

Connecting diagram

Flow Computer GDR 1501 (E8166d/e)

Firmware: ≥ 9.35

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Installation instructions

Please check the board version of the connection board and select the connection diagram accordingly. This plan is valid for version E8166d/e.

Many thanks for your understanding, that we do not enclose a full installation manual to each device for environmental reasons. You have the opportunity to download all relevant information from our homepage (www.esters.de).

To start-up the devices, no additional software is required, the device can be completely set up over the display and the keypad.

Download

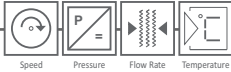


Device specific connecting diagram and installation instruction

Download under Download >> Instruction manuals
(<https://www.esters-elektronik.de/en/download-instruction-manuals/>).

The designation of the device is defined on the nameplate.





Device code: GDR 1501

	ECO	PRO		PRO-N	
GDR 1501-XXXX-xy00	0048	0049	4049	0061	4061
INPUT					
1: Flow rate: input for platinum wire sensor (GD 300/GD 500) (only NON-ATEX) <u>or</u>	•	•	•	•	•
1: Flow rate: impulse input for HB 300 / HB 300 Ex* (GD 300 (Ex)/ GD 500 (Ex)), <u>or</u>		•	•	•	•
1: Flow rate: Third party devices with Open-Collector, Reed-Relay, input frequency up to 1 kHz <u>or</u>		•	•	•	•
1: Flow rate: NAMUR				•	•
2: Temperature: 4 - 20 mA, 2 wire = -100 - 999 °C (12 bit) <u>or</u>	v	• ¹	• ¹	• ¹	• ¹
2: Temperature (Pt100): 3 wire, (12 bit)	• ¹	• ¹	• ¹	• ¹	• ¹
3: Pressure: 4 - 20 mA, 2 wire = -500 mbar - 1.000 bar (12 bit)	v	• ¹	• ¹	• ¹	• ¹
OUTPUT					
1: (0) 4 - 20 mA = 0 - (x) Bm ³ /h, l/h, Bm ³ /min, l/min, Nm ³ /h, NL/h, Nm ³ /min, NL/min) Flow rate (freely programmable), input resistance 500 Ohm	•	•	•	•	•
RELAY OUTPUT					
K1: Relay (NO) freely programmable - pulse output (0,1, 1 oder 10 or 100 m ³ per impulse Impuls, freely programmable), counter output quantity <u>or</u> - limit value <u>or</u> - device status	•	•	•	•	•
K2: Relay (NO) freely programmable acc.to K1	•	•	•	•	•
BUS INTERFACES					
Modbus RTU			•		•

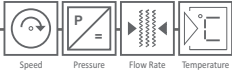
v = virtual input for freely definable fixed values

1 = if no sensors are connected, fixed values can be defined

* Older models of pulse amplifiers such as UNI 100 and SC 300 series can be connected.


GDR 1501-xxxx-XY00	X	Y	
	1		Housing made of polycarbonate for wall mounting (standard)
	2		Housing made of aluminum for wall mounting
ATTENTION: Only connect one kind of power supply!		0	24 V, DC ± 3 V, max. 200 mA (standard)
		1	- 100 - 240 V, AC, 144 mA max. 50/60 Hz <u>or</u> - 24 V, DC ± 3 V, max. 200 mA,

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Connecting diagram and terminal allocation

