

PRODUCT CATALOGUE
DISPLAYS AND EVALUATION DEVICES



EVALUATION AND VISUALIZATION AT THE HIGHEST LEVEL

"Successful medium-sized companies are not successful because they are active in many areas, but rather because they concentrate on one area and do it better than anyone else."

This is our philosophy. That's why BDISENSORS has concentrated on electronic pressure measurement technology from the beginning.

With our unremitting product and quality strategy we have been successful in becoming a major player on the world market for electronic pressure sensing devices within a few years.

With 300 employees at 4 locations in Germany, the Czech Republic, Russia and China BD|SENSORS has solutions from 0.1 mbar to 8000 bar:

- > pressure sensors, pressure transducers
pressure transmitters

- > electronic pressure switches

- > pressure measuring devices with display and
switching outputs

- > hydrostatic level probes

Two pressure transmitters and a submersible probe, based on a stainless steel silicon sensor were the beginning. Today the range extends to more than 100 standard products, from economical OEM devices to high-end products with HART® communication or field bus interface.


In addition we have developed hundreds of customer-specific applications, underlining the competence and flexibility of BD|SENSORS. The excellent price/performance ratio of our products is proof of the fact that we are able to meet the toughest demand: Being a problem-solver for our customers.

For large production batches as well as for small production numbers, no matter for what medium or external factors, with almost any mechanical or electrical connection - we solve your problem.

flexibly, quickly, cost-efficiently.

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Product		Description	Display
PA 430	 Ex	Plug-on Display with Contacts and Ex-approval	4-digit LED-display 4 x 7 mm, rotatable
PA 440	 Ex	Field Display with Contacts and Ex-approval	4-digit LED-display 4 x 10 mm 4-digit LCD-display 4 x 18 mm
CIT 200	 Modbus	Process Display	4-digit LED-display 4 x 13 mm
CIT 250	 Modbus	Process Display with Contacts	4-digit LED-display 4 x 13 mm 4-digit LED-display 5 x 9 mm
CIT 300	 Modbus	Process Display with Contacts and Analogue Output	4-digit LED-display 4 x 20 mm
CIT 350	 Modbus	Process Display / Field Display with Bargraph, Contacts and Analogue Output	4-digit LED-display 4 x 9 mm + 20-segment-Bargraph
CIT 400	 Ex	Process Display with Contacts, Analogue Output and Ex-approval	4-digit LED-display 4 x 10 mm
CIT 600	 Modbus	Multichannel Process Display (LCD)	graphic LCD-display 128 x 64 pixel
CIT 650	 Modbus	Multichannel Process Display (LCD) with Datalogger	graphic LCD-display 128 x 64 pixel
CIT 700/750	 Modbus	Multichannel Process Display (TFT) with Contacts, Analogue Outputs and Datalogger	graphic 3,5 " TFT-monitor graphic 5,7 " TFT-monitor, touchscreen 320 x 240 pixel

Input	Output	Housing Dimensions (w x h x d) in mm	Interface	Page
4 ... 20 mA 0 ... 10 V	0 / 1 / 2 PNP 4 ... 20 mA, 0 ... 10 V	plastic housing rotatable 47 x 47 x 68	-	6-8
4 ... 20 mA	0 / 1 / 2 PNP 4 ... 20 mA	wall panel 120 x 80 x 57	-	9-11
0/4 ... 20 mA 0/1 ... 5 V, 0/2 ... 10 V PT100 / PT500 / PT1000		front panel 72 x 36 x 103 (86)	RS 485 Modbus RTU	12-14
0/4 ... 20 mA 0/1 ... 5 V, 0/2 ... 10 V PT100 / PT500 / PT1000 thermocouple	0 / 1 / 2 relay 0 / 1 / 2 OC	front panel 72 x 36 x 107	RS 485 Modbus RTU	15-17
universal entry 0/4 ... 20 mA 0/1 ... 5 V, 0/2 ... 10 V PT100 / PT500 / PT1000 thermocouple	0 / 2 / 4 relay 0 / 2 / 4 OC 0/4 ... 20 mA, 0 ... 10 V	front panel 96 x 48 x 107 wall panel 166 x 161 x 103	RS 485 Modbus RTU	18-21
0/4 ... 20 mA 0/1 ... 5 V, 0/2 ... 10 V	0 / 2 / 4 relay 0/4 ... 20 mA	front panel 48 x 96 x 107	RS 485 Modbus RTU	22-24
4 ... 20 mA	2 / 4 relay 0/4 ... 20 mA	front panel 72 x 72 x 110 hat rail 70 x 75 x 110	-	25-27
2 / 4 / 8 inputs 0/4 ... 20 mA 0/1 ... 5V, 0/2 ... 10 V PT100 / PT500 / PT1000 thermocouple	2 OC	front panel 96 x 96 x 100	RS 485 Modbus RTU	28-31
1 / 4 / 8 inputs 0/4 ... 20 mA 0/1 ... 5 V, 0/2 ... 0 V PT100 / PT500 / PT1000 thermocouple	2 relay 2 OC	front panel 96 x 96 x 110	RS 485 Modbus RTU USB-Host Port	32-36
max. 72 inputs 0 ... 20 mA, 0 ... 10 V binary max. 18 inputs PT 100 / PT 500 / PT 1000, max. 36 inputs thermocouple (mV) max. 12 inputs counter/ ratemeter/ flowmeter	max. 36 relay-outputs max. 72 SSR-outputs max. 24 outputs 4 ... 20 mA	front panel 96 x 96 x 110 front panel 144 x 144 x 110 wall panel 166 x 161 x 103	RS 485 Modbus RTU, RS 232, Ethernet, Modbus TCP USB-Host Port	36-42



PA 430

Plug-on Display for Current Loop with Contacts

Functional range

- ▶ free scalable display
- ▶ switch mode, hysteresis, parameterizable deceleration of the contacts
- ▶ display 330° rotatable
- ▶ connector 300° rotatable
- ▶ no external power supply necessary

Product characteristics

- ▶ plug-on display for pressure transmitter with output signal: 4 ... 20 mA / 2-wire or 0 ... 10 V / 3-wire
- ▶ 4-digit LED display

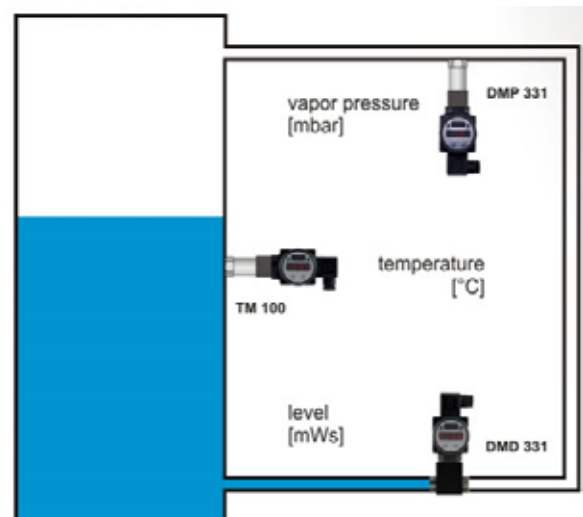
Optional versions

- ▶ IS-version
- ▶ 1 or 2 programmable contacts

Typical application



in situ display of pressure, temperature and level



Analogue signal	
2-wire-system	2-wire: 4 ... 20 mA
Option Ex-protection	2-wire: 4 ... 20 mA
3-wire-system	0 ... 10 V
Supply	
2-wire-system	supplied by current loop; voltage drop $\leq 6\text{ V}$; $V_S = (V_{T\text{min}} \dots V_{T\text{max}}) + 6\text{ V}_{\text{DC}}$ with $V_T =$ supply of the used transmitter Ex-protection: max. 28 V_{DC} (for combination of transmitter and PA 430)
3-wire-system	display is supplied parallel with transmitter $V_{S\text{min}} = 8\text{ V}_{\text{DC}} \dots V_{T\text{min}}$; $V_{S\text{max}} = V_{T\text{max}} \dots 36\text{ V}_{\text{DC}}$ with $V_T =$ supply of the used transmitter

