BD SENSORS®
pressure measurement

CIT 700 / 750

Multichannel Process Display with Datalogger, Contacts and Analogue Outputs

Functional range standard

- up to 90 channels for in- / outputs
- 35 mathematical / logical functions
- 8 integrated PID-controllers with autotuning
- 8 time- / event-driven profiles
- touchscreen- and remote-controlling
- multilevel access system
- webserver incl. HTML5 widgets
- e-mail function

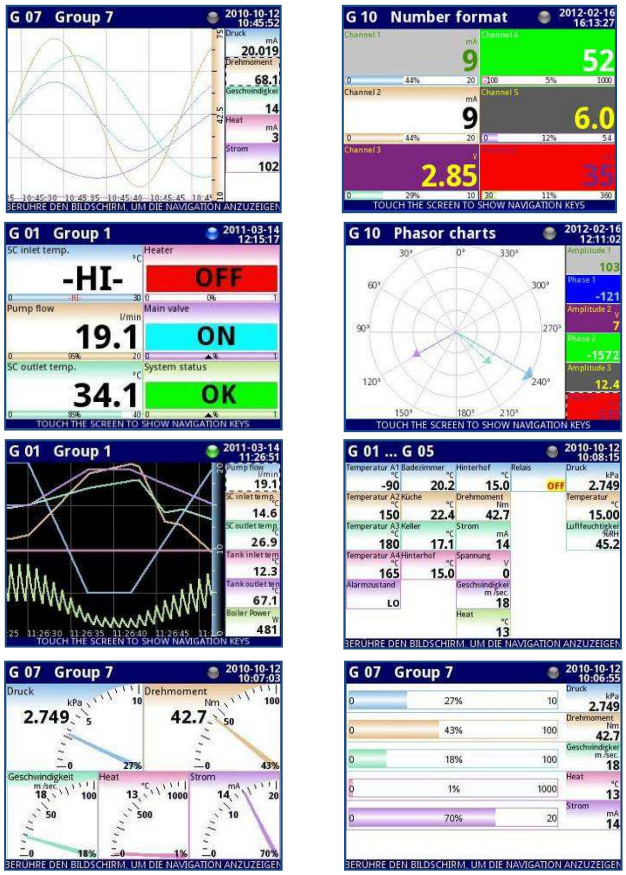
Datalogger

- data acquisition of up to 60 channels
- 2 configurable sample rates (max. 10 Hz)
- extensive triggering functions
- internal memory 1.5 GB
- data transfer via USB memory stick or Ethernet

Product characteristics

- front panel housing 96 x 96 / 144 x 144mm
- graphic TFT monitor, touchscreen
- 3 slots for 40 different input- / output modules
- interfaces: RS-485 (Modbus RTU), RS-232, USB-Host, Ethernet (Modbus TCP)
- transducer power supply 24 V_{DC}2 x USB-Host-Port,
  Ethernet (Modbus TCP, Java Applets)

