

# Panel Meters and Controllers

## Temperature Meter/Controller

### Type LDI35 CF



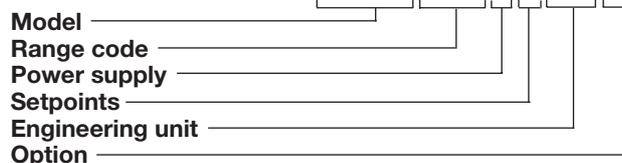
- 3 1/2-dgt meter or 3-dgt + dummy zero
- Temperature measurements from thermoresistance or thermocouple probes and resistance measurements
- Measurements in °C or °F
- Indicator or controller
- All functions selectable by key-pad
- Password protection
- 48 x 96 mm
- Degree of protection: IP 50 (IP 65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

### Product Description

3 1/2-dgt or 3-dgt + dummy zero multi-range  $\mu$ P-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**



### Type Selection

Range code	Power supply	Options
See Range Table	<b>A:</b> 24 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	<b>XX:</b> None (standard)
<b>Setpoints</b>	<b>B:</b> 48 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	<b>IX:</b> Degree of protection IP 65
<b>0:</b> No setpoint	<b>C:</b> 115 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	<b>AX:</b> Excitation output
<b>1:</b> 1 setpoint	<b>D:</b> 230 VAC, -15% +10%, 50/60 Hz (standard)	<b>XT:</b> Tropicalization
	<b>E:</b> 120 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	<sup>1)</sup> Power supply on request
	<b>F:</b> 240 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	
	<b>3:</b> 9 to 32 VDC with galvanic insulation <sup>1)</sup>	
	<b>6:</b> 40 to 150 VDC with galvanic insulation <sup>1)</sup>	

### Input Specifications

<b>Accuracy</b> RTD (@ 25°C ± 5°C, R.H. ≤ 60%) Pt100/Pt1000 Ni100 TC (@ 25°C ± 5°C, R.H. ≤ 60%) From -5°C to the limit of input range From -200°C to -50°C of the input range Resistance (@ 25°C ± 5°C)	± 0.3 % f.s., ± 2 dgt ± 0.5% f.s., ± 2 dgt  ± 0.3% f.s., ± 2 dgt  ± 1% f.s., ± 2 dgt ± 0.3 % f.s., ± 2 dgt	<b>Sampling rate</b> 2 times/s, dual slope 16 bits A/D converter
<b>Temperature drift</b> RTD TC Resistance	±200 ppm/°C ±200 ppm/°C ±200 ppm/°C	<b>Max. and min. indication</b> RTD/TC  Resistance  <b>Compensation</b> RTD/Ω  TC
<b>Display</b>	7-segment LED, h 14.2 mm, 3 1/2 digits or 3 digits + dummy zero selectable by means of the front key-pad	<b>Key-pad</b> 3 keys: “S” for menu selection “UP” and “DOWN” for value programming/function selection

## Output Specifications

<b>Excitation output</b>	
Voltage	15 VDC non-stabilized/ 40 mA max. (on request)
Insulation	100 V <sub>rms</sub> output to measuring input 4000 V <sub>rms</sub> output to AC supply input 500 V <sub>rms</sub> output to DC supply input
<b>Alarms</b>	
Number of setpoints	0, (1 on request)
Alarm type	Over-range, up alarm, down alarm, down alarm with dis- abling 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-ener- gized
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, set- point on- time delay: "0"
Insulation	2000 V <sub>rms</sub> output to measuring inputs 2000 V <sub>rms</sub> output to excitation output

## Supply Specifications

<b>AC supply</b>	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 <sub>rms</sub> supply input to all other inputs/outputs
<b>DC supply</b>	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 <sub>rms</sub> supply input to all other inputs/outputs
<b>Power consumption</b>	6.5 VA

## Software Functions

<b>Password</b>	Numeric code of max. 3 di- gits; 2 protection levels of the programming data Password "0", no protection Password from 1 to 255, all data are protected
1st level:	
2nd level:	
<b>Scaling factor</b>	
Operating mode	Electrical scale compression, compression/expansion of the displayed scale (max. 2 with- out 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
<b>Diagnostics</b>	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 connec- tion, EEE indication
RTD	Opening of the probe connec- tion, EEE indication Probe short-circuit, -EE indication
<b>Filter</b>	
Filter operating range	From 0 to 1999/9990
Filtering coefficient	From 1 to 255
<b>Max. data hold</b>	Automatic storage (RAM only) of the max. value measured after the last reset

## General Specifications

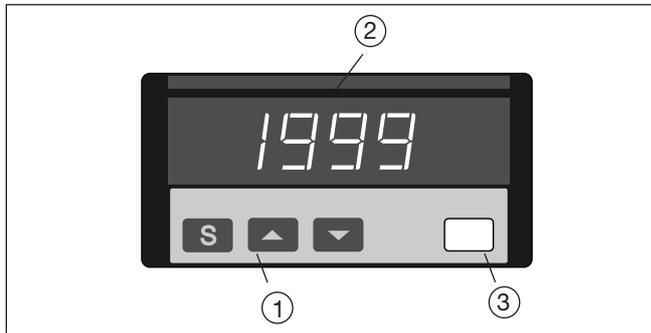
<b>Operating temperature</b>	0° to 50°C (32° to 122°F) (R.H. < 90% non-condensing)
<b>Storage temperature</b>	-10° to 60°C (14° to 140°F) (R.H. < 90% non-condensing)
<b>Insulation reference voltage</b>	300 V <sub>rms</sub> to ground
<b>Dielectric strength</b>	4000 V <sub>rms</sub> for 1 m inute
<b>Noise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

## Range Table

Range code	Input	Probe	Ranges (°C) (3 1/2 dgt)	Ranges (°F) (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:

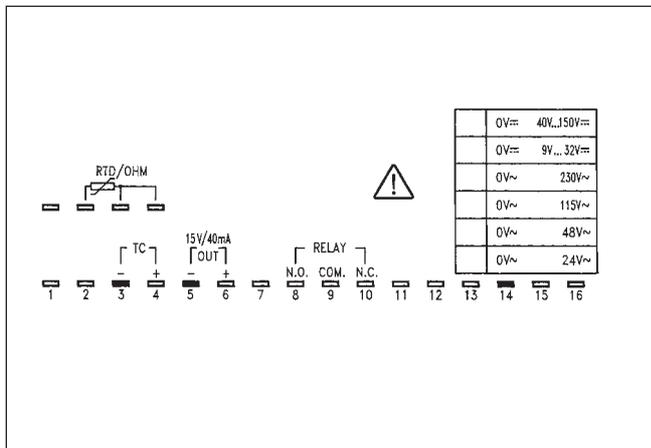
- Displaying of the measured value, over-range, burn-out and programming indications.
- Indication of programming parameters.

### 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	atm = 29	m <sup>3</sup> /min = 37	cos φ = 45
A = 06	Ω = 14	°C = 22	kg/cm <sup>2</sup> = 30	m <sup>3</sup> /h = 38	m <sup>3</sup> = 46
mW = 07	kΩ = 15	°F = 23	mm H <sub>2</sub> O = 31	mm = 39	μs = 47

## Terminal Board



## Dimensions