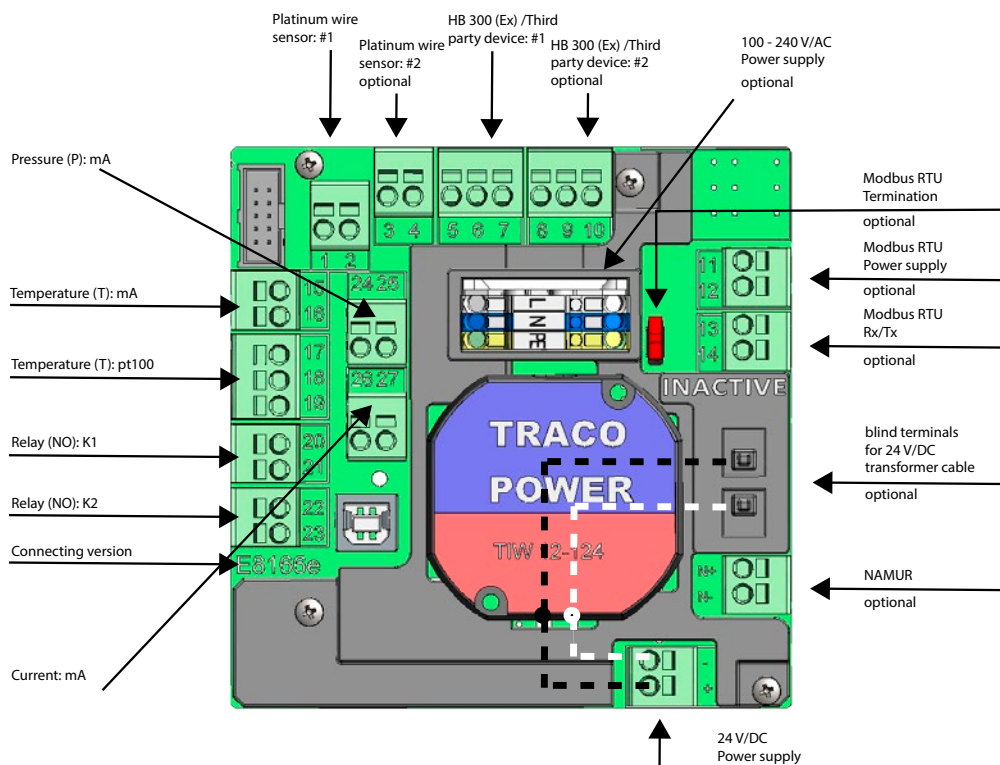
TERMINAL	No	
PLATINUM WIRE SENSOR: #1	1	
	2	
PLATINUM WIRE SENSOR: #2 (OPTIONAL)	3	
	4	
HB 300 /HB 300 Ex / THIRD PARTY DEVICE #1	5	GND
	6	P
	7	+24 V
HB 300 /HB 300 Ex / THIRD PARTY DEVICE #1 (OPTIONAL)	8	
	9	
	10	
MODBUS RTU POWER SUPPLY (OPTIONAL)	11	GND
	12	+24 V
MODBUS RTU (OPTIONAL)	13	Rx
	14	Tx
MODBUS RTU TERMINATION		Off
		On

TERMINAL	No	
TEMPERATURE (T): mA	15	+
	16	GND
TEMPERATURE (T): pt100	17	
	18	
	19	
RELAY: K1 (NO)	20	
	21	
RELAY: K2 (NO)	22	
	23	
PRESSURE (P): mA	24	GND
	25	+
CURRENT OUTPUT: mA	26	GND
	27	+
NAMUR	N+	
	N-	

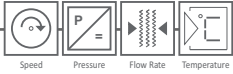
POWER SUPPLY

POWER SUPPLY: 24 V/DC	GND 24 V DC	POWER SUPPLY: 100 - 240 V/AC (OPTIONAL)	L, N, PE
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ATTENTION: If the device has an optional 100 - 240 V AC power supply, the 2-wire cable is connected from the transformer to the existing terminals for the 240 V/DC terminal. If the 100 - 240 V AC power supply is not used, the 2-wire cable of the transformer must be connected to the blind terminals.



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Bus dataset for Modbus TCP, Modbus RTU

The following dataset is transmitted via the optional available bus interfaces (Modbus TCP, Modbus RTU).

Data output: GDR 1501 → Fieldbus

OFFSET	FORMAT	CONTENT	UNIT
0x0000	U16	Counter ca. 10 Hz	-
0x0002	U16	Measuring point index	-
0x0004	U32	Operating quantity	0.1 cm ³
0x0008	U32	Operating quantity	m ³
0x000C	U32	Normalized quantity	0.1 Nm ³
0x0010	U32	Normalized quantity	Nm ³
0x0014	U32	Reserved	-
0x0018	U32	Reserved	-
0x001C	U32	Flow rate	0.1 l/h
0x0020	U32	Flow rate	l/h
0x0024	S32	Gas temperature	0.1 °C
0x0028	S32	Gas pressure	0.1 mbar
0x002C	U32	Atmospheric pressure	0.1 mbar

Data input: Fieldbus → GDR 1501

OFFSET	FORMAT	CONTENT	UNIT
0x0000	U16	Reserved	-
0x0002	U16	Reserved	-
0x0004	U32	Reserved	-

Remarks:

- All data are in MOTOROLA format on the bus.
- With 32-bit values, the HI word comes first, then the LO word.
- With 64-bit values, the most significant word comes first, then in descending order of importance the remaining three words.
- Two's complement applies to signed values.