

## Modbus/TCP Connection and Setup Guide

### Cable and connection: (p35-36, 41)

A patch/crossover cable with an RJ45 connector is required to use the Ethernet interface.

- The Ethernet interface can be configured directly on the device.
- DHCP and DNS are also supported. It is possible to obtain the IP configuration. automatically via DHCP. If necessary, the IP configuration can also be set up manually.
- In the N<sub>2</sub>O Wastewater System, the **TCP port 502** is set permanently to Modbus/TCP and cannot be changed.
- Bus users are identified by their IP address. The **Unit ID** (Modbus device address in the Modbus/TCP telegram) is set permanently to **255** (See “Modbus/TCP” on page 41.)

### Address table:

#### N<sub>2</sub>O concentration and emission

Hex	Dec	Data type	Access	Data	Value Note
16BB	5819	float	r/o	Measured temperature value IN 4	Temperature value Sensor 1 (°C, degrees)
16BD	5821	float	r/o	Measured temperature value IN 5	Temperature value Sensor 2 (°C, degrees)
1BEE	7134	float	r/o	Calculated result formula 14*	N <sub>2</sub> O Concentration value Sensor 1 (g/m <sup>3</sup> N-N <sub>2</sub> O)
1BE2	7138	float	r/o	Calculated result formula 16*	N <sub>2</sub> O Concentration value Sensor 2 (g/m <sup>3</sup> N-N <sub>2</sub> O)
15C9	5577	float	r/o	Calculated result formula 3	N <sub>2</sub> O Emission value Sensor 1 (g/m <sup>3</sup> /day N-N <sub>2</sub> O)
15CB	5579	float	r/o	Calculated result formula 4	N <sub>2</sub> O Emission value Sensor 2 (g/m <sup>3</sup> /day N-N <sub>2</sub> O)

\*Replaces old N<sub>2</sub>O concentration value for Sensor 1 and 2

#### N<sub>2</sub>O Sensor Info, alarm, and calibration Information

Hex	Dec	Data type	Access	Data	Value Note
15A5	5541	uint32	r/o	Remaining time to calibration N <sub>2</sub> O Sensor 1	Time in seconds
15A7	5543	uint32	r/o	Remaining time to calibration N <sub>2</sub> O Sensor 2	Time in seconds
1746	5958	bool	r/o	Recalibrate Sensor 1 (Relay)	Do a new Zero Calibration Sensor1
1747	5959	bool	r/o	Recalibrate Sensor 2 (Relay)	Do a new Zero Calibration Sensor2
14BB	5307	bool	r/o	AutoZero Sensor1	True if AutoZero running
14C3	5315	bool	r/o	ZeroCalibrate Sensor1	Do a new Zero Calibration Sensor1
14BC	5308	bool	r/o	AutoZero Sensor2	True if AutoZero running
14C4	5316	bool	r/o	ZeroCalibrate Sensor2	Do a new Zero Calibration Sensor1
14BD	5309	bool	r/o	MaxTempRange Sensor 1	Process Temp. >±3°C from Cal. Temp.
14C5	5317	bool	r/o	Recalibrate Sensor 1	Process Temp. >±4°C from Cal. Temp.

14BE	5310	bool	r/o	MaxTempRange Sensor 2	Process Temp. >±3°C from Cal. Temp.
14C6	5318	bool	r/o	Recalibrate Sensor 2	Process Temp. >±4°C from Cal. Temp.

### Raw values (optional)

Hex	Dec	Data type	Access	Data	Value Note
15C5	5573	float	r/o	Calculated result formula 1 No AutoZero	N <sub>2</sub> O Concentration value Sensor 1 (g/m <sup>3</sup> N-N <sub>2</sub> O)
15C7	5575	float	r/o	Calculated result formula 2 No AutoZero	N <sub>2</sub> O Concentration value Sensor 2 (g/m <sup>3</sup> N-N <sub>2</sub> O)
16A0	5792	float	r/o	Measured value IN 6 compensated2	Airflow input (m3/h)
16A2	5794	float	r/o	Measured value IN 11 compensated	N <sub>2</sub> O raw value Sensor 1
16A4	5796	float	r/o	Measured value IN 12 compensated	N <sub>2</sub> O raw value Sensor 2
16BB	5819	float	r/o	Measured temperature value IN 4	Temperature value Sensor 1
16BD	5821	float	r/o	Measured temperature value IN 5	Temperature value Sensor 2
16DA	5850	bool	r/o	Binary value IN 1	Air ON tank 1
16DB	5851	bool	r/o	Binary value IN 2	Air ON tank 2