DISPLAYS AND EVALUATION DEVICES

PRODUCT CATALOGUE

PRESSURE at the highest **LEVEL.**

BD|SENSORS
pressure measurement

>> www.bdsensors.de

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 BD|SENSORS has concentrated on electronic pressure measurement technology from the beginning.

With our unremitting product and 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.

BD|SENSORS
pressure measurement

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.

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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.

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

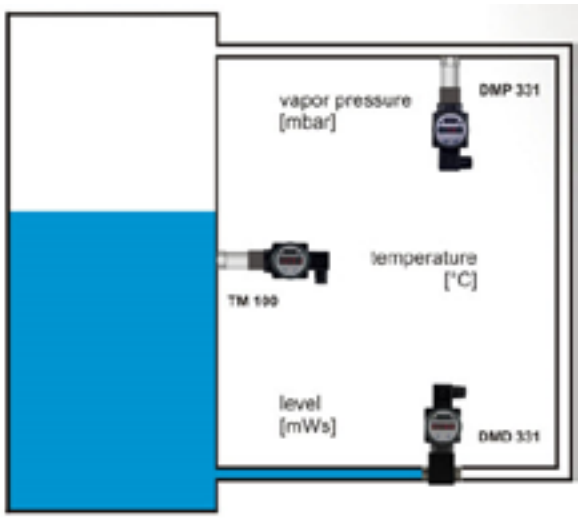
- plug-on display for pressure transmitter with output signal: 4 … 20 mA / 2-wire or 0 … 10 V / 3-wire
- 4-digit LED display

Optional versions

- IS-version
- 1 or 2 programmable contacts

Typical application

in situ display of pressure, temperature and level



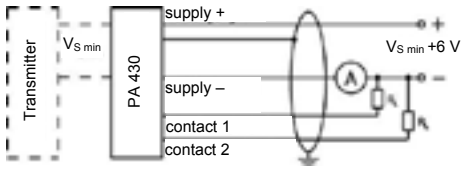
Analogue signal	
2-wire-system	2-wire: 4 ... 20 mA
Option Ex-protection	2-wire: 4 ... 20 mA
3-wire-system	0 ... 10 V
Supply	
2-wire-system	supplied by current loop; voltage drop ≤ 6 V; $V_S = (V_{T\,min} ... V_{T\,max}) + 6\ V_{DC}$ with V_T = supply of the used transmitter
	Ex-protection: max. 28 V_{DC} (for combination of transmitter and PA 430)
3-wire-system	display is supplied parallel with transmitter $V_{S\,min} = 8\ V_{DC} ... V_{T\,min}$; $V_{S\,max} = V_{T\,max} ... 36\ V_{DC}$ with V_T = supply of the used transmitter
Contact (optionally) [1]	
Number, type	max. 2 independent PNP open collector contacts
Switching performance	$V_{switch} = V_S - 2$ V; contact rating max. 125 mA, short-circuit resistant
max. switching current [2]	70 mA
Repeatability	≤ ± 0.1 % FSO
Switching frequency	max. 10 Hz
Switching cycles	> 100 x 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

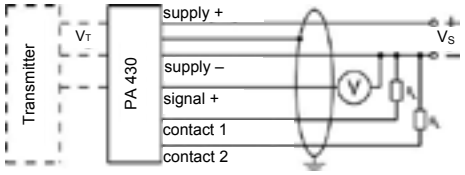
Miscellaneous	
Electrical protection	reverse polarity protection (no damage, but also no function); electromagnetic compatibility (emission and immunity according to EN 61326); short-circuit protection; ingress protection IP 65
Display	4-digit, 7-segment red LED display, digit height 7 mm; range of indication -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 V, I_i = 93 mA, P_i = 660 mW, C ≈ 0 nF, L_i ≈ 0 µH; plus cable inductivities 1 µH/m and cable capacities 100 pF/m
Permissible temperature for environment	-25 ... 70° C

Wirings diagrams

2-wire-system (current)



3-wire-system (voltage)

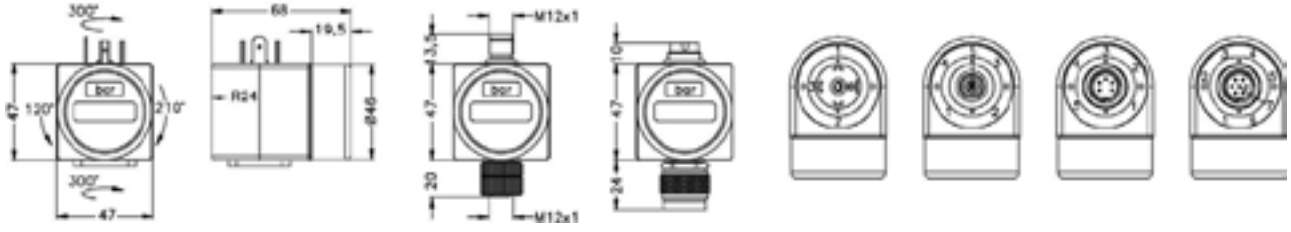


Pin configuration

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

Dimensions (in mm)