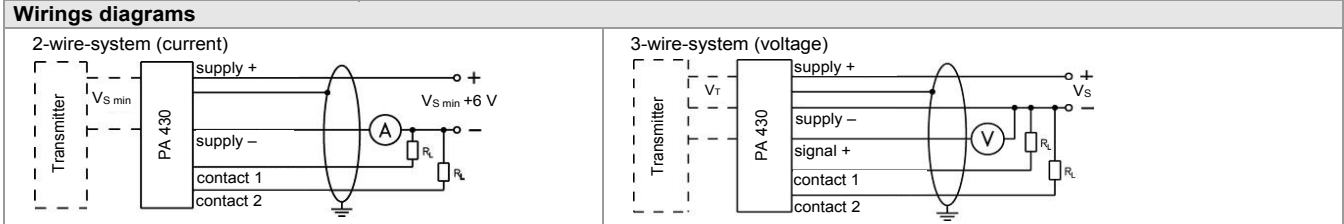
Contact (optionally) ¹	
Number, type	max. 2 independent PNP open collector contacts
Switching performance	$V_{\text{switch}} = V_S - 2\text{ V}$; contact rating max. 125 mA, short-circuit resistant
max. switching current ²	70 mA
Repeatability	$\leq \pm 0.1\%$ FSO
Switching frequency	max. 10 Hz
Switching cycles	$> 100 \times 10^6$
Delay time	0 ... 100 sec

¹ max. 1 contact for: 4 ... 20 mA / 2-wire with plug ISO 4400; 0 ... 10 V / 3-wire with Binder 723 (5-pin) or M12x1; Ex-protection no contact possible with 0 ... 10 V / 3-wire with plug ISO 4400

² the real switching current in the application depends on the power supply unit

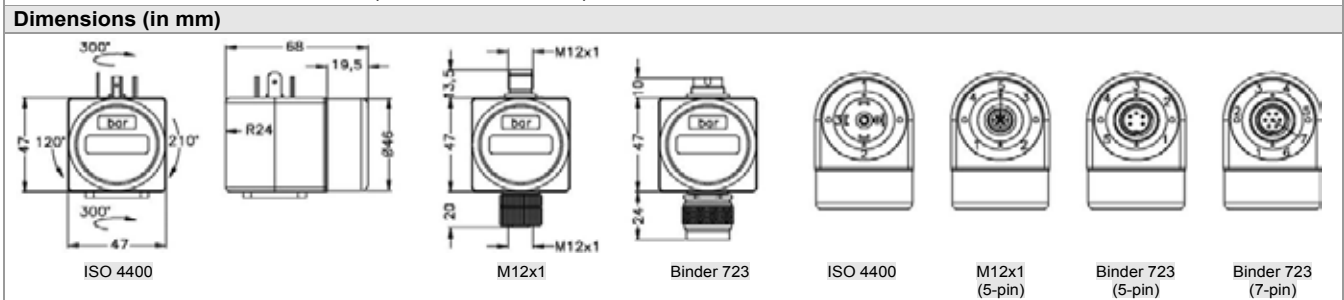
Miscellaneous	
Electrical protection	reverse polarity protection (no damage, but also no function); electromagnetic compatibility (emission and immunity according to EN 61326); short-circuit protection; ingress protection IP 65
Display	4-digit, 7-segment red LED display, digit height 7 mm; range of indication -1999 ... +9999; accuracy 0.1 % ± 1 digit; digital damping 0.3 ... 30 sec (programmable); measured value update 0.0 ... 10 sec (programmable)
Permissible temperatures	electronics / environment: -25 ... 85 °C storage: -40 ... 85 °C
Material of display housing	PA 6.6, polycarbonate
Mechanical stability	vibration: 5 g RMS (20 ... 2000 Hz) shock: 100 g / 11 msec
Weight	approx. 150 g
CE-conformity	EMC Directive: 2014/30/EU

Explosion protection (optionally for 4 ... 20 mA / 2-wire)	
Approval AX14-PA 430	IBExU 06 ATEX 1050 X zone 1: II 2G Ex ia IIC T4 Gb
Safety techn. maximum values	$U_i = 28\text{ V}$, $I_i = 93\text{ mA}$, $P_i = 660\text{ mW}$, $C \approx 0\text{ nF}$, $L_i \approx 0\text{ }\mu\text{H}$; plus cable inductivities 1 $\mu\text{H/m}$ and cable capacities 100 pF/m
Permissible temperature for environment	-25 ... 70 °C



Pin configuration					
Electrical connection	ISO 4400	M12x1 metal (5-pin)	Binder 723 (5-pin)	Binder 723 (7-pin) ³	
Supply +	1	1	3	3	
Supply -	2	2	4	1	
Signal + (for 3-wire)	3 ¹	3 ¹	5 ¹	-	
Contact 1	3 ¹	5	2	-	
Contact 2	-	3 ¹	1 ¹	-	
Shield	ground pin	4	ground pin	2	

³ intended for usage with DMP 331i, DMP 333i and LMP 331i with electrical connection Binder Series 723 (7-pin); pins 4, 5, 6, 7 are wired through 1:1; standard without contacts; contacts on request; 3-wire version not possible



Ordering code PA 430

PA 430

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Standard version													
	8	5	0										
Analogue output													
	4 ... 20 mA / 2-wire			1									
	0 ... 10 V / 3-wire			3									
	Intrinsic safety for zone 1 / 4 ... 20 mA / 2-wire			E									
	customer			9									consult
Contact ¹													
	without contact			0									
	1 contact			1									
	2 contacts			2									
Electrical connection													
	ISO 4400			1	0	0							
	Binder series 723 (5-pin)			2	0	0							
	Binder series 723 (7-pin) ²			A	0	1							
	M12x1 (5-pin) / metal version			N	1	0							
Unit													
	without ³			0									
	bar			1									
	mbar			2									
	mH ₂ O			3									
	%			P									
	mA			A									
	customer			9									consult
Label on display													
	standard							1					
	neutral							N					
	customer							9					consult
Special version													
	standard							0	0	0			
	customer							9	9	9			consult

¹ max. 1 contact for: 4 ... 20 mA / 2-wire with plug ISO 4400; 0 ... 10 V / 3-wire with Binder 723 (5-pin) or M12x1 (5-pin); Ex-protection
no contact possible with 0 ... 10 V / 3-wire with plug ISO 4400

² intended for the use with DMP 331i, DMP 333i and LMP 331i with el. connection Binder Serie 723 (7-pin)

³ the unit signs are loose-settled



PA 440

Field Display for Current Loop with Contacts

Functional range

- ▶ free scalable display
- ▶ switch mode, hysteresis, parameterizable deceleration of the contacts
- ▶ no external power supply necessary

Product characteristics

- ▶ field display for pressure transmitter with output signal: 4 ... 20 mA / 2-wire or 0 ... 10 V / 3-wire
- ▶ 4-digit LCD display
- ▶ plastic housing
- ▶ pressure compensation element with PTFE-Filter

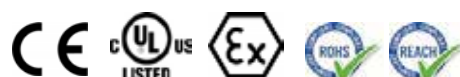
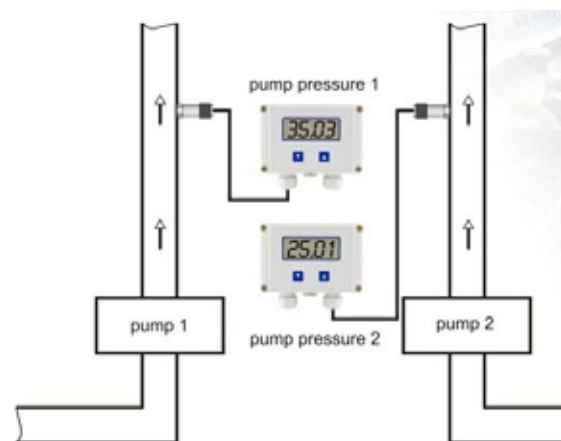
Optional versions