Display modes



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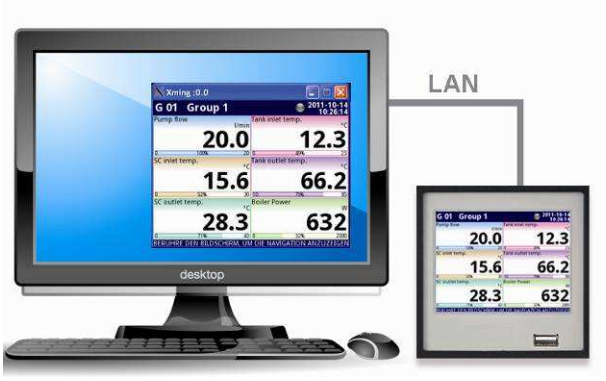
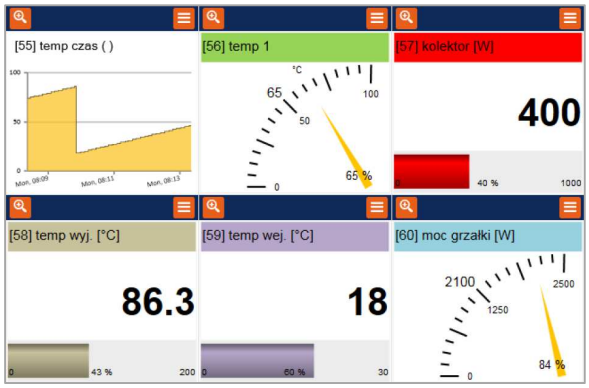
Display		
Display	CIT 700: graphic TFT, 3,5", touchscreen, colored (16 bit), 320 x 240 pixels CIT 750: graphic TFT, 5,7", touchscreen, colored (16 bit), 320 x 240 pixels	
Datalogger		
Internnal memory	1,5 GB, max. 125 000 000 measurements	
Sampling rate	0,1 sec to 24 h, 2 sampling rates, triggering internal/external, (max. 60 channels, max. 200/sec)	
Ingress protection		
Front panel housing	IP 65 (front side), IP20 (case and connectors) IP 65 (front side with additional sealing frame for panel cut-out), IP 20 (case and connectors) IP 40 (front side, USB front), IP20 (case and connectors)	
Wall mounted housing	IP 65	
Permissible temperatures		
Standard / Option	environment: 0 … 50 °C, storage: -10 … 70 °C / environment: -20 … 50 °C, storage: -20 … 70 °C	
Electrical protection		
Electrical safety / EMC / CE	EN 61010-1 / EN 61326-1 / 2014/30/EU	
Housing		
Housing type / dimensions	CIT 700: front panel mounting / 96 x 96 x 110 mm CIT 750: front panel mounting / 141 x 141 x 110 m	CIT 700: wall mounted housing / 166 x 161 x 103mm
Material	NORYL-GFN2S E1	ABS, PC
Weight	CIT 700: max. ca. 800 g CIT 750: max. ca. 1200 g	max. ca. 1000 g
Basic functions		
Allocation of 60 / 90 internal channels to 10 / 15 groups (max. 6 channels each group)		
Visualisation of values in 6 different modes (value, chart, bar, needle, phase chart, ScadaLite)		
Displaying of values numeric (figure) / binary (text) / time / control element (switch / button)		
Lo / Hi alarms, channel highlight (change of background color)		
Filtering (damping / peak detection), scaling (linear / user defined with 20 points), rounding of displayed values		
Extensive mathematic / trigonometric / logical functions		
8 PD- / PI- / PID controller incl. autotuning		
8 user defined time- / event-driven profiles with max. 99 segments		
16 virtual relays, acoustic signal		
Multilingual menu (EN, DE, FR, ES, CZ, PL, HU, RO, RU)		
Date- and time display, time zones, synchronization via NTP		
Adjustable contrast and brightness of display, screen saver, automatic view change, remote shutdown		
Multilevel access system (max. 16 user with definable rights), login via USB dongle		
Editors for letters, figures, special characters, font- and background colors		

