 m
Order no.: 51502960
- ❑ Immersion tube, special length
Order no.: 50066036
- ❑ Pendulum frame at 250 mm wall distance
Order no.: 51502962
- ❑ Special version pendulum frame
Order no.: 50066036
- ❑ Control cable
Order no.: 51503015

Product structure

StamoSens Transmitter for Nitrate CNM 750					
<p>Power supply 7 80 ... 250 V AC 8 24 V AC / DC</p> <p>Communication / current output A . . RS 232 and 0/4 ... 20 mA</p> <p>Version 1 Single-channel version</p> <p>Additional equipment A Quality certificate</p>					
CNM 750-					complete order code
StamoSens Nitrate Sensor CNS 70					
<p>Application A Clear water applications B Activated sludge applications with cleaning unit 230 V C Activated sludge applications with cleaning unit 115 V</p> <p>Measuring range 4 Measuring range 0.2 ... 30 ppm NO₃-N (Activated sludge) 5 Measuring range 0.2 ... 60 ppm NO₃-N (Clear water)</p> <p>Cable length B 7 m D 15 m</p> <p>Versions 1 without assembly 2 with immersion tube 2 m and pendulum frame 3 Sensor seawater resistant</p> <p>Additional equipment A Quality certificate</p>					
CNS 70-					complete order code

Endress+Hauser GmbH+Co.
- Instruments International -
P.O. Box 2222
D-79574 Weil am Rhein
Tel. (07621) 975-02
Fax (07621) 975-345
E-Mail: ehii@compuserve.com

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