- ▶ IS-version
- ▶ 2 contacts
- ▶ 4-digit LED display

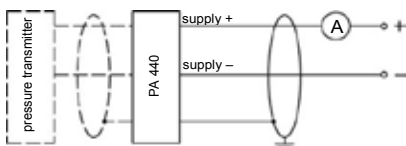
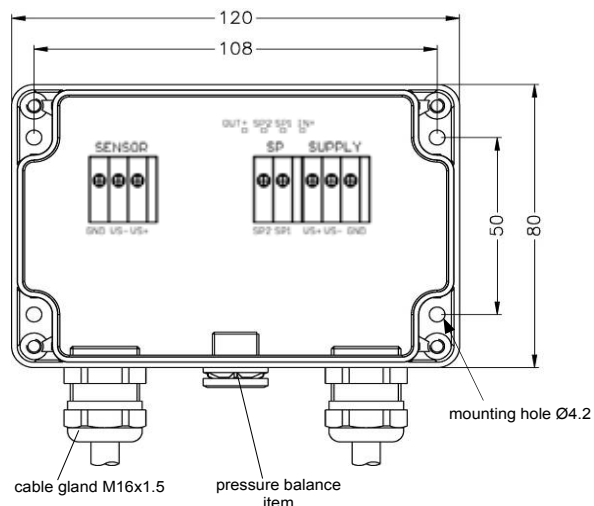
Typical application



in situ display at pumping stations



Analogue signal	
Standard	2-wire: 4 ... 20 mA
Option IS-version	2-wire: 4 ... 20 mA
Option 3-wire	0 ... 10 V (in preparation)
Accuracy	$\leq \pm 0.1 \% \text{ FSO} \pm 1 \text{ digit}$
Supply	
2-wire system	supplied by current loop; voltage drop $\leq 6.5 \text{ V}$ IS version: max. 28 V_{DC} (for combination with transmitter and PA 440)
3-wire system	display is supplied parallel with transmitter; $V_{\text{S}} = 8 \text{ V}_{\text{DC}} \dots 36 \text{ V}_{\text{DC}}$
Contact	
Number, type	2 independent PNP open collector contacts
Switching performance	contact rating max. 125 mA, short-circuit resistant
Switching frequency	max. 8/sec
Delay time	0 ... 100 sec
Miscellaneous	
Electrical protection	reverse polarity protection (no damage, but also no function); electromagnetic compatibility (emission and immunity according to EN 61326); short-circuit protection
Ingress protection	IP 65
Display	4-digit, 7-segment LC display, range of indication -1999 ... +9999; accuracy $0.2 \% \pm 1 \text{ digit}$; standard: LC display, digit height 18 mm option: LED display, digit height 10 mm, red
Permissible temperatures	electronics / environment / storage: $-20 \dots 70 \text{ }^{\circ}\text{C}$
Material display housing	plastic ABS, grey
Cable entries	cable gland M16x1.5 Polyamide, seals NBR, diameter range: standard 5 ... 10 mm
Atmospheric pressure compensation	pressure compensation element with PTFE filter
Terminal clamps	vertical clamps for stranded and solid wires up to 2.5 mm^2
Dimensions (height x width x depth)	80 mm x 120 mm x 57 mm
Weight	approx. 220 g
CE-conformity	EMC Directive: 2014/30/EU
Explosion protection (optionally)	
Approval AX15-PA 440	IBExU08ATEX1126 X zone 1: II 2G Ex ia IIB T4 Gb
Safety technical maximum values	$U_i = 28 \text{ V}_{\text{DC}}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$, $C_i = 0 \text{ nF}$, $L_i = 0 \text{ } \mu\text{H}$
Ambient temperature range	from $-20 \text{ }^{\circ}\text{C}$ to $+70 \text{ }^{\circ}\text{C}$

Wiring diagram**Dimensions (in mm)**

Ordering code PA 440

PA 440



Standard version											
	8	5	1								
Analogue output											
	4 ... 20 mA / 2-wire				1						
	Intrinsic safety for zone 1 / 4 ... 20 mA / 2-wire				E						
	customer				9						consult
Contact											
	without contact				0						
	2 contacts ¹				2						
Unit											
	without ²				0						
	bar				1						
	mbar				2						
	mH ₂ O				3						
	%				P						
	mA				A						
	customer				9						consult
Label on display											
	standard				1						
	neutral				N						
	customer				9						consult
Display											
	LC display						C				
	LED display						D				
Housing material											
	plastic ABS						G				
Special version											
	standard							0	0	0	
	overvoltage protection ³							1	0	1	
	customer							9	9	9	consult

¹ only possible in combination with LED display

² the unit signs are loose-settled

³ not possible for Ex-version



CIT 200

Process Display

Functional range

- ▶ free scalable display
- ▶ four characteristic curve functions selectable (linear, square, square root or user defined)
- ▶ display brightness and filter adjustable
- ▶ programming via infrared remote control

Product characteristics

- ▶ input 0/4 ... 20 mA, 0/1/2 ... 5/10 V
- ▶ 4-digit LED display
- ▶ interface RS-485 (Modbus RTU)
- ▶ front panel housing 72 x 36 mm

Optional versions

- ▶ input Pt100 / Pt500 / Pt1000

Typical application



display panel for silo battery



Supply	
Supply voltage / power consumption	10 ... 30 V _{DC} (not isolated from signal input) / max. 1 W 110 V _{AC} ± 10 % (isolated from signal input) / max. 1,5 VA 230 V _{AC} ± 10 % (isolated from signal input) / max. 1,5 VA
Signal input	
Input signal	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V PT100 / PT500 / PT1000
Accuracy (25 °C)	± 0.1 % FSO, stability: 50 ppm/°C
Display	
Display	LED, red, 4 x 13 mm
Display range	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V: - 999 ... 9999 + decimal point Pt100 / Pt500 / Pt1000: -100,0 ... 600,0 °C
Communication	
Communication interface	RS-485 (Modbus RTU), 8N1/8N2, 1200 – 115200 bit/s
Ingress protection	
Standard	IP 40 (front side), IP 20 (case and connectors)
Option	IP 65 (front side with additional sealing frame for panel cut-out), IP 20 (case and connectors)
Permissible temperatures	
Standard	environment: 0 ... 50 °C, storage: -10 ... 70 °C
Option	environment: -20 ... 50 °C, storage: -20 ... 70 °C
Electrical Protection	
Electrical safety	EN 61010-1
EMC	EN 61326-1
CE-conformity	EMC Directive: 2014/30/EU
Housing	
Housing type / dimensions	10 ... 30 V _{DC} : front panel mounting / 72 x 36 x 86 mm 110 V _{AC} : front panel mounting / 72 x 36 x 103 mm 230 V _{AC} : front panel mounting / 72 x 36 x 103 mm
Material	NORYL UL94V-0
Weight	approx. 175 g
Dimensions	
Accessories	
Infrared remote control IR 1 Enables setting of CIT 200. Material number: IR1-1	

Ordering code CIT 200

CIT 200 - - -

Input type			
0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V	8		
Pt100 , Pt500, Pt1000	3		
Supply			
10 ... 30 VDC	1		
230 VAC	2		
110 VAC	8		
Special version			
standard	0	0	0
sealing frame IP65	0	1	0
operating temperature -20°C...50°C	0	8	0
IP65 + operating temp. -20...50°C	0	P	0
customer	9	9	9
			consult

Accessories		
infrared remote control IR 1	IR 1-1	



CIT 250

Process Display with Contacts

Functional range

- ▶ free scalable, two-coloured display
- ▶ five characteristic curve functions selectable (linear, square, square root, user defined or tank volume)
- ▶ switching mode, hysteresis, timing of contacts settable
- ▶ display brightness and filter adjustable

Product characteristics

- ▶ input 0/4 ... 20 mA, 0/1/2 ... 5/10 V
- ▶ 4-digit LED display
- ▶ transducer supply 24 V_{DC}
- ▶ interface RS-485 (Modbus RTU)
- ▶ front panel housing 72 x 36 mm

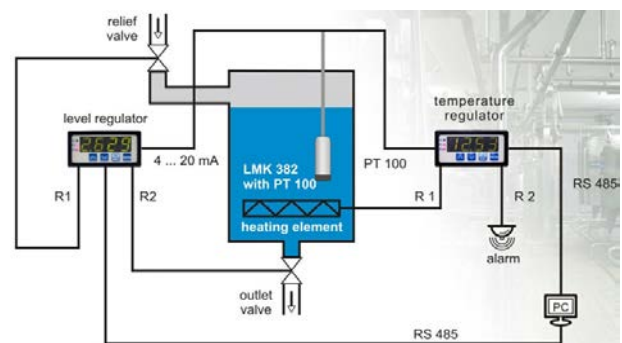
Optional versions

- ▶ input Pt100 / Pt500 / Pt1000
- ▶ input thermocouple
- ▶ output 1/2 relay / OC
- ▶ 5-digit LED display