Ordering code PA 430

PA 430 □□□-□-□-□□□-□-□-□□□

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_2O									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); IS 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

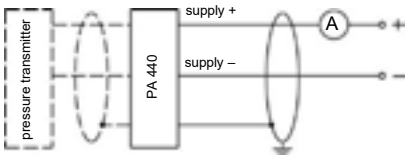
- IS-version
- 2 contacts
- 4-digit LED display

Typical application

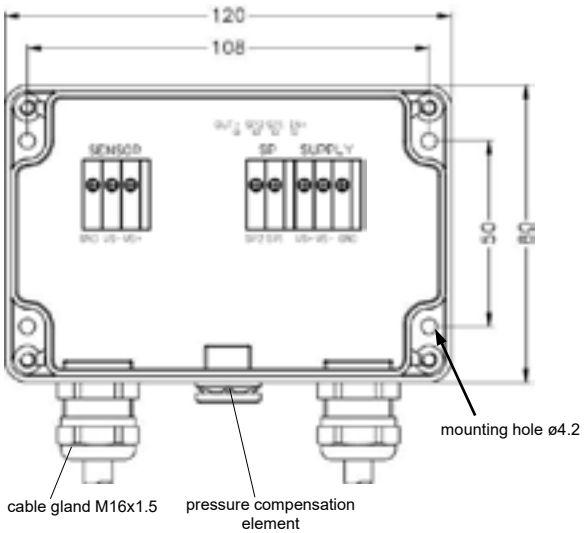
in situ display at e.g. for tank batteries, pumping stations and much more

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	≤ ± 0.1 % FSO ± 1 digit
Supply	
2-wire system	supplied by current loop; voltage drop ≤ 6.5 V
	IS version: max. 28 V_{DC} (for combination with transmitter and PA 440)
3-wire system	display is supplied parallel with transmitter; V_S = 8 V_{DC} … 36 V_{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 % ± 1 digit; standard: LC display, digit height 18 mm option: LED display, digit height 10 mm, red
Permissible temperatures	electronics / environment / storage: -20 ... 70 °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/width/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	IBExU 08 ATEX1126 X / IECEx IBE 21.0023X zone 1: II 2G Ex ia IIB T4 Gb
Safety technical maximum values	U_i = 28 V_{DC}, I_i = 93 mA, P_i = 660 mW, C_i = 0 nF, L_i = 0 µH
Ambient temperature range	from -20 °C to +70 °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_2O						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 IS 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

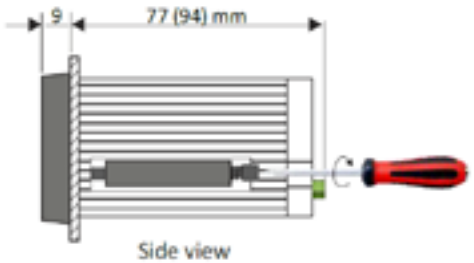
- input Pt100 / Pt500 / Pt1000

Typical application

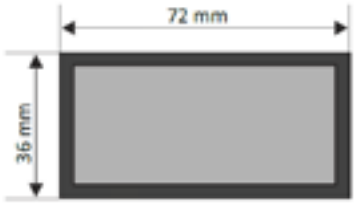
display panel for silo battery

Modbus

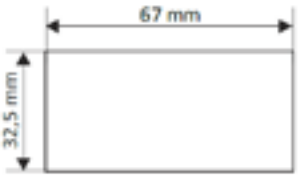
Supply	
Supply voltage / power consumption	10 … 30 V_{DC} (not isolated from signal input) / max. 1 W 110 V_{AC} ± 10 % (isolated from signal input) / max. 1,5 VA 230 V_{AC} ± 10 % (isolated from signal input) / max. 1,5 VA
Signal input	
Input signal	0/4 … 20 mA, 0/1 … 5 V, 0/2 … 10 V PT100 / PT500 / 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	



Side view



Case dimensions



Panel cut-out dimensions

Accessories	
Infrared remote control IR 2 Enables setting of CIT 200. Material number: Z900033	

