Digital Panel Meters
Temperature Meter/Controller
Type LDI35 CF

- **3 1/2-dgt meter or 3-dgt + dummy zero**
- **Temperature measurements from thermoresistance or thermocouple probes and resistance measurements**
- **Measurements in °C or °F**
- **Indicator or controller**
- **All functions selectable by key-pad**
- **Password protection**
- **48 x 96 mm**
- **Degree of protection: IP 50 (IP 65 on request)**

Product Description

3 1/2-dgt or 3-dgt + dummy zero multi-range µP-based indicator or controller for temperature measurements by means of thermocouple or thermoresistance probes. Selectable input range. Degree of protection of IP 50 (IP 65 on request).

Ordering Key

LDI35CFX D0 XX XX

- **Model**
- **Range code**
- **Power supply**
- **Setpoints**
- **Engineering unit**
- **Option**

Type Selection

Range code

See Range Table

Setpoints

0: No setpoint
1: 1 setpoint

Power supply

A: 24 VAC, -15% +10%, 50/60 Hz [1]
B: 48 VAC, -15% +10%, 50/60 Hz [1]
C: 115 VAC, -15% +10%, 50/60 Hz [1]
D: 230 VAC, -15% +10%, 50/60 Hz (standard)
E: 120 VAC, -15% +10%, 50/60 Hz [1]
F: 240 VAC, -15% +10%, 50/60 Hz [1]
3: 9 to 32 VDC with galvanic insulation [1]
6: 40 to 150 VDC with galvanic insulation [1]

Options

XX: None (standard)
IX: Degree of protection IP 65 [1]
AX: Excitation output [1]
XT: Tropicalization [1]

[1] On request

Input Specifications

Accuracy	
RTD	
(@ 25°C ± 5°C, R.H. ≤ 60%)	
Pt100/Pt1000	± 0.3 % f.s., ± 2 dgt
Ni100	± 0.5% f.s., ± 2 dgt
TC	
(@ 25°C ± 5°C, R.H. ≤ 60%)	
From -50°C to the limit of input range	± 0.3% f.s., ± 2 dgt
From -200°C to -5°C of the input range	± 1% f.s., ± 2 dgt
Resistance (@ 25°C ± 5°C)	± 0.3 % f.s., ± 2 dgt
Temperature drift	
RTD	±200 ppm/°C
TC	±200 ppm/°C
Resistance	±200 ppm/°C
Display	7-segment LED, h 14.2 mm, 3 1/2 digits or 3 digits + dummy zero selectable by means of the front key-pad
Sampling rate	2 times/s, dual slope 16 bits A/D converter
Max. and min. indication	
RTD/TC	Depending on range and type of the temperature probe
Resistance	Max. 200 Ω, min. 0 (2000 Ω on request)
Compensation	
RTD/Ω	For 3-wire connections, line resistance up to 10 Ω.
TC	Cold junction, within the temperature range from 0 to +50°C
Key-pad	3 keys: "S" for menu selection "UP" and "DOWN" for value programming/function selection

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Output Specifications

Excitation output	
Voltage	15 VDC non-stabilized/ 40 mA max. (on request)
Insulation	100 V_{rms} output to measuring input 4000 V_{rms} output to AC supply input 500 V_{rms} output to DC supply input
Alarms	
Number of setpoints	0, (1 on request)
Alarm type	Over-range, up alarm, down alarm, down alarm with disabling at power-on, up alarm with latch, down alarm with latch
Setpoint adjustment	0 to 100% of the displayed range
Hysteresis	0 to 100% of the displayed range
On-time delay	0 to 255 s
Off-time delay	0 to 255 s
Relay status	Normally energized/de-energized
Output type	
Contact:	1 x SPDT
Rating:	5A, 250 VAC/VDC 40 W/ 1200 VA, 130.000 cycles
Min. response time	≤ 500 ms, filter excluded, setpoint on- time delay: "0"
Insulation	2000 V_{rms} output to measuring inputs 2000 V_{rms} output to excitation output

Software Functions

Password	Numeric code of max. 3 digits; 2 protection levels of the programming data
1st level:	Password "0", no protection
2nd level:	Password from 1 to 255, all data are protected
Scaling factor	
Operating mode	Electrical scale compression, compression/expansion of the displayed scale (max. 2 without digital filter, > 2 with digital filter)
Electrical scale	Programmable within the whole measuring range
Decimal point position	Programmable within the displaying range
Displayed scale	Programmable within the whole displaying range
Diagnostics	The display flashes when the limits of the displayed range are exceeded, the data are updated up to the maximum read-out
Burn-out up	
TC	Opening of the probe connection, EEE indication
RTD	Opening of the probe connection, EEE indication Probe short-circuit, -EE indication
Filter	
Filter operating range	From 0 to 1999/9990
Filtering coefficient	From 1 to 255
Max. data hold	Automatic storage (RAM only) of the max. value measured after the last reset

Supply Specifications

AC supply	230 VAC, -15% +10%, 50 /60 Hz (standard) 24 VAC, 48 VAC, 115 VAC, 120 VAC, 240 VAC, -15% +10%, 50/60 Hz (on request)
Insulation	4000 V_{rms} supply input to all other inputs/outputs
DC supply	9 to 32 VDC, G.I. max. inrush current: ≤ 1.2 A/200 ms 40 to 150 VDC, G.I., max. inrush current: ≤ 0.6 A/200 ms
Insulation	500 V_{rms} supply input to all other inputs/outputs
Power consumption	6.5 VA