Typical application



combined level and temperature measurement in heated container



Supply	
Supply voltage / power consumption	85 ... 260 V _{AC} / V _{DC} / max. 4,5 W
Transducer supply	16 ... 35 V _{AC} / 19 ... 50 V _{DC} / max. 4,5 VA
Signal input	
Input signal	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V Pt100 / Pt500 / Pt1000 thermocouple K, S, J, T, N, R, B, E, 0 ... 90 mV
Accuracy (25 °C)	± 0,1 % FSO, stability: 50 ppm/°C
Contacts	
Contact	1/2 SPST relay, max. 30 V _{DC} / 250 V _{AC} , max. 1 A (cos φ 1) 1/2 OC, max. 30 V _{DC} , max. 30 mA (cos φ 1), max. 100mW
Display	
Display	standard: LED, red/green, 4 x 13 mm option: LED, green, 5 x 9 mm ¹
Display range	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V: - 999 ... 9999 + decimal point Pt100 / Pt500 / Pt1000: -100,0 ... 600,0°C thermocouple: -200 ... 1370 °C(K), -50 ... 1768 °C(S, R), -210 ... 1200 °C(J), -200 ... 400 °C(T), -200 ... 1300 °C(N), 250 ... 1820 °C(B), -200 ... 1000 °C(E)
¹ Display 5 x 9 mm only with IP65	
Communication	
Communication interface	RS-485 (Modbus RTU), 8N1/8N2, 1200 – 115200 bit/s
Ingress protection	
Standard	IP 40 (front side), IP 20 (case and connectors)
Option	IP 65 (front side with additional sealing frame for panel cut-out) ² , IP 20 (case and connectors)
² IP65 only with display 5 x 9 mm	
Permissible temperatures	
Standard	environment: 0 ... 50 °C, storage: -10 ... 70 °C
Option	environment: -20 ... 50 °C, storage: -20 ... 70 °C
Electrical protection	
Electrical safety	EN 61010-1
EMC	EN 61326-1
CE-conformity	EMC Directive: 2014/30/EU
Housing	
Housing type / dimensions	front panel mounting / 72 x 36 x 107 mm
Material	NORYL-GFN2S E1
Weight	approx. 165 g
Dimensions	

CIT 250

Ordering Code

Ordering code CIT 250

CIT 250 -

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Input type			
0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V	8		
Pt100, Pt500, Pt1000	3		
thermocouple	A		
Number of outputs			
without	0		
1	1		
2	2		
Output type			
without	0		
SPST relay	1		
Open collector	2		
Supply			
16...35 VAC / 19...50 VDC		3	
85...260 VAC / VDC		4	
Special version			
standard		0	0 0
sealing frame IP65		0	1 0
operating temperature -20°C...50°C		0	8 0
IP65 + operating temp. -20...50°C		0	P 0
customer		9	9 9

consult



CIT 300

Process Display with Contacts and Analogue Output

Functional range

- ▶ free scalable display
- ▶ five characteristic curve functions selectable (linear, square, square root, user defined or tank volume)
- ▶ switching mode, hysteresis, timing of contacts settable
- ▶ display brightness and filter adjustable
- ▶ acoustic signal

Product characteristics

- ▶ input 0/4 ... 20 mA, 0/1/2 ... 5/10 V
- ▶ 4-digit LED display
- ▶ transducer supply 24 V_{DC}
- ▶ interface RS-485 (Modbus RTU)
- ▶ front panel housing 96 x 48 mm

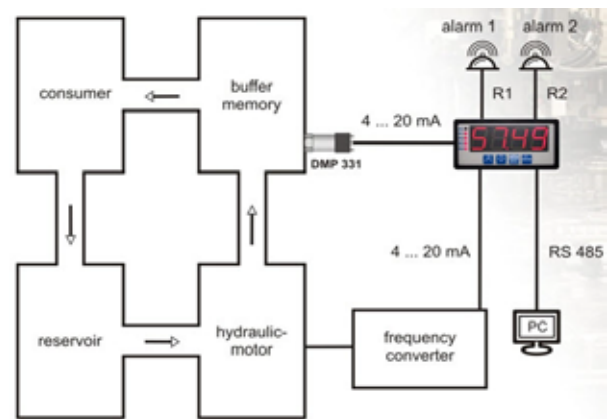
Optional versions

- ▶ input Pt100 / Pt500 / Pt1000
- ▶ input thermocouple, 0 ... 150 mV
- ▶ output 1/2/4 relay / OC
- ▶ output 4 ... 20 mA / 0 ... 10 V
- ▶ wall mounted housing IP67

Typical application





pressure regulation of a hydraulic circuit



Modbus

Supply		
Supply voltage / power consumption	85 ... 260 V _{AC} / V _{DC} / max. 6,5 W 16 ... 35 V _{AC} / 19 ... 50 V _{DC} / max. 6,5 VA	
Transducer supply	24 V _{DC} + 5%, - 10%, max. 100 mA	
Signal input		
Input signal	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V Pt100 / Pt500 / Pt1000 thermocouple K, S, J, T, N, R, B, E, 0 ... 90 mV universal input ¹ 0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V, Pt100 / Pt500 / Pt1000, thermocouple K, S, J, T, N, R, B, E, 0 ... 60/75/100/150 mV	
Accuracy (25 °C)	± 0,1 % FSO, ± 0,2% FSO (TC N), ± 0,5 % FSO (TC S, T, R, B), stability: 50 ppm/°C	
¹ universal input only with front panel housing		
Contacts		
Contact	1/2/4 SPST relay, max. 30 V _{DC} / 250 V _{AC} , max. 1 A (cos φ 1) 1/2/4 OC, max. 30 V _{DC} , max. 30 mA (cos φ 1), max. 100mW	
² 4 contacts only with front panel housing without analogue output, 1 contact only with wall mounted housing and analogue output		
Analogue output		
Output signal / load ³	0/4 ... 20 mA active / max. 700 Ω 4 ... 20 mA passive / max. 600 Ω (24V DC) 0/1 ... 5 V, 0/2 ... 10 V active / min. 2000 Ω	
³ analogue output only with 1 contact (wall mounted housing) resp. 2 contacts (front panel housing)		
Display		
Display	LED, red, 4 x 20 mm	
Display range	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V: - 999 ... 9999 + decimal point Pt100 / Pt500 / Pt1000: -100, 0 ... 600,0°C thermocouple: -200 ... 1370 °C(K), -50 ... 1768 °C(S, R), -210 ... 1200 °C(J), -200 ... 400 °C(T), -200 ... 1300 °C(N), 250 ... 1820 °C(B), -200 ... 1000 °C(E)	
Communication		
Communication interface	RS-485 (Modbus RTU), 8N1/8N2, 1200 – 115200 bit/s	
Ingress protection		
Standard	IP 65 (front side), IP 20 (case and connectors)	
Option	IP 65 (front side with additional sealing frame for panel cut-out), IP 20 (case and connectors) IP 67 (wall mounted housing)	
Permissible temperatures		
Standard	environment: 0 ... 50 °C, storage: -10 ... 70 °C	
Option	environment: -20 ... 50 °C, storage: -20 ... 70 °C	
Electrical protection		
Electrical safety	EN 61010-1	
EMC	EN 61326-1	
CE-conformity	EMC Directive: 2014/30/EU	
Housing		
Housing type / dimensions	front panel mounting / 96 x 48 x 107 mm	wall mounted housing / 110 x 80 x 67 mm
Material	NORYL-GFN2S E1	ABS, PC
Weight	approx. 230 g	ca. 350 g
Dimensions		

Accessories	
<p>Hat rail adapter for front panel housing 48 mm Enables mounting on a hat rail TS35.</p> <p>Material number Z900029</p>	
<p>Infrared remote-control IR 1 Enables configuration of CIT 300 with wall mounted housing, without opening the case cover.</p> <p>Material number IR1-1</p>	