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 2	Z900033

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

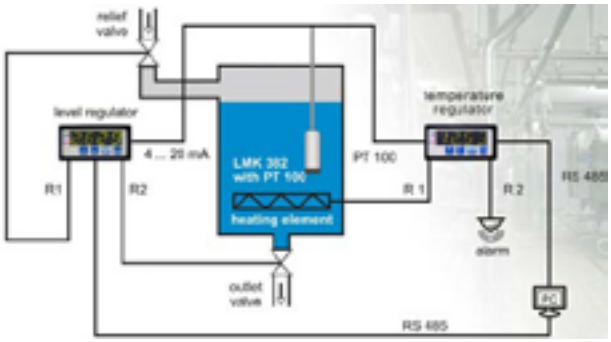
- input 0/4 ... 20 mA, 0/1/2 ... 5/10 V
- 4-digit LED display
- transducer supply 24 V_{DC}
- interface RS-485 (Modbus RTU)
- front panel housing 72 x 36 mm

Optional versions

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

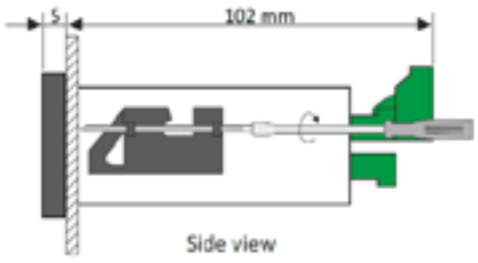
Typical application

combined level and temperature measurement in heated container

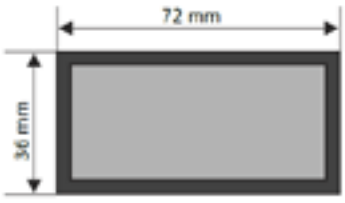


Modbus

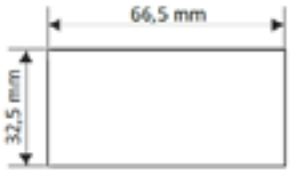
Supply	
Supply voltage / power consumption	85 … 260 V_{AC} / V_{DC} / max. 4,5 W 16 … 35 V_{AC} / 19 … 50 V_{DC} / max. 4,5 VA
Transducer supply	24 V_{DC} + 5%, - 10%, max. 100 mA
Signal input	
Input signal	0/4 … 20 mA, 0/1 … 5 V, 0/2 … 10 V Pt100 / Pt500 / Pt1000 thermocouple K, S, J, T, N, R, B, E, 0 … 90 mV
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	



Side view



Case dimensions



Panel cut-out dimensions

Ordering code CIT 250

CIT 250 - 1 □ □ - 1 - □ - □ □ □

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

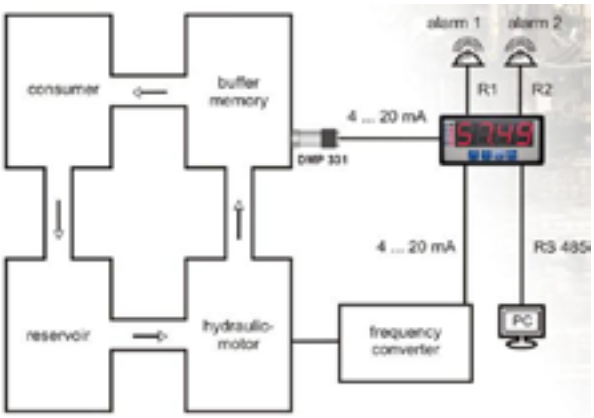
- input 0/4 ... 20 mA, 0/1/2 ... 5/10 V
- 4-digit LED display
- transducer supply 24 V_{DC}
- interface RS-485 (Modbus RTU)
- front panel housing 96 x 48 mm