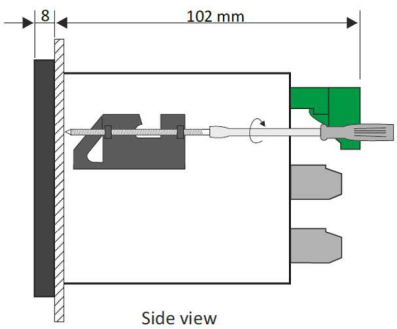
Remote control



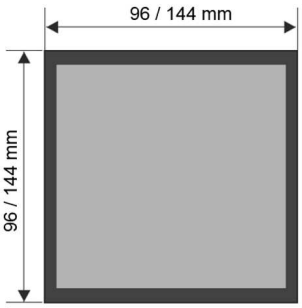
HTML5 Widgets



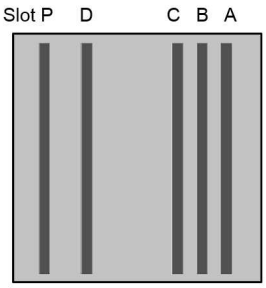
Dimensions



Side view



Case dimensions



Backside view

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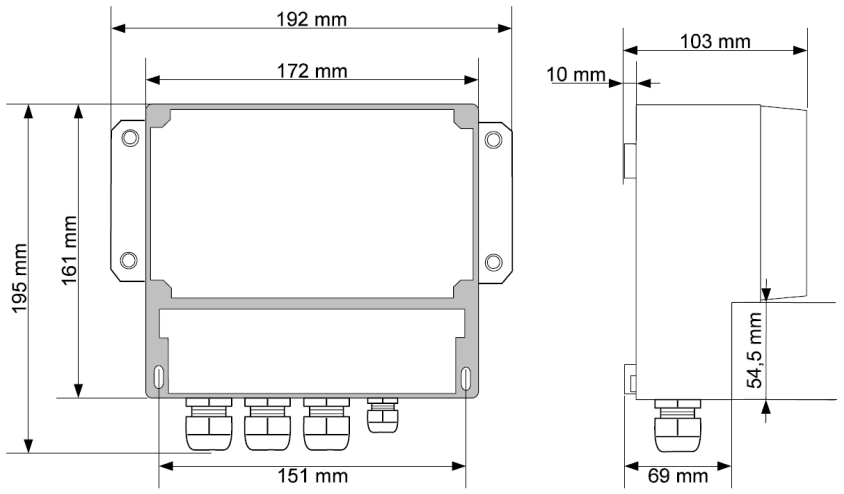

Wall mounted housing

Slot P – power supply modules with basic functions			
PS32, PS42			
Supply voltage / Power consumption	16 … 35 V_{AC} / 19 … 50 V_{DC} / max. 35 VA 85 … 260 V_{AC} / V_{DC} / max. 35 W		
Transducer supply	24 V_{DC} ± 5%, max. 200 mA		
Binary input	0 ... 24 V DC, U < 1 V = LOW, U > 8 V =HIGH, current consumption 7,5mA @ 24V, isolation 500 V DC		
RS-485	RS-485 Modbus RTU (master/slave), 8N1, 8N2, 8E1, 8E2, 8O1, 8O2, 1200…115200 bit/s		
USB type Mini-B	service port		
Slot D – communication modules			
USB			
Interface	USB host port type A		
Max. current output	100 mA		
Baudrate	12 Mbit/s		
ETU			
Interface	USB host port type A	Ethernet RJ-45	
Max. current output	100 mA	-	
Baudrate/protocol	12 Mbit/s	10 Mbit/s, Modbus TCP (slave)	
ACM			
Interface	USB host port	Ethernet RJ-45	RS-485, RS-485 / RS-232
Max. current output	100 mA	-	-
Baudrate/protocol	12 Mbit/s	10 Mbit/s, Modbus TCP(slave)	1200…115200bit/s, Modbus RTU(master/slave)
ETE			
Interface	Ethernet RJ-45		
Max. current output	-		
Baudrate/protocol	10 Mbit/s, Modbus TCP (slave)		
ETR			
Interface	Ethernet RJ-45		RS-485
Max. current output	-		-
Baudrate/protocol	10 Mbit/s, Modbus TCP (slave)		1200…115200bit/s, Modbus RTU master/slave)
SLOT C / B / A – input / output modules			
UI4, UI8, UI12, U16, U24, I16, I24 – 4 / 8 / 12 / 16 / 24 current- / voltage inputs (common ground)			
Input range/resolution	0 ... 12 V / 1 mV		0 ... 24 mA / 1 µA
Measurement ranges	0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V		0 ... 20 mA, 4 ... 20 mA
Accuracy	0,1 % @ 25°C, stability: 50 ppm/°C		0,1 % @ 25°C, stability: 50 ppm/°C
Internal impedance	50 kΩ		100 Ω, 50 mA fuse
IS6 – 6 current inputs (isolated)			
Input range/resolution	3 ... 30 mA / 1µA		
Measurement ranges	4 ... 20 mA		
Accuracy	0,25 % @25°C, stability: 65 ppm/°C		
Internal impedance	1750 Ω @ 4 mA, 400 Ω @ 20 mA, 50 mA fuse		
D8, D16, D24 – 8 / 16 / 24 binary inputs (common ground each 4 inputs)			
Input range	0 ... 30 V, U < 1 V = LOW, U > 4 V = HIGH		
Current consumption	15 mA (24 V), 5 mA (10 V), 2 mA (5 V)		
UI4D8, UI8D8 – 4 / 8 current- / voltage inputs + 8 binary inputs (common ground each 4 inputs)			
Technical data see UI4, UI8, D8			