Ordering code CIT 300 panel housing

CIT 300 -

1			
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Input type			
0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V	8		
Pt100, Pt500, Pt1000	3		
thermocouple	A		
universal (mA, mV, V, RTD, TC)	J		
Number of outputs			
without	0		
2	2		
3	3		
4	4		
Output type			
without	0		
2x / 4x SPST relay	1		
2x / 4x Open collector	2		
2x SPST relay + 1x 0/4...20 mA active	3		
2x Open collector + 1x 0/4...20 mA active	4		
2x SPST relay + 1x 4...20 mA passive	9		
2x Open collector + 1x 4...20 mA passive	A		
2x SPST relay + 1x 0/1...5 V, 0/2...10V	B		
2x Open collector + 1x 0/1...5 V, 0/2...10V	C		
Supply			
16...35 VAC / 19...50 VDC		3	
85...260 VAC / VDC		4	
Special version			
standard		0	0 0
sealing frame IP65		0	1 0
operating temperature -20°C...50°C		0	8 0
IP65 + operating temp. -20...50°C		0	P 0
customer		9	9 9

consult

Ordering code CIT 300 wall mounted housing

CIT 300 -

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Input type			
0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V	8		
Pt100, Pt500, Pt1000	3		
thermocouple	A		
Number of outputs			
without	0		
2	2		
Output type			
without	0		
2x SPST relay	1		
2x Open collector	2		
1x SPST relay + 1x 0/4...20 mA active	3		
1x Open collector + 1x 0/4...20 mA active	4		
1x SPST relay + 1x 4...20 mA passive	9		
1x Open collector + 1x 4...20 mA passive	A		
1x SPST relay + 1x 0/1...5 V, 0/2...10V	B		
1x Open collector + 1x 0/1...5 V, 0/2...10V	C		
Supply			
16...35 VAC / 19...50 VDC		3	
85...260 VAC / VDC		4	
Special version			
wall mounted housing IP67		5	0 0
IP67 + operating temp. -20...50°C		5	8 0
customer		9	9 9

consult

Accessories			
hat rail adapter 48 mm		Z900029	
infrared remote control IR 1		IR 1-1	



CIT 350

Process Display with Contacts and Analogue Output

Functional range

- ▶ free scalable display
- ▶ five characteristic curve functions selectable (linear, square, square root, user defined or tank volume)
- ▶ switching mode, hysteresis, timing of contacts settable
- ▶ display brightness and filter adjustable
- ▶ acoustic signal

Product characteristics

- ▶ input 0/4 ... 20 mA, 0/1/2 ... 5/10 V
- ▶ 4-digit LED display
- ▶ transducer supply 24 V_{DC}
- ▶ interface RS-485 (Modbus RTU)
- ▶ front panel housing 48 x 96 mm

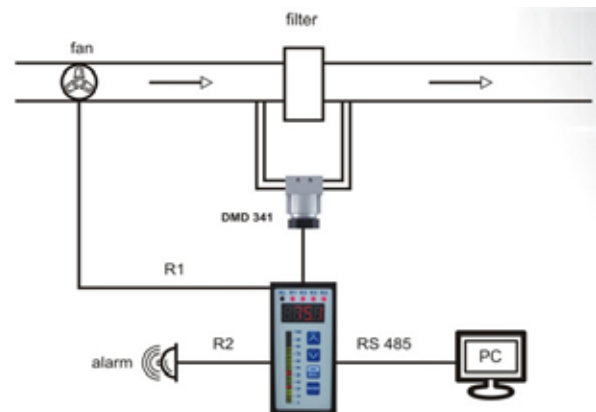
Optional versions

- ▶ output 2/4 relay / OC
- ▶ output 4 ... 20 mA / 0 ... 10 V

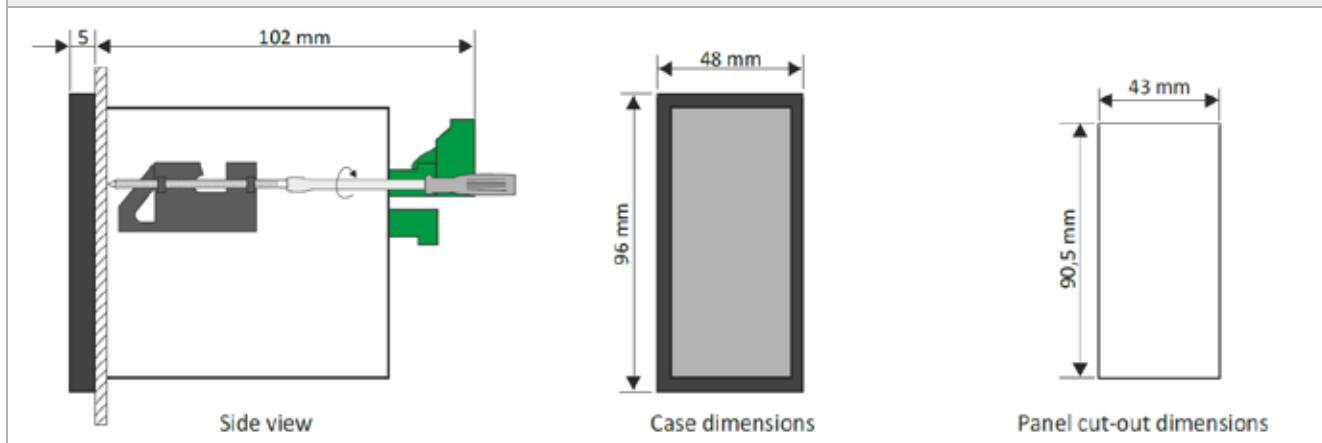
Typical application



filter controlling



Supply	
Supply voltage / power consumption	85 ... 260 V _{AC} / V _{DC} / max. 6,5 W 16 ... 35 V _{AC} / 19 ... 50 V _{DC} / max. 6,5 VA
Transducer supply	24 V _{DC} + 5%, - 10%, max. 100 mA
Signal input	
Input signal	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V
Accuracy (25 °C)	± 0,1 % FSO, stability: 50 ppm/°C
Contacts	
Contact	2/4 SPST relay, max. 30 V _{DC} / 250 V _{AC} , max. 1 A (cos φ 1) 2/4 OC, max. 30 V _{DC} , max. 30 mA (cos φ 1), max. 100mW
Analogue output	
Output signal / load ¹	0/4 ... 20 mA active / max. 700 Ω 4 ... 20 mA passive / max. 600 Ω (24V DC) 0/1 ... 5 V, 0/2 ... 10 V active / min. 2000 Ω
¹ analogue output only with 2 contacts	
Display	
Display	LED, red, 4 x 9 mm + bargraph, red/green, 20 points
Display range	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V: - 999 ... 9999 + decimal point
Communication	
Communication interface	RS-485 (Modbus RTU), 8N1/8N2, 1200 – 115200 bit/s
Ingress protection	
Standard	IP 65 (front side), IP 20 (case and connectors)
Option	IP 65 (front side with additional sealing frame for panel cut-out), IP 20 (case and connectors)
Permissible temperatures	
Standard	environment: 0 ... 50 °C, storage: -10 ... 70 °C
Option	environment: -20 ... 50 °C, storage: -20 ... 70 °C
Electrical protection	
Electrical safety	EN 61010-1
EMC	EN 61326-1
CE-conformity	EMC Directive: 2014/30/EU
Housing	
Housing type / dimensions	front panel mounting / 48 x 96 x 107 mm
Material	NORYL-GFN2S E1
Weight	approx. 220 g
Dimensions	



Accessories	
<p>Hat rail adapter for front panel housing 96 mm Enables mounting on a hat rail TS35.</p> <p>Material number Z900030</p>	

Ordering code CIT 350

CIT 350 -

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Input type			
0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V	8		
Number of outputs			
without	0		
2	2		
3	3		
4	4		
Output type			
without	0		
2x / 4x SPST relay	1		
2x / 4x Open collector	2		
2x SPST relay + 1x 0/4...20 mA active	3		
2x Open collector + 1x 0/4...20 mA active	4		
2x SPST relay + 1x 4...20 mA passive	9		
2x Open collector + 1x 4...20 mA passive	A		
2x SPST relay + 1x 0/1...5 V, 0/2...10V	B		
2x Open collector + 1x 0/1...5 V, 0/2...10V	C		
Supply			
16...35 VAC / 19...50 VDC		3	
85...260 VAC / VDC		4	
Special version			
standard		0 0 0	
sealing frame IP65		0 1 0	
operating temperature -20°C...50°C		0 8 0	
IP65 + operating temp. -20...50°C		0 P 0	
customer		9 9 9	consult
Accessories			
hat rail adapter 96 mm		Z900030	



CIT 400

Process Display with Contacts and Analogue Output

Functional range

- ▶ free scalable display
- ▶ linearization via max. 32 free selectable supporting points
- ▶ switching mode delay of the relay inputs and outputs, parameterizable calibration
- ▶ simulation / testing mode

Product characteristics

- ▶ input signal: 4 ... 20 mA
- ▶ 4-digit LED display
- ▶ housing variant: front panel or hat rail
- ▶ 2 or 4 limit value relays and 1 alarm relay
- ▶ scalable analogue output