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

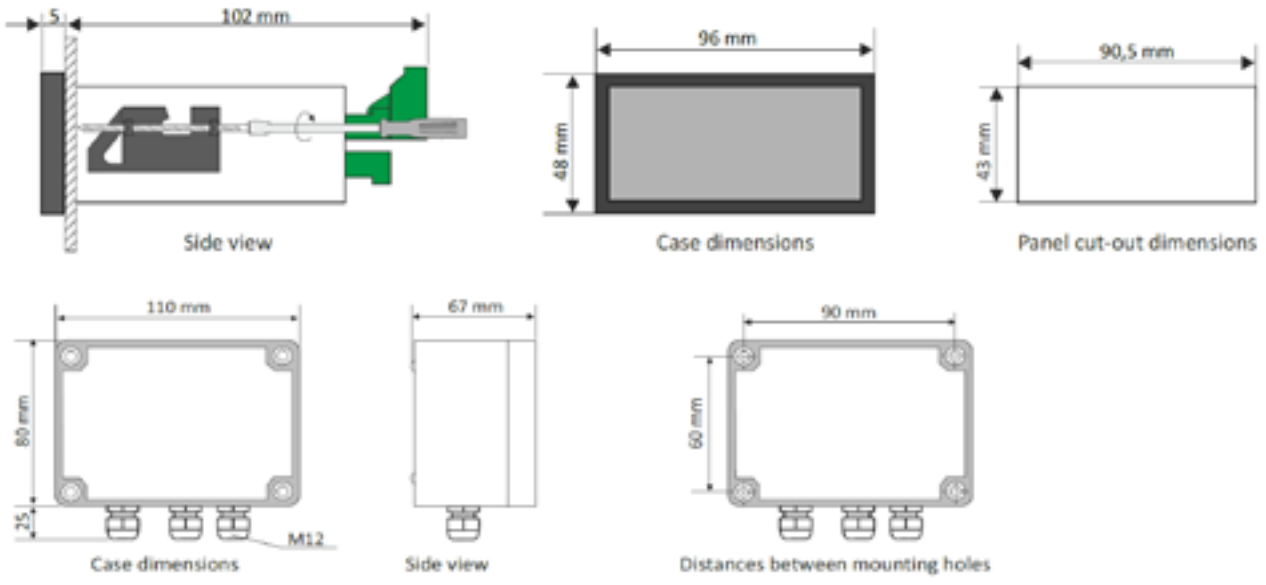
Typical application

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	
Hat rail adapter for front panel housing 48 mm Enables mounting on a hat rail TS35. Material number: Z900029	
Infrared remote-control IR 2 Enables configuration of CIT 300 with wall mounted housing, without opening the case cover. Material number: Z900033	

Ordering code CIT 300 panel housing

CIT 300 - 1 □□□ - 1 - □ - □□□

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 - 1 □□□ - 1 - □ - □□□

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 2	Z900033

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

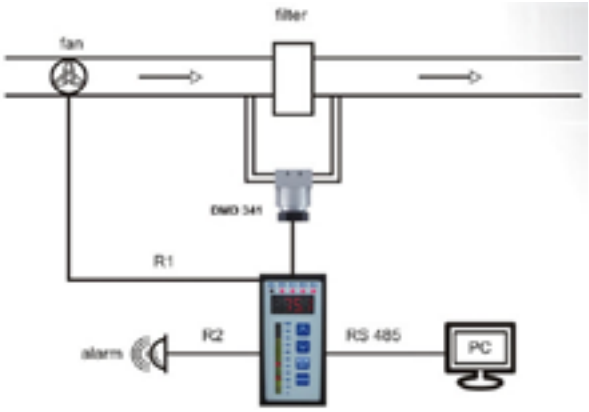
- input 0/4 ... 20 mA, 0/1/2 ... 5/10 V
- 4-digit LED display
- transducer supply 24 V_{DC}
- interface RS-485 (Modbus RTU)
- front panel housing 48 x 96 mm

Optional versions

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

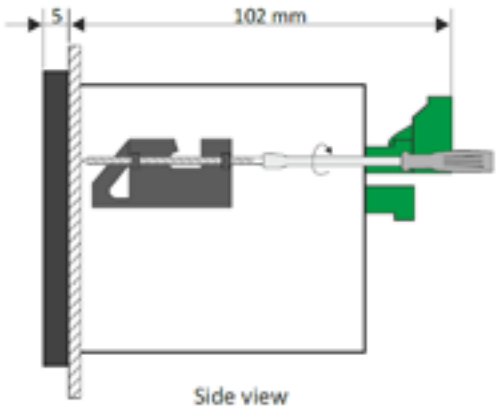
Typical application

filter controlling

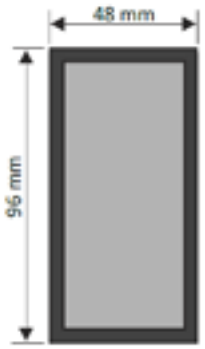


Modbus

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
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	



Side view



Case dimensions

Panel cut-out dimensions

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

Ordering code CIT 350

CIT 350 - 1 □ □ - 1 - □ - □ □ □

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

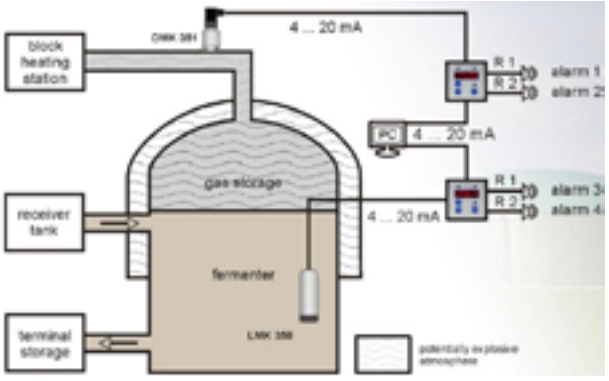
- input signal: 4 ... 20 mA
- 4-digit LED display
- housing variant:
  front panel or hat rail
- 2 or 4 limit value relays and
  1 alarm relay
- scalable analogue output

