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NTG-3000

Transducer

Data Sheet

Document Version 2.10

Versions / Revisions:

Document version	Creation date	Author	Description
2.0	2012-07-25	P. Compensis	First official version
2.1	2012-08-24	P. Compensis	Addition of Software Version 3.1
2.2	2012-09-20	P. Compensis	Addition of Software Version 3.2
2.3	2013-02-18	P. Compensis	Enlargements: Power consumption (generator voltage) Power consumption (generator current) Internal resistance (generator current)
2.4	2013-03-07	P. Compensis	Measure inputs generator voltage: Impulse voltage and dielectric strength removed and replaced by detailed information about insulation. Also the range of frequency is described more precisely. Measure inputs generator current: Dielectric strength removed and replaced by detailed information about insulation. Listing of the particular terminal designations. Revision of the connection diagram.
2.4	2013-05-22	B. van Laak	Rotation of the housing by 180°.
2.5	2013-06-03	P. Compensis	Confirmation of the value “End of measuring range” (chapter 1.1.1 Generator voltage).
2.6	2013-09-19	M. Krönert	New SW-Version
2.8	2013-12-16	P. Compensis	New SW-Version
2.9	2014-04-16	P. Compensis	New SW-Version 3.7
2.10	2015-03-12	M. Krönert	New SW-Version 3.8



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1 Technical data

Storage temperature	-20 °C to +70 °C
Operating temperature	0 to 50 °C
Humidity (maximum)	85 % (non-condensing)
Degree of protection (type of enclosure)	IP20
Operating voltage	+24 V; -20 %; +10 %
Input current (typical)	120 mA
Input current (maximum)	250 mA

1.1 Measuring inputs

1.1.1 Generator voltage

Internal resistance phase-to-phase	500 kΩ	
Internal resistance phase-to-neutral	250 kΩ	
Measuring range (line-to-line)	100 V / 110 V / 120 V rms	
End of measuring range	150 V rms (120 V rms + 25%)	
Impulse voltage (1 s)	1200 V	
Frequency range voltage measuring	50 Hz – 60 Hz +/- 20 %	
Resolution	14-bit	
Accuracy	0.5 %	
Scan rate	100 μs	
Power consumption at 100 V	40 mW / phase	
Insulation voltage against adjacent measuring inputs	2.5 kV	
Insulation in acc. with EN 61010-1	phase-to-phase	1,7 kV AC
	phase-to-neutral	1 kV AC
	neutral to PE	2 kV AC

1.1.2 Generator current

Measuring range	1A / 5A rms
Measuring upper limit	7 A rms
Impulse current (1 s)	50 A
Frequency range	50 - 60 Hz +/- 20 %
Resolution	14-bit
Accuracy	0.5%
Scan rate	100 μs
Power consumption at 5 A	max. 250 mW / phase

Insulation in acc. with EN 61010-1	Current clamp to PE	2 kV AC
	Current clamp to GND	2,65 kV AC
Internal resistance	min. 0,006 Ω to max. 0,010 Ω , no fixed load	

1.1.3 Process inputs 0...20 mA

Internal resistance	150 Ω
Resolution	12-bit
Accuracy	0.5%
Scan rate	2 ms
Dielectric strength in acc. with EN 50178, to ground	1.2 kV AC

1.1.4 Process input 0...10 V

Internal resistance	250 k Ω
Resolution	12-bit
Accuracy	0.5 %
Scan rate	2 ms
Dielectric strength in acc. with EN 50178, to ground	1.2 kV AC

1.2 Certification

CE	In accordance with IEC 61010-1:2010 EN 61000-6-2:2005 EN 61000-6-3:2007 EN 61326-1:2006
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2 Dimensions

Height	76 mm (without mounting rail clip and PROFIBUS connector) approx. 140 mm (with mounting rail clip and standard PROFIBUS connector)
Width	89 mm
Length	144 mm

3 Connections

3.1 Screw terminals

3.1.1 Screw terminal for supply voltage

Connection	Voltage
-X100-1	+24 V DC
-X100-2	M
-X100-3	PE

3.1.2 Screw terminals for measuring signals

Connection	Channel	Measuring range
-X503 U L1	U1	100 / 110 / 120 V AC
-X503 U L2	U2	100 / 110 / 120 V AC
-X503 U L3	U3	100 / 110 / 120 V AC
-X503 U N	U1/U2/U3	
-X500 I L1+	L1	1 / 5 A AC
-X500 I L1-		
-X501 I L2+	L2	1 / 5 A AC
-X501 I L2-		
-X502 I L3+	L3	1 / 5 A AC
-X502 I L3-		
-X600 DC1 (0/4...20 mA)	DC1	0...20 mA DC
-X600 Common		
-X601 DC2 (0/4...20 mA)	DC2	0...20 mA DC
-X601 Common		
-X602 DC3 (0...10 V)	DC3	0...10 V DC
-X602 Common		

3.1.3 Connection cross sections:

	min	max
Single-core (rigid)	0.2 mm ²	4 mm ²
Flexible (with ferrule)	0.2 mm ²	4 mm ²

3.2 Ethernet connection: -X200

- Conforms to DIN EN 60950

Type: 8P8C modular connector (“RJ-45”)

Pin assignments:

Pin	Signal
1	TX+
2	TX-
3	RX+
4	N.C.
5	N.C.
6	RX-
7	N.C.
8	N.C.