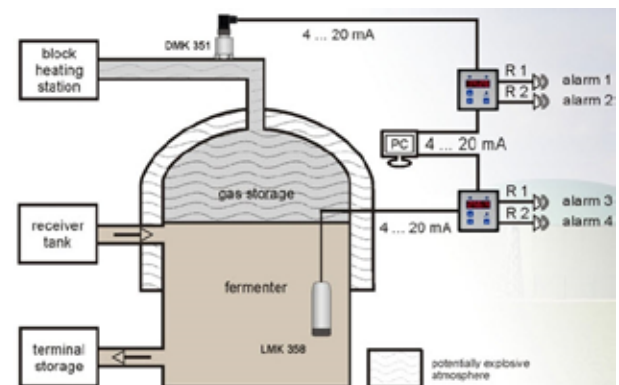
Optional versions

- ▶ supply voltage 230 V_{AC}
- ▶ Ex-approval

Typical application



pressure and level monitoring in biogas plants



Ordering code CIT 400

CIT 400

P H 0 - [] - [] - [] - [] - [] - [] - []

Type of construction									
	hat rail or wall mounting	H							
	front panel mounting	F							
	customer	9							consult
Output									
	2 independent relay outputs		2						
	4 independent relay outputs ¹		4						
Ex-protection									
	without Ex protection			S					
	with Ex protection			E					
Supply									
<i>without Ex-protection</i>									
	24 V _{DC}				3				
	230 V _{AC}				5				
	customer				9				consult
<i>with Ex-protection</i>									
	100 ... 240 V _{AC}				6				
	18 ... 36 V _{DC}				8				
Version									
	BD SENSORS					B			
	neutral					N			
	customer					9			consult
Special version									
	standard						0	0	0
	customer						9	9	9
									consult

¹ not possible in combination with IS-version



CIT 600

Multichannel Process Display with Contacts

Functional range

- ▶ data and configuration transfer via USB and RS-485
- ▶ parameterizable alarms for exceeded input range
- ▶ adjustable contrast and brightness of the display
- ▶ software for parameterization

Product characteristics

- ▶ 2/4/8 input channels
- ▶ input 0/4 ... 20 mA + 0/1/2 ... 5/10 V
- ▶ output 2 relays
- ▶ graphic LC display
- ▶ transducer power supply 24 V_{DC}
- ▶ interface RS-485 (Modbus RTU)
- ▶ front panel housing 96 x 96 mm

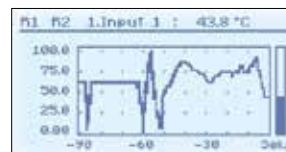
Optional versions

- ▶ input Pt100/500/1000
- ▶ input thermocouples

Display modes

M1	M2	12:02:23	M1 21.02.2018
1. Input	1	48.5	°C
2. Input	2	7.417	mV
3. Input	3	<<10000>	mV
4. Input	4	38.6	l/hir
5. Input	5	185	°F
6. Input	6	38.8	%
7. Input	7	1.98	bar
8. Input	8	18.2	ml/s

- ▶ simultaneous display of max. eight channels with scaled value or standardized value and bargraph



- ▶ chart display of one channel with scaled value and bargraph



- ▶ single channel display with scaled value, standardized value and bargraph



Supply	
Supply voltage / power consumption	85 ... 260 V _{AC} / V _{DC} / max. 12 W 16 ... 35 V _{AC} / 19 ... 50 V _{DC} / max. 12 VA
Transducer supply ¹	24 V _{DC} + 5%, - 10%, max. 200 mA
¹ Transducer supply 24V _{DC} only for current/voltage inputs	
Signal input	
Quantity	2, 4 or 8 inputs
Input signal	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V, common ground Pt100 / Pt500 / Pt1000, 2-/3-wire Thermoelement Typ K, S, J, T, N, R, B, E, 0 ... 60/75/100/150 mV
Accuracy (25 °C)	± 0,1 % FSO, ± 0,2% FSO (TC N), ± 0,5 % FSO (TC S, T, R, B), stability: 50 ppm/°C
Contacts	
Contact	2 el. relays, max. 35 V _{DC} / 24 V _{AC} , max. 200 mA
Display	
Display	graphic LCD (graph max. 8h), black/white, 128 x 64 points, with backlight
Display range	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V: - 9999 ... 9999 + decimal point Pt100 / Pt500 / Pt1000: -100, 0 ... 600,0°C thermocouple: -200 ... 1370 °C(K), -50 ... 1768 °C(S, R), -210 ... 1200 °C(J), -200 ... 400 °C(T), -200 ... 1300 °C(N), 250 ... 1820 °C(B), -200 ... 1000 °C(E)
Communication	
Communication interface	RS-485 (Modbus RTU), 8N1, 1200 – 115200 bit/s, USB PC (Mini-B)
Ingress protection	
Standard	IP 65 (front side), IP20 (case and connectors)
Option	IP 65 (front side with additional sealing frame for panel cut-out), IP 20 (case and connectors)
Permissible temperatures	
Standard	environment: 0 ... 50 °C, storage: -10 ... 70 °C
Option	environment: -20 ... 50 °C, storage: -20 ... 70 °C
Electrical protection	
Electrical safety	EN 61010-1
EMC	EN 61326-1
CE-conformity	EMC Directive: 2014/30/EU
Housing	
Housing type / dimensions	front panel mounting / 96 x 96 x 110 mm
Material	NORYL-GFN2S E1
Weight	approx. 600 g
Dimensions (in mm)	

Software**S-Toolkit**

Program for the complete configuration of CIT 600. The data are transferred via USB memory stick or via interface USB PC / RS-485.

This software is included in scope of supply.

**Accessories**

Lockable door IP 54 for front panel housing 96 x 96 mm

Prevents damage of display and increases access protection.

Material number Z900002



Hat rail adapter for front panel housing 96 mm

Enables mounting on a hat rail TS35.

Material number Z900030



Ordering code CIT 600

CIT 600 -

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5	0
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Number of inputs			
	2	2	
	4	4	
	8	8	
Input type			
		8	
	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V	T	
	Pt100, Pt500, Pt1000, thermocouple		
Number of outputs			
	2	2	
Output type			
		8	
	El. relay 200mA		
Supply			
			3
	16...35 VAC / 19...50 VDC		
	85...260 VAC / VDC		4
Special version			
			0 0 0
	standard		
	sealing frame IP65		0 1 0
	operating temperature -20°C...50°C		0 8 0
	IP65 + operating temp. -20...50°C		0 P 0
	customer		9 9 9
			consult

Accessories		
	lockable, transparent door 96 x 96 mm ¹	Z900002
	hat rail adapter 96 mm	Z900030

¹ not for IP65



CIT 650

Multichannel Process Display with Datalogger and Contacts

Functional range

- ▶ sampling rate from 1 sec up to 1 h
- ▶ triggering of logging via digital input
- ▶ data and configuration transfer via USB, RS-485 or USB memory stick
- ▶ parameterizable alarms for exceeded input range
- ▶ adjustable contrast and brightness of the display
- ▶ software for parameterization and archiving of measured values

Product characteristics

- ▶ 1/4/8 input channels
- ▶ input 0/4 ... 20 mA + 0/1/2 ... 5/10 V
- ▶ output 2 relays
- ▶ graphic LC display
- ▶ transducer power supply 24 V_{DC}
- ▶ interface RS-485 (Modbus RTU)
- ▶ USB host front / rear
- ▶ front panel housing 96 x 96 mm

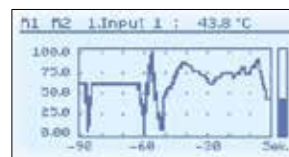
Optional versions

- ▶ input Pt100/500/1000
- ▶ input thermocouples
- ▶ wall mounted housing 166 x 161 mm

Display modes

nl	n2	12:02:28	nl.21.02.2018
1.	Input 1	48.5	°C
2.	Input 2	7.417	mV
3.	Input 3	<<10000>	mV
4.	Input 4	38.6	l/m ³
5.	Input 5	105	°F
6.	Input 6	38.8	%
7.	Input 7	1.08	bar
8.	Input 8	18.2	ml/s

- ▶ simultaneous display of max. eight channels with scaled value or standardized value and bargraph