Optional versions

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

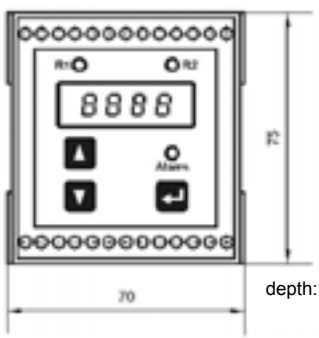
Typical application

pressure and level monitoring in biogas plants



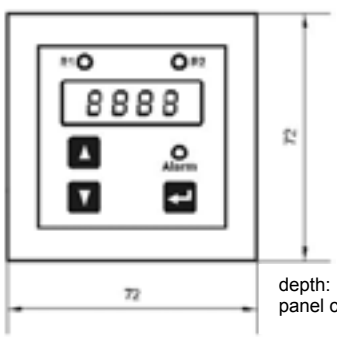
Signal output			
Output signal, permissible load	0/4 … 20 mA, max. 500 Ω, galvanically insulated		
Signal input			
2-/ 3-wire-system	4 … 20 mA (in front panel housing only 2-wire-system)		
Load	R_i = 50 Ω; input current max. 75 mA without damage; protected by poly-switch		
Supply			
Supply voltage AC-device	standard: 230 V_{AC}, 50/60 Hz IS-protection (optional): 100 … 240 V_{AC}, 50/60 Hz		others on request
Supply voltage DC-device	standard: 24 V_{DC} ± 10 % IS-protection (optional): 18 … 36 V_{DC}		others on request
Power consumption	standard: approx. 4 VA		option: approx. 6 VA
Contacts / Alarm relay			
Contacts	standard: 2 independent relay contacts (floating SPDT) option: 4 independent relay contacts (floating SPDT)		
Alarm relay	1 relay contact (floating SPDT with hat rail housing; floating NO with front panel housing); notifies broken line and over-current		
Switching voltage	max. 230 V_{AC}		
Switching current	max. 5 A (cos φ 0.9)		
Sensor supply			
DC device	V_S – 3 V	IS-protection (optional): approx. 14.5 V @ 20 mA	
AC device	approx. 14 V @ 20 mA; approx. 20.5 V @ 4 mA		
Sensor current limit			
Standard	approx. 32 mA		
Ex-protection (optional)	linear limit, electronic limit approx. 37 mA		
Electrical protection			
Short-circuit protection	permanent - galvanic insulation of the contacts against measuring circuit and power supply		
Reverse polarity protection	DC device: no damage, but also no function		
EMC	emission and immunity according to EN 61326		
Electrical connection			
Standard	with fixed terminal clamp ; clamp section 2.5 mm²		
Housing			
	front panel housing		**hat rail housing**
Material	Noryl		ABS
Ingress protection	housing: IP 40 / IP 65 [1] clamps: IP 20		housing: IP 40 clamps: IP 20
[1] IP 65 can be reached by an additional, front sided sealing with a flexible transparent protection cover (available as accessory)			
Miscellaneous			
Display	4-digit 7-segment-LE display, red; digit height 10 mm; digit with 7.5 mm; range of indication -1999 ... 9999; accuracy 0.2 % ± 1 Digit		
LEDs	contacts: green alarm: red		
Permissible temperatures	electronics / environment / storage: -20 ... 60 °C		
Weight	AC-device: approx. 450 g		DC-device: approx. 300 g
CE-conformity	EMC Directive: 2014/30/EU		
Explosion protection (optional) – only in combination with 2 contacts and 1 alarm relay			
Approval AX13-CIT 400	IBExU05 ATEX 1097 X II (1)G [Ex ia Ga] IIC II (1)D [Ex ia Da] IIIC		
Safety technical maximum values	U_o = 25.2 V, I_o = 84.8 mA, P_o = 535 mW; IIC: C_o = 107 nF; L_o = 5.7 mH		
Permissible temperatures	environment: -20 ... 40 °C		
Dimensions (in mm)			

hat rail mounting



depth: 110 mm

front panel mounting



depth: 110 mm
panel cut-out: 68 x 68 mm

Ordering code CIT 400

CIT 400 PH0 - □ - □ - □ - □ - □ - □□□

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									
without Ex-protection									
24 V_{DC}				3					
230 V_{AC}				5					
customer				9					consult
with Ex-protection									
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