General Specifications

Operating temperature	0° to 50°C (32° to 122°F) (R.H. < 90% non-condensing)
Storage temperature	-10° to 60°C (14° to 140°F) (R.H. < 90% non-condensing)
Insulation reference voltage	300 V_{rms} to ground
Dielectric strength	4000 V_{rms} for 1 m inute
Noise rejection	
NMRR	40 dB, 40 to 60 Hz
CMRR	100 dB, 40 to 60 Hz
EMC	IEC 60801-2, IEC 60801-3, IEC 60801-4 (level 3), EN 50 081-1, EN 50 082-1
Safety standards	EN 61010-1, IEC 61010-1, VDE 0411
Connector	Screw-type
Housing	
Dimensions	1/8 DIN, 48 x 96 x 83 mm
Material	ABS, self-extinguishing: UL 94 V-0
Degree of protection	IP 50 (IP 65 on request)
Weight	Approx 340 g
Approval	CE

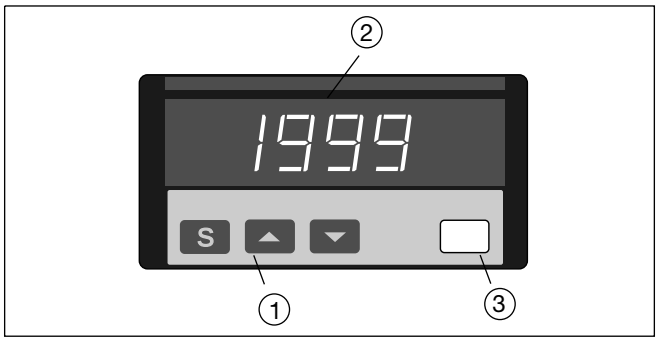
Specifications are subject to change without notice

Range Table

Range code	Input	Probe	Ranges (ºC) (3 1/2 dgt)	Ranges (ºF) (3 1/2 dgt)	Other ranges 1)
CFX	RTD	Pt100	-200° to 850°C	-328° to 1562°F	-199.9° to +199.9°C
CFX	RTD	Ni100	-60° to 180°C	-76° to 356°F	-60.0° to +180.0°C
CFP	RTD	Pt1000	-200° to 850°C	-328° to 1562°F	-199.9° to +199.9°C
CFX/CFP	TC	J	-50° to 760°C	-58° to 1400°F	-50.0° to +760.0°C
CFX/CFP	TC	L	-50° to 760°C	-58° to 1400°F	-50.0° to +760.0°C
CFX/CFP	TC	K	-200° to 1260°C	-328° to 1999°F	-199.9° to +199.9°C
CFX/CFP	TC	S	350° to 1750°C	-	-
CFX/CFP	TC	T	-200° to 400°C	-328° to 752°F	-199.9° to +199.9°C
CFX	Ω	200.0 Ω	0 to 199.9 Ω	0° to 199.9 Ω	0° to 19.99 Ω
CFP	Ω	2000 Ω	0 to 1999 Ω	0 to 1999 Ω	0 to 199.9 Ω

1) Examples of other displayed ranges available by means of the scaling capability

Front Panel Description



1. **Key-pad**
   Set-up and programming procedures are easily controlled by the 3 pushbuttons.

   "S"
   - Selection key to select programming function (instrument configuration) or measurement and alarm detection.

   " ▲ " and " ▼ "
   - Up and down keys for increasing or decreasing programming values.

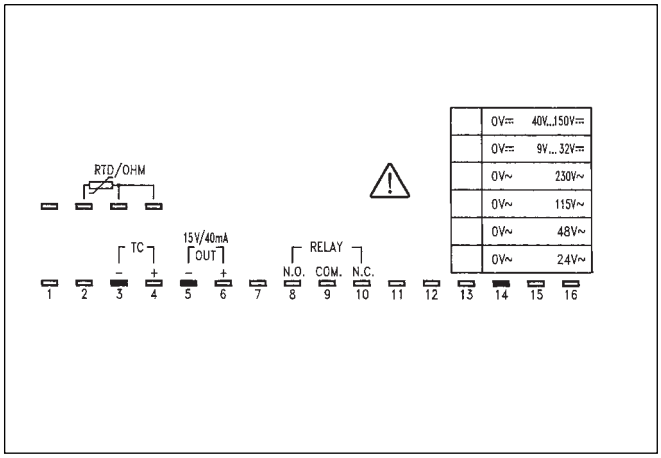
2. **Display**
   3 1/2-dgt or 3-dgt + dummy zero (maximum read-out 1999/9990).

   Alphanumeric indication by means of 7-segment display for:
   - Displaying of the measured value, over-range, burn-out and programming indications.
   - Indication of programming parameters.

3. **Engineering unit**
   Screen for interchangeable unit label.The symbols in the shaded areas are those available on the set of engineering unit labels supplied with the LDI35 (engineering unit label to be inserted by customer).

	W = 08	MΩ = 16	% = 24	mm HG = 32	cm = 40
mV = 01	kW = 09	Hz = 17	mbar = 25	l/min = 33	m = 41
V = 02	MW = 10	kHz = 18	bar = 26	l/h = 34	kg = 42
kV = 03	var = 11	RPM = 19	psi = 27	kg/min = 35	ppm = 43
µA = 04	kvar = 12	m/s = 20	ata = 28	ton/h = 36	kA = 44
mA = 05	Mvar = 13	m/min = 21	ate = 29	m^3/min = 37	cos ϕ = 45
A = 06	Ω = 14	°C = 22	kg/cm^2 = 30	m^3/h = 38	m^3 = 46
mW = 07	kΩ = 15	°F = 23	mm H_2O = 31	mm = 39	µs = 47

Terminal Board



Dimensions