- ▶ chart display of one channel with scaled value and bargraph



- ▶ single channel display with scaled value, standardized value and bargraph



Modbus

Software	
<p>LoggySoft</p> <p>Program for display (table or chart), archiving, evaluation and export from stored data of CIT 650. The data are imported via USB memory stick or via interface USB PC / RS-485. Export of the data is in TXT format.</p> <p>This software is included in scope of supply.</p>	
<p>S-Toolkit</p> <p>Program for the complete configuration of CIT 650. The data are transferred via USB memory stick or via interface USB PC / RS-485.</p> <p>This software is included in scope of supply.</p>	
Accessories	
<p>Lockable door IP 54 for front panel housing 96 x 96 mm</p> <p>Prevents damage of display and increases access protection.</p> <p style="text-align: center;">Material number Z900002</p>	
<p>Hat rail adapter for front panel housing 96 mm</p> <p>Enables mounting on a hat rail TS35.</p> <p style="text-align: center;">Material number Z900030</p>	
<p>Mini USB Stick 8 GB</p> <p>Enables transfer of logged data and configuration to a PC (even with mounted front door).</p> <p style="text-align: center;">Material number Z900024</p>	

Supply		
Supply voltage / power consumption	85 ... 260 V _{AC} / V _{DC} / max. 12 W 16 ... 35 V _{AC} / 19 ... 50 V _{DC} / max. 12 VA	
Transducer supply ¹	24 V _{DC} + 5%, - 10%, max. 200 mA	
¹ Transducer supply 24V _{DC} only for current/voltage inputs		
Signal input		
Quantity	1, 4 or 8 inputs	
Input signal	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V, common ground Pt100 / Pt500 / Pt1000, 2-/3-wire Thermoelement Typ K, S, J, T, N, R, B, E, 0 ... 60/75/100/150 mV	
Accuracy (25 °C)	± 0,1 % FSO, ± 0,2% FSO (TC N), ± 0,5 % FSO (TC S, T, R, B), stability: 50 ppm/°C	
Digital input	1 input 24 V _{DC} (galvanically separated)	
Contacts		
Front panel housing	2 el. relays, max. 35 V _{DC} / 24 V _{AC} , max. 200 mA	
Wall mounted housing	2 SPST-relays, max. 30 V _{DC} / 250 V _{AC} , max. 1 A (cos φ 1)	
Display		
Display	graphic LCD, black/white, 128 x 64 points, with backlight	
Display range	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V: - 9999 ... 9999 + decimal point Pt100 / Pt500 / Pt1000: -100, 0 ... 600,0°C thermocouple: -200 ... 1370 °C(K), -50 ... 1768 °C(S, R), -210 ... 1200 °C(J), -200 ... 400 °C(T), -200 ... 1300 °C(N), 250 ... 1820 °C(B), -200 ... 1000 °C(E)	
Communication / Datalogger		
Communication interface ²	RS-485 (Modbus RTU), 8N1, 1200 – 115200 bit/s, USB PC (Mini-B), USB Host (A) front-/rear	
Internal memory	8 MB, max. 3 million measurements (expandable with USB memory stick)	
² Interface USB PC und USB Host rear only with front panel housing		
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	front panel mounting / 96 x 96 x 110 mm	wall mounted housing / 166 x 161 x 103 mm
Material	NORYL-GFN2S E1	ABS, PC
Weight	approx. 600 g	ca. 600 g
Dimensions		
<p>The image contains three technical drawings. On the left, a 'Side view' shows the front panel housing with a depth of 110 mm and a width of 96 mm. Below it, 'Case dimensions' shows a square front panel of 96 mm by 96 mm. On the right, 'Wall mounted housing' dimensions are shown: a total width of 166 mm and a total height of 161 mm. A detailed view of the front panel shows a width of 172 mm and a height of 161 mm. Another view shows the side profile with a depth of 103 mm and a mounting flange width of 69 mm. A small detail shows a 10 mm offset and a 54.5 mm height for a specific component.</p>		

Ordering code CIT 650 panel housing

CIT 650 - - - -

Number of inputs		1	1						
		4	4						
		8	8						
Input type									
	0/4 ... 20 mA, 0/1 ... 5 V, 0/2 ... 10 V			8					
	Pt100 , Pt500, Pt1000, thermocouple			T					
Number of outputs		2	2						
Output type									
	El. relay 200mA			8					
USB interface									
	Front USB host port			5	1				
	Rear USB host port			5	2				
Supply									
	16...35 VAC / 19...50 VDC					3			
	85...260 VAC / VDC					4			
Special version									
	standard					0	0	0	
	sealing frame IP65 ¹					0	1	0	
	operating temperature -20°C...50°C					0	8	0	
	sealing frame IP65 + -20...50°C ¹					0	P	0	
	customer					9	9	9	consult

¹ only for rear USB host port

Ordering code CIT 650 wall mounted housing

CIT 650 - - - -

Number of inputs		1	1						
		4	4						
		8	8						
Input type									
	0/4 ... 20 mA			1					
	0/1 ... 5 V, 0/2 ... 10 V			2					
	Pt100 , Pt500, Pt1000			3					
	Thermocouple			A					
Number of outputs		2	2						
Output type									
	SPST relay 1A			1					
USB interface									
	Front USB host port			5	1				
Supply									
	16...35 VAC / 19...50 VDC					3			
	85...260 VAC / VDC					4			
Special version									
	wall mounted housing IP65					5	0	0	
	wall mounted housing IP65 + -20...50°C					5	8	0	
	customer					9	9	9	consult
Prices EXW Thierstein, excluding package									

Accessories			
lockable, transparent door 96 x 96 mm		Z900002	
hat rail adapter 96 mm		Z900030	
mini USB stick 8GB		Z900024	



CIT 700 / 750

Multichannel Process Display with Datalogger, Contacts and Analogue Outputs

Functional range

- ▶ 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
- ▶ webservice incl. HTML5 widgets
- ▶ e-mail function