UI4N8, UI8N8 – 4 / 8 current- / voltage inputs (common ground) + 8 NTC inputs				
Input range/resolution	0 ... 12 V / 1 mV	0 ... 24 mA / 1 µA	0 … 110 kΩ / 4 Ω	
Measurement ranges	0/1 ... 5 V, 0/2 ... 10 V	0 ... 20 mA, 4 ... 20 mA	0 … 110 kΩ	
Accuracy	0,1 % @25°C, stability: 50 ppm/°C			
Internal impedance	61 kΩ	100 Ω, 50 mA fuse	121 kΩ	
RT4, RT6 – 4 / 6 RTD inputs				
Input range/resolution	0 ... 325 Ω / 0,01 Ω		0 ... 3250 Ω / 0,1 Ω	
Measurement ranges	-100 … 600 °C (Pt100), -200 … 600 °C (Pt´50/100), -50 … 200 °C(Cu50/100), -200 … 200 °C(Cu´50/100), -60 … 180 °C (Ni100), 0...300 Ω, 2/3/4-wire		-100 … 600 °C (Pt500/1000), -200 … 600 °C (Pt´500), -60 … 180 °C (Ni1000), 0...3 kΩ, 2/3/4-wire	
Accuracy [1]	0,1 % @25°C, stability 50 ppm/°C		0,1 % @25°C, stability 50 ppm/°C	
Internal impedance	4 kΩ		4 kΩ	
TC4, TC8, TC12 – 4 / 8 / 12 thermocouple inputs				
Input range/resolution	-30...30mV / 1 µV		-120...120 mV / 4 µV	
Measurement ranges	-50 … 1768 °C (S), -200 … 400 °C (T), -50 … 1768 °C (R), 250 … 1820 °C (B), -25...25 mV		-200 … 1370 °C (K), -210 … 1200 °C (J), -200 … 1300 °C (N), -200 … 1000 °C (E), -200 … 800 °C (L), 50 … 2290 °C (C), -100...100 mV	
Accuracy [1]	0,15 % @25°C, stability 50 ppm/°C		0,1 % @25°C, stability 50 ppm/°C	
Internal impedance	6 MΩ		6 MΩ	
[1] accuracy of temperature measurement: see manual				
UN3, UN5 – 3 / 5 universal inputs (isolated) for current, voltage, RTD, thermocouple				
Current inputs				
Input range/resolution	-2 ... 30 mA / 1µA			
Measurement ranges	0 ... 20 mA, 4 ... 20 mA			
Accuracy	0,1 % @ 25 °C, stability 50 ppm/°C			
Internal impedance	< 65 Ω			
Voltage inputs				
Input range/resolution	-1 ... 12 V / 1 mV	-15 … 30 mV / 2 µV	-15 … 120 mV / 4 µV	-50 … 650 mV / 40 µV
Measurement ranges	0/1 ... 5 V, 0/2 ... 10 V	-10 … 25 mV	-10 … 100 mV	0 … 600 mV
Accuracy	0,1 % @ 25 °C, stability 50 ppm/°C, (-10 … 25 mV: 0,15 % @ 25 °C)			
Internal impedance	> 100 kΩ	> 100 kΩ	> 100 kΩ	> 100 kΩ
RTD inputs				
Input range/resolution	0...325 Ω / 0,01 Ω		0...3250 Ω / 0,2 Ω	
Measurement ranges	-100 … 600 °C (Pt100), -200 … 600 °C (Pt´50/100), -50 … 200 °C(Cu50/100), -200 … 200 °C(Cu´50/100), -60 … 180 °C (Ni100), 0...300 Ω, 2/3/4-Leiter		-100 … 600 °C (Pt500/1000), -200 … 600 °C (Pt´500), -60 … 180 °C (Ni1000), 0...3 kΩ, 2/3/4-Leiter	
Accuracy [1]	0,1 % @ 25 °C, stability 50 ppm/°C		0,1 % @ 25 °C, stability 50 ppm/°C	
Internal impedance	4 kΩ		4 kΩ	
Thermocouple inputs				
Input range/resolution	-15 … 30 mV / 2 µV		-15 … 120 mV / 4 µV	
Measurement ranges	-50 … 1768 °C (S), -200 … 400 °C (T), -50 … 1768 °C (R), 250 … 1820 °C (B)		-200 … 1370 °C (K), -210 … 1200 °C (J), -200 … 1300 °C (N), -200 … 1000 °C (E), -200 … 800 °C (L), 50 … 2290 °C (C)	
Accuracy [1]	0,1 % @ 25 °C, stability 50 ppm/°C		0,1 % @ 25 °C, stability 50 ppm/°C	
Internal impedance	> 1,5 MΩ		< 65 Ω	
HM2, HM4 – 2 / 4 hourmeter inputs (isolated)				
Input range	0 ... 30 V, U < 1 V = LOW, U > 10 V = HIGH			
Current consumption	14 mA (24 V), 6 mA (10 V), 50mA fuse			
Processing	each 1x start-/stop input, 1x programmable input (reset/hold/binary input) counting range: max. 10^9 s			
CP2, CP4 – 2 / 4 universal pulse counters (isolated)				
Input range	0...30V, U<1V = LOW, U>10V = HIGH, max. 10 kHz			
Current consumption/isolation	14 mA (24V), 6 mA (10V), 50mA fuse / 2kV			
Processing	each 2x counting input, 1x programmable input (reset/hold/direction), 1x reset input counting range: 52 bit, counting modes: A+B / A-B / counter (up/down) / quadrature counter			
FI2, FI4 – 2 / 4 analogue flowmeters with totalizer + 2 / 4 current inputs (common ground)				
Input range/resolution	0 ... 24 mA / 1 µA			
Measurement ranges	0 ... 20 mA, 4 ... 20 mA			
Accuracy	0,1 % @ 25 °C, stability 50 ppm/°C			
Internal impedance	100 Ω / 50 mA fuse			
Processing	each 1x current input (standard + flowmeter), 1x current input (standard), counting range: 10^{12}			
FT2, FT4 – 2 / 4 pulse flowmeter / ratemeter with totalizer (isolated) + 2 / 4 current inputs (common ground)				
Input range/resolution	0...30V, U<1V = LOW, U>10V = HIGH, max. 50 kHz		-2 ... 30 mA / 1 µA	
Measurement ranges	1/sec, 1/min, 1/h		0 ... 20 mA, 4 ... 20 mA	
Accuracy			0,1 % @ 25 °C, stability 50 ppm/°C	
Internal impedance			100 Ω / 50 mA fuse	
Current consumption	12 mA (24V), 50mA fuse			
Processing	each 2x counting inputs + 1x current input, counting range: 10^{12}, modes: counter (up/down) / quadrature			