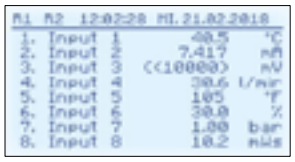
Product characteristics

- 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

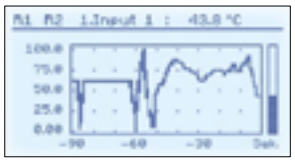
Optional versions

- input Pt100/500/1000
- input thermocouples

Display modes



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

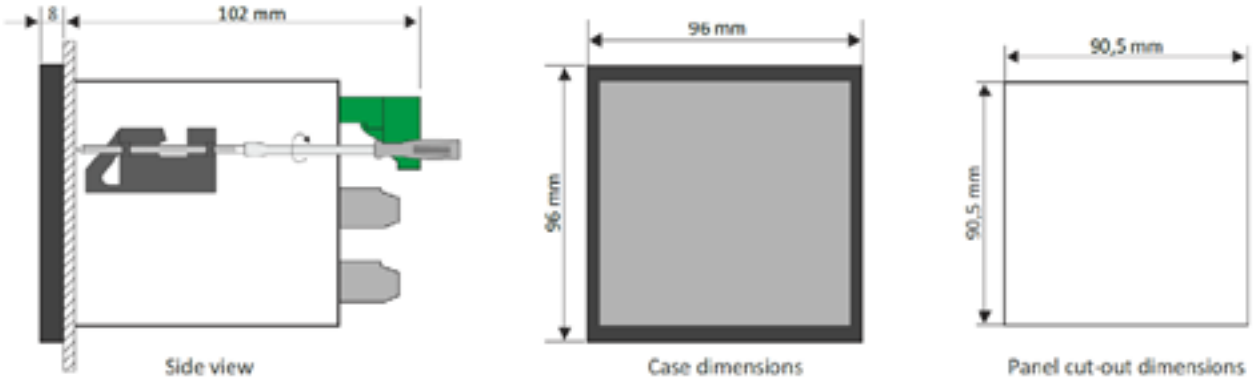


- chart display of one channel with scaled value and bargraph

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

Modbus

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 - [ ][ ][ ][ ] - 5 0 - [ ] - [ ][ ][ ]

Number of inputs								
2	2							
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				
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	
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

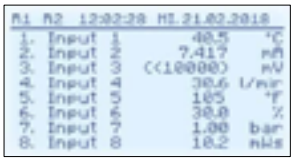
Product characteristics

- 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

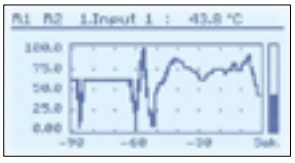
Optional versions

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

Display modes



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



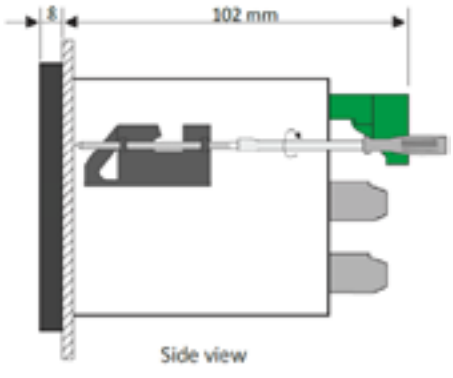
- chart display of one channel with scaled value and bargraph

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

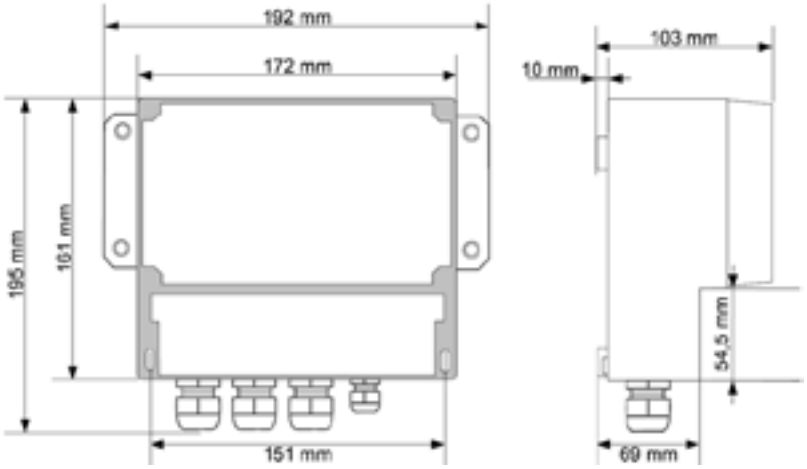
Modbus

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

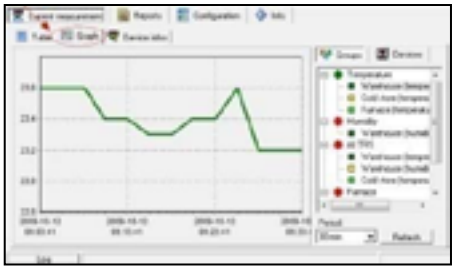
Dimensions



Case dimensions



Wall mounted housing

Software	
LoggySoft 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. This software is included in scope of supply.	
S-Toolkit Program for the complete configuration of CIT 650. 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	
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 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

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
- webserver incl. HTML5 widgets
- e-mail function