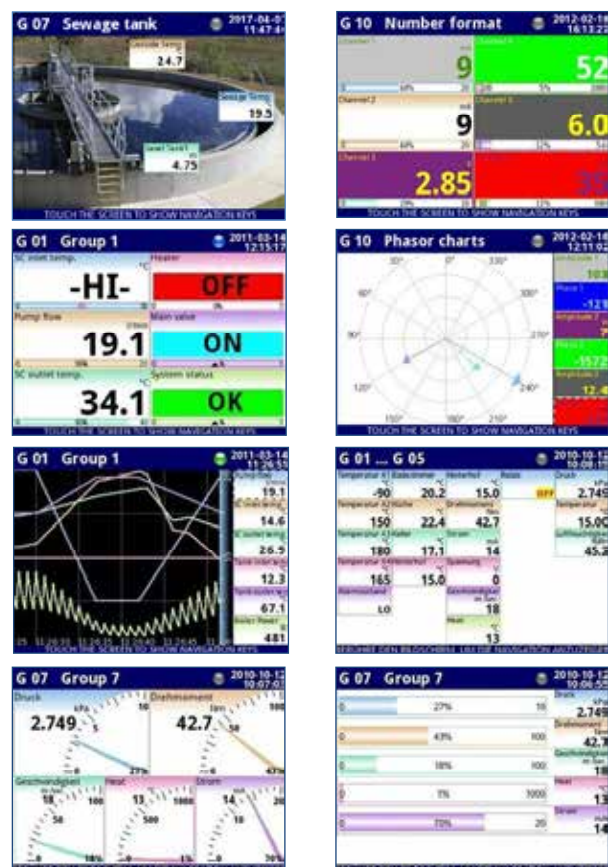
Datalogger

- ▶ 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

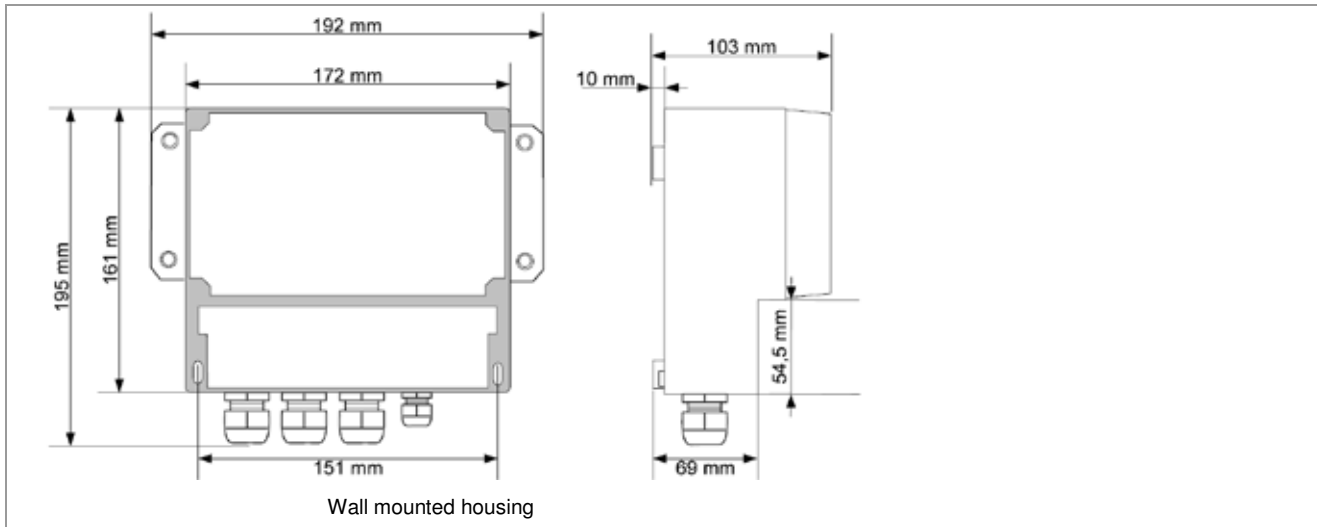
- ▶ front panel housing 96 x 96 / 144 x 144mm
- ▶ graphic TFT monitor, touchscreen
- ▶ 3 slots for 40 different input- / output modules
- ▶ interfaces: RS-485 (Modbus RTU), RS-232, USB-Host, Ethernet (Modbus TCP)
- ▶ transducer power supply 24 V_{DC}

Display modes



Modbus

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		
Internal 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 mm	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		
<p>Side view</p>	<p>Case dimensions</p>	<p>Backside view</p>

**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, UI16, 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 μ A	0 ... 110 k Ω / 4 Ω
Measurement ranges	0/1 ... 5 V, 0/2 ... 10 V	0 ... 20 mA, 4 ... 20 mA	0 ... 110 k Ω
Accuracy	0,1 % @25°C, stability: 50 ppm/°C		
Internal impedance	61 k Ω	100 Ω , 50 mA fuse	121 k Ω
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 k Ω , 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 k Ω		4 k Ω
TC4, TC8, TC12 – 4 / 8 / 12 thermocouple inputs			
Input range/resolution	-30...30mV / 1 μ V		-120...120 mV / 4 μ V
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 M Ω		6 M Ω
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 / 1 μ A		
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 μ V	-15 ... 120 mV / 4 μ V
Measurement ranges	0/1 ... 5 V, 0/2 ... 10 V	-10 ... 25 mV	-10 ... 100 mV
Accuracy	0,1 % @ 25 °C, stability 50 ppm/°C, (-10 ... 25 mV: 0,15 % @ 25 °C)		
Internal impedance	> 100 k Ω	> 100 k Ω	> 100 k Ω
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 k Ω , 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 k Ω		4 k Ω
Thermocouple inputs			
Input range/resolution	-15 ... 30 mV / 2 μ V		-15 ... 120 mV / 4 μ V
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 M Ω		< 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 μ A		
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 μ A
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		

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		

Accessories	
License key for datalogger capabilities Material number LK-700	Activation of datalogger capabilities
License key for e-mail notifications Material number LK-702	Activation of e-mail notifications (Ethernet port required)
Software DAQ-Manager Program for displaying (table or graph), archiving, evaluation and export data stored on CIT 700 with enabled data logging capabilities. Data are imported via USB flash drive or Ethernet. Export of data is performed in CSV format. The program shows current measurements as chart or graphic (Ethernet port required). Material number SW-DAQ	
Lockable door IP 54 for front panel housing Prevents damage of display and increases access protection. 96 mm Material number Z900002 144 mm Material number Z900025	
Mini USB Stick 8 GB Enables transfer of logged data and configuration to a PC (even with mounted front door). Material number Z900024	

Ordering code CIT 700 / 750 panel housing

CIT		[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
Basic version											
	TFT display 3,5"	7	0	0							
	TFT display 5,7" ¹	7	5	0							
Slot P											
	Supply 19..50 VDC, 16...35 VAC										
	Output 24 VDC 200 mA										
	Digital input 24 VDC, RS-485 Modbus RTU										
	Supply 85..260 VAC/DC										
	Output 24 VDC 200 mA										
	Digital input 24 VDC, RS-485 Modbus RTU										
Slot D											
	empty										
	rear USB host port										
	rear USB host port										
	Ethernet 10 Mbit/s										
	Rear USB host port										
	Ethernet 10 Mbit/s, RS-485 Modbus RTU										
	RS-485 Modbus RTU / RS-232										
Slot C / B / A											
	empty										
	16x current input (I)										
	24x current input (I)										
	6x current input (isolated)										
	16x voltage input (U)										
	24x voltage input (U)										
	4x U + 4x I input										
	8x U + 8x I input										
	12x U + 12x I input										
	8x binary input (D)										
	16x binary input (D)										
	24x binary input (D)										
	4x U + 4x I + 8x D input										
	8x U + 8x I + 8x D input										
	4x U + 4x I + 8x NTC input										
	8x U + 8x I + 8x NTC input										
	4x resistance thermometer input (RTD)										
	6x resistance thermometer input (RTD)										
	4x thermocouple input (TC)										
	8x thermocouple input (TC)										
	12x thermocouple input (TC)										
	3x universal input (I, U, RTD, TC)										
	5x universal input (I, U, RTD, TC)										
	2x time counter input										
	4x time counter input										
	2x pulse counter input										
	4x pulse counter input										
	2x flowmeter + 2x I input										
	4x flowmeter + 4x I input										
	2x ratemeter + 2x I-input										
	4x ratemeter + 4x I-input										
	2x current output										
	4x current output										
	6x current output										
	8x current output										
	8x SPST relay 1A										
	12x SPST relay 1A										
	4x SPDT relay 5A										
	6x SPDT relay 5A										
	8x SSR output										
	16x SSR output										
	24x SSR output										
Special version											
	standard ²										0 0 0
	sealing frame IP65 ²										0 1 0
	front USB host port										0 B 0
	operating temperature -20°C...50°C										0 8 0
	sealing frame IP65 + -20...50°C ²										0 P 0
	front USB host port + -20...50°C										0 K 0
	customer										9 9 9

¹ not with TFT display 3,5"

² only with rear USB host port

Ordering code CIT 700 wall mounted housing

CIT

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Basic version

TFT display 3,5" 7 0 0

Slot P

Supply 19..50 VDC, 16...35 VAC	
Output 24 VDC 200 mA	P S 3 2
Digital input 24 VDC, RS-485 Modbus RTU	
Supply 85..260 VAC/DC	
Output 24 VDC 200 mA	P S 4 2
Digital input 24 VDC, RS-485 Modbus RTU	

Slot D

empty	E
Ethernet 10 Mbit/s	E T E
Ethernet 10 Mbit/s	
RS-485 Modbus RTU	E T R

Slot C / B / A**SLOT C****SLOT B****SLOT A**

2x universal / flowmeter input (I, U, RTD, TC)			F U N 2
4x universal / flowmeter input (I, U, RTD, TC)			F U N 4
2x pulse counter/ratemeter / 4x binary input		D U 2	
4x binary input		D 4	
2x SPST relay 1A	R 2 1		
4x SPST relay 1A	R 4 1		
2x current output	I O 2		
4x current output	I O 4		
2x SSR output	S 2		
4x SSR output	S 4		
2x SPST relay 1A + 2x current output	R 2 1 I O 2		
2x SPST relay 1A + 2x SSR output	R 2 1 S 2		
2x current output + 2x SSR output	I O 2 S 2		

Special version

USB + Wall mounted housing IP65	5 B 0	
USB + wall mounted housing IP65 + -20...50°C	5 K 0	auf Anfrage
customer	9 9 9	auf Anfrage

Accessories

licence key datalogger	LK-700
licence key e-mail notifications	LK-702
lockable, transparent door 96 x 96 mm	Z900002
lockable, transparent door 144 x 144 mm	Z900025
hat rail adapter 96 mm	Z900030
hat rail adapter 144 mm	Z900031
software DAQ-manager	SW-DAQ
mini USB stick 8GB	Z900024

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