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FUN2, FUN4 – 2 / 4 universal analogue inputs with flowmeter / totalizer (isolated) for current, voltage, RTD, thermocouple		
Technical data see UN3, UN5		
DU2 – 4 binary inputs (common ground each 2 inputs) or 2 pulse flowmeter / ratemeter with totalizer (isolated)		
Technical data see D8, D16, D24 or FT2, FT4, max. 5kHz		
D4 – 4 binary inputs (common ground each 2 inputs)		
Technical data see D8, D16, D24		
IO2, IO4, IO6, IO8 – 2 / 4 / 6 / 8 passive current outputs 4…20mA (isolated)		
Output range/resolution	3 ... 25 mA, 50 mA fuse / 12 bit	
Accuracy	0,1 % @ 25 °C, stability 50 ppm/°C	
Voltage drop/loop supply	max. 9 V / 9 ... 30 V	
R21, R41, R45, R65, R81, R121 – 2 / 4 / 6 / 8 / 12 relay outputs		
Output	4 / 6 SPDT relay	2 / 4 / 8 / 12 SPST relay
Max. current/voltage	5 A (cosφ =1, each output) / 250 VAC	1A (cosφ =1, each output) / 250 VAC
S2, S4, S8, S16, S24 – 2 / 4 / 8 / 16 / 24 solid state relay outputs (SSR) with PWM		
External supply	Uext. 10 ... 30 V	
Max. current/voltage	100 mA, max. 500 mA each 8 outputs / > Uext. -0,5 V	
PWM-period/-resolution	0,1 ... 1 600 s / 0,1 s	
PWM-frequency/-duty factor	5 kHz (internal), 20 µs (output) / 0 ... 100 %, resolution 15 bit	
R21IO2 – 2 relay outputs + 2 passive current outputs 4…20mA (isolated)		
Technical data see R21, IO2		
R21S2 – 2 relay outputs + 2 solid state relay outputs (SSR) with PWM		
Technical data see R21, S2		
IO2S2 – 2 passive current outputs 4…20mA (isolated) + 2 solid state relay outputs (SSR) with PWM		
Technical data see IO2, S2		