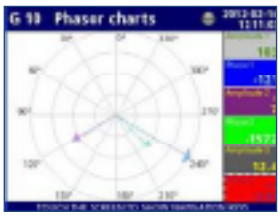
Datalogger

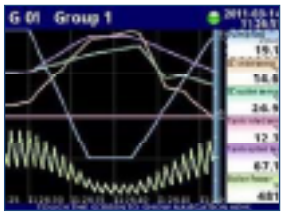
- data acquisition of up to 60 channels
- 2 configurable sample rates (max. 10 Hz)
- extensive triggering functions
- internal memory 1.5 GB
- data transfer via USB memory stick or Ethernet

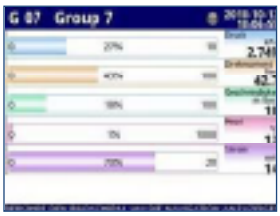
Product characteristics

- 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}

Display modes







CE RoHS REACH Modbus

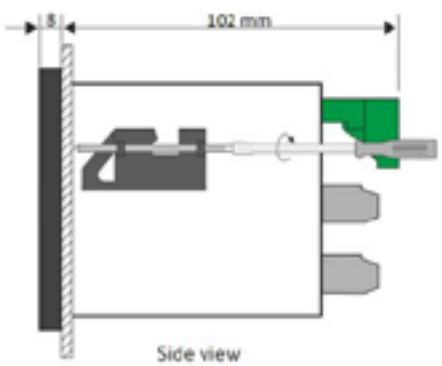
Display		
Display	CIT 700: graphic TFT, 3,5", touchscreen, colored (16 bit), 320 x 240 pixels CIT 750: graphic TFT, 5,7“, touchscreen, colored (16 bit), 320 x 240 pixels	
Datalogger		
Internnal memory	1,5 GB, max. 125 000 000 measurements	
Sampling rate	0,1 sec to 24 h, 2 sampling rates, triggering internal/external, (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