3.3 PROFIBUS connection: -X300

- Conforms to DIN EN 60950-1

Type: 9-pin D-sub female

Pin assignments:

Pin	Signal
1	N.C.
2	N.C.
3	A-Line
4	RTS+
5	GND-BUS
6	+5V-BUS
7	N.C.
8	B-Line
9	N.C.

Output voltage of 5V-BUS: 5 V, max. 20 mA

4 Rotary switch

4.1 Inscription

CONFIGURATION

4.2 Description

16-position rotary switch for configuration settings.

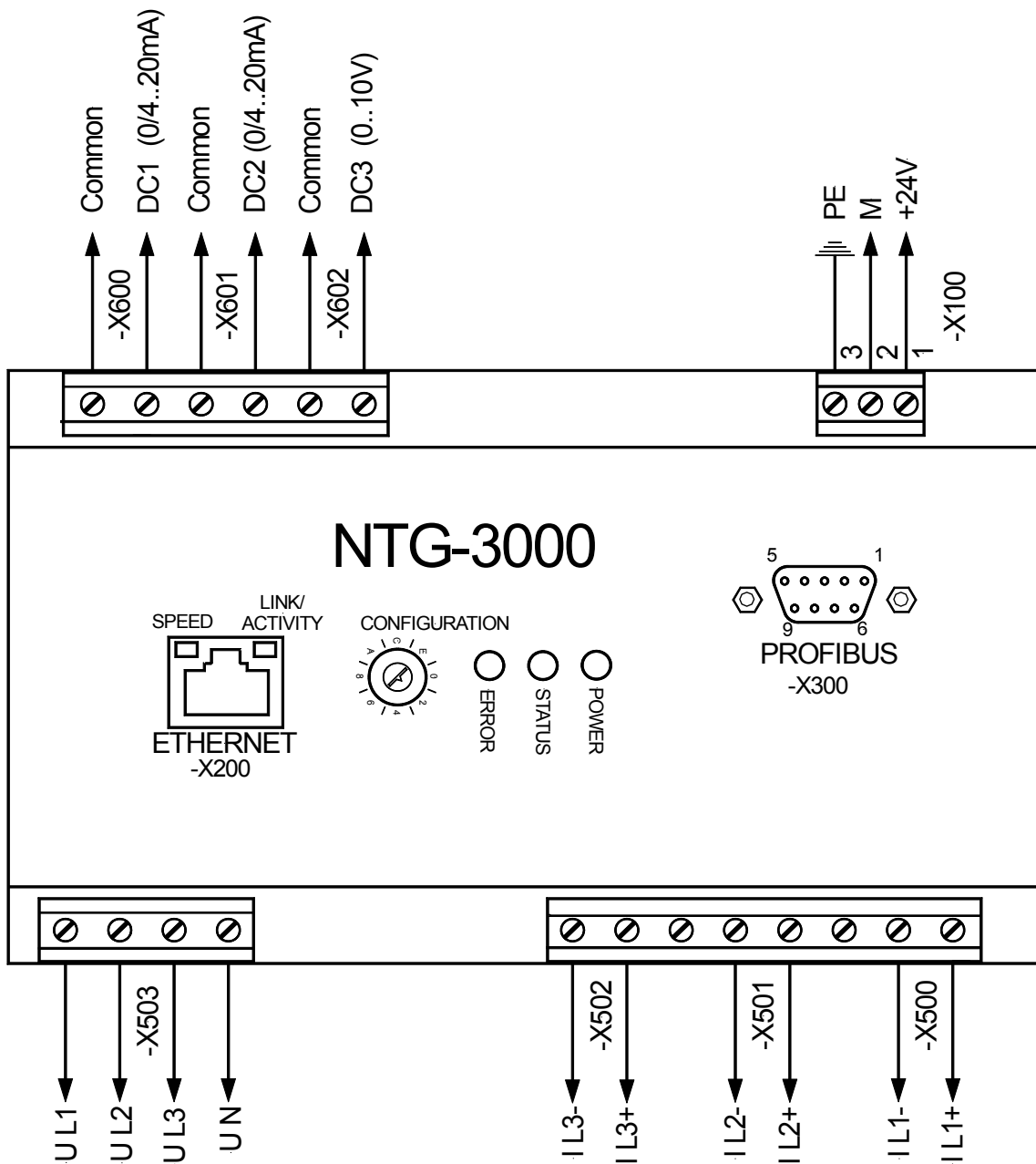
The functions of the switch settings are described in the transducer's "**Operating Instructions**".

5 LEDs

- POWER LED green
- STATUS LED green
- ERROR LED red

The functions of the LEDs are described in the transducer's "**Operating Instructions**".

6 Connection diagram





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7 Software version

The current software version is: **NTG-3000 SW-Version 3.8**

8 Hardware version

Rev. 5.1