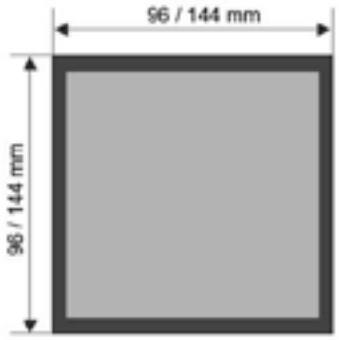
Remote control

HTML5 Widgets

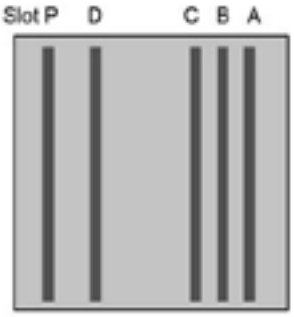
Dimensions



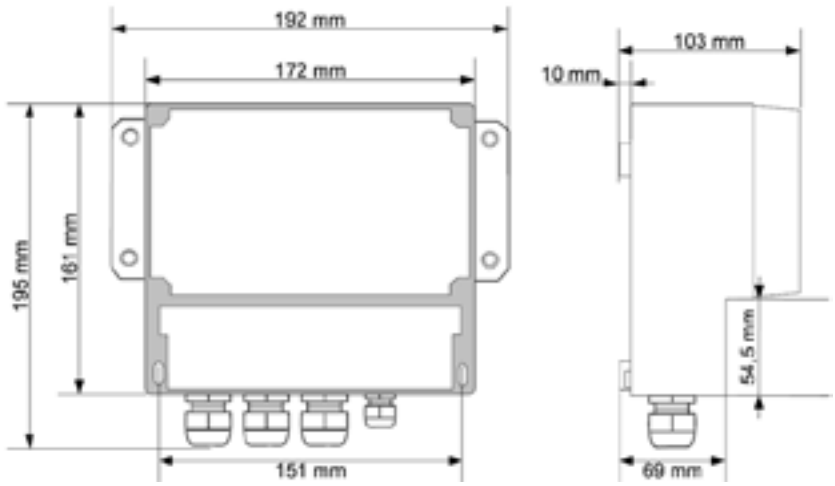
Side view



Case dimensions



Backside view

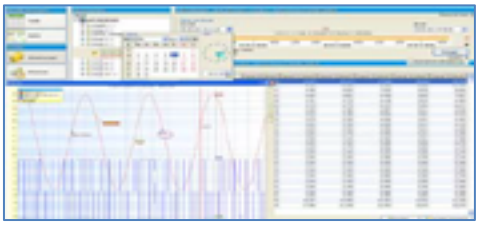


Wall mounted housing

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			

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	
Hat rail adapter for panel housing Enables mounting on a hat rail TS35. 96 mm Material number Z900030 144 mm Material number Z900031	
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		P S 3 2											
Supply 85..260 VAC/DC Output 24 VDC 200 mA Digital input 24 VDC, RS-485 Modbus RTU		P S 4 2											
Slot D													
empty			E										
rear USB host port			U S B										
rear USB host port Ethernet 10 Mbit/s			E T U										
Rear USB host port Ethernet 10 Mbit/s, RS-485 Modbus RTU RS-485 Modbus RTU / RS-232			A C M										
Slot C / B / A				**SLOT C**		**SLOT B**		**SLOT A**					
empty				E		E		E					
16x current input (I)				I 1 6		I 1 6		I 1 6					
24x current input (I)				I 2 4	[1]	I 2 4	[1]	I 2 4	[1]				
6x current input (isolated)				I S 6		I S 6		I S 6					
16x voltage input (U)				U 1 6		U 1 6		U 1 6					
24x voltage input (U)				U 2 4	[1]	U 2 4	[1]	U 2 4	[1]				
4x U + 4x I input				U I 4		U I 4		U I 4					
8x U + 8x I input				U I 8		U I 8		U I 8					
12x U + 12x I input				U I 1 2	[1]	U I 1 2	[1]	U I 1 2	[1]				
8x binary input (D)				D 8		D 8		D 8					
16x binary input (D)				D 1 6		D 1 6		D 1 6					
24x binary input (D)				D 2 4	[1]	D 2 4	[1]	D 2 4	[1]				
4x U + 4x I + 8x D input				U I 4 D 8		U I 4 D 8		U I 4 D 8					
8x U + 8x I + 8x D input				U I 8 D 8	[1]	U I 8 D 8	[1]	U I 8 D 8	[1]				
4x U + 4x I + 8x NTC input				U I 4 N 8		U I 4 N 8		U I 4 N 8					
8x U + 8x I + 8x NTC input				U I 8 N 8	[1]	U I 8 N 8	[1]	U I 8 N 8	[1]				
4x resistance thermometer input (RTD)				R T 4		R T 4		R T 4					
6x resistance thermometer input (RTD)				R T 6	[1]	R T 6	[1]	R T 6	[1]				
4x thermocouple input (TC)				T C 4		T C 4		T C 4					
8x thermocouple input (TC)				T C 8		T C 8		T C 8					
12x thermocouple input (TC)				T C 1 2	[1]	T C 1 2	[1]	T C 1 2	[1]				
3x universal input (I, U, RTD, TC)				U N 3		U N 3		U N 3					
5x universal input (I, U, RTD, TC)				U N 5	[1]	U N 5	[1]	U N 5	[1]				
2x time counter input				H M 2		H M 2		H M 2					
4x time counter input				H M 4		H M 4		H M 4					
2x pulse counter input				C P 2		C P 2		C P 2					
4x pulse counter input				C P 4		C P 4		C P 4					
2x flowmeter + 2x I input				F I 2		F I 2		F I 2					
4x flowmeter + 4x I input				F I 4		F I 4		F I 4					
2x ratemeter + 2x I-input				F T 2		F T 2		F T 2					
4x ratemeter + 4x I-input				F T 4		F T 4		F T 4					
2x current output				I O 2		I O 2		I O 2					
4x current output				I O 4		I O 4		I O 4					
6x current output				I O 6	[1]	I O 6	[1]	I O 6	[1]				
8x current output				I O 8	[1]	I O 8	[1]	I O 8	[1]				
8x SPST relay 1A				R 8 1		R 8 1		R 8 1					
12x SPST relay 1A				R 1 2 1	[1]	R 1 2 1	[1]	R 1 2 1	[1]				
4x SPDT relay 5A				R 4 5		R 4 5	[1]	R 4 5	[1]				
6x SPDT relay 5A				R 6 5	[1]	R 6 5	[1]	R 6 5	[1]				
8x SSR output				S 8		S 8		S 8					
16x SSR output				S 1 6		S 1 6		S 1 6					
24x SSR output				S 2 4	[1]	S 2 4	[1]	S 2 4	[1]				
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		consult
sealing frame IP65 + -20…50°C [2]											0 P 0		consult
front USB host port + -20…50°C											0 K 0		consult
customer											9 9 9		consult

[1] not with TFT display 3,5"
[2] only with rear USB host port

Ordering code CIT 700 wall mounted housing

CIT □□□-□□□□-□□□-□□□□□□-□□□-□□□□-□□□

Basic version								
TFT display 3,5"	7 0 0							
Slot P								
Supply 19..50 VDC, 16…35 VAC Output 24 VDC 200 mA Digital input 24 VDC, RS-485 Modbus RTU		P S 3 2						
Supply 85..260 VAC/DC Output 24 VDC 200 mA Digital input 24 VDC, RS-485 Modbus RTU		P S 4 2						
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	consult
customer							9 9 9	consult

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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