DESCRIPTION

Digital panel controller with three output relays. The controller is microprocessor based and fully programmable from the keypad.

Controller function:
• P, PI, PD, PID regulator with pulse width controlled output relay.
• Heating/cooling controller plus alarm relay.
• 3 individual on/off controllers.

The panel controller operates with the following input signals:
• AC/DC voltage.
• AC/DC current.
• Temperature with Pt-100/500/1000, Ni-100, thermistors and thermocouples. The temperature measurement is fully linearized by the built-in microprocessor.
• Standard process signals.
The actual input signal type and measuring range must be specified when the panel controller is ordered.

Programmable facilities:
• Controller function (P, PI, PD, PID or on/off).
• Auto tune.
• 1, 2 or 3 setpoints.
• Setpoint hysteresis (below or above setpoint).
• Alarm point (symmetrical, below or above setpoint).
• Alarm point hysteresis.
• Input delay (0-10.0 sec.)
• Temperature measuring unit (°C or °F).
• Scale minimum/maximum.
• Decimal point position.
• Correction for temperature sensor tolerances.
• Display update time (0.2-10.0 sec.).
• Output relay mode selection with 4 different output modes.
• Delay, output relay 1,2 and 3 individually (0-50.0 sec.).
The settings are stored in an EEPROM and accidental change of preprogrammed settings is avoided through the keypad lock facility.

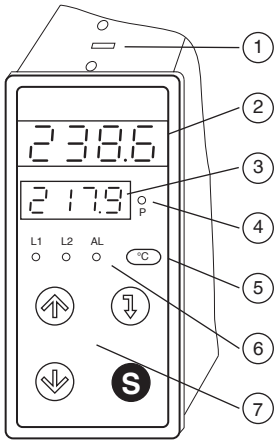
3 output relays with LED indication of energized relay.

Compact design featuring splash proof front panel with integrated displays, LED indicators and 4 button keypad for programming and adjustment.

96 x 48 mm DIN housing with plug-in screw terminals at the rear.

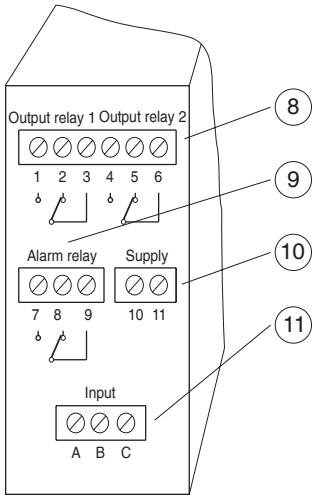
Versions for AC/DC supply voltage with galvanic isolation between input signal and power supply.

FRONT PANEL



1. Keypad lock switch. 2. LED display - actual input. 3. LED display - setpoint. 4. Programming indicator. 5. Unit label. 6. LED indications for energized outputs. 7. 4-button keypad for programming and programming information.

REAR PANEL/CONNECTIONS



8. Output relay 1 & 2 connector. 9. Alarm relay connector. 10. Supply voltage connector. 11. Input signal connector.

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VERSION/ORDERING CODES

Type: UDC-35 230 P1

Supply voltage:

24V AC	024
48V AC	048
110/120V AC	115
220/240V AC	230
24V DC	G24

Input:

Current:

DC:	DC [3]
0-99.99mA.	DC1
0-200.0mA.	DC2
0-10.00A./0-100.0A	DC3 [1]
AC:	AC [3]
0-200.0mA.	AC2
0-5.000A.	AC3 [4]

Voltage:

DC:	DV [3]
0-99.99V.	DV2
0-500.0V.	DV3
AC:	AV [3]
0-99.99V.	AV2
0-500.0V.	AV3

RTDs:

Pt-100:	P [3]
-19.95-99.95°C.	NP1
-50.0-300.0°C.	NP2
-50-850°C.	P3
Pt-500:	P [3]
-19.95-99.95 °C.	P51
-50.0-300.0 °C.	P52
-50-850 °C.	P53
Pt-1000:	P [3]
-19.95-99.95 °C.	P11
-50.0-300.0 °C.	P12
-50 -850 °C.	P13
Ni-100:	N [3]
-19.95-99.95°C.	NP1
-50.0-300.0°C.	NP2
Thermistor (KTY):	T [3]
-30.0-100.0°C.	T1

Thermocouples:

Fe-CuNi:	J [3]
-50-1200°C.	J1
NiCr-Ni:	K [3]
-50-1350°C.	K1
PtRh-Pt 10%:	S [3]
-50-1750°C.	S1
PtRh-Pt 13%:	R [3]
-50-1750°C.	R1

Standard process signals U: [3]
0-20mA DC /0-10V DC U1

TECHNICAL DATA

Temperature drift: Max. 0.01% per °C.

Hysteresis: Adjustable inside the defined scale, above or below setpoint.

Displays: 4 digit LED-types (-1999 to 9999).
Digit height: 10 mm (upper), red, 7 mm (lower), green.
Update time: Programmable 0.2-10.0 sec.

Scale: Versions for voltage, current and standard process signals have fully programmable scale min. and max. (-1999 to 9999).

Decimal point: Programmable

Indicators:
1/2 (green/yellow): Output relay 1, 2 energized.
A (red): Alarm relay (output relay 3) energized.
- (red): Programming of parameters.

Output relays 1 & 2: SPDT.
Load (cosφ= 1): Max. 380V AC/2A, 240V AC/5A, 30V DC 5A.
Mechanical lifetime: Min. 10 x 10^6 operations.
Electrical lifetime: Min. 100,000 operations at max.load.
Delay: Individually programmable 0-50.0sec.

Alarm/output relay A/3: SPDT.
Load: Max. 30V/0.5A.
Mechanical lifetime: Min. 10 x 10^6 operations.
Electrical lifetime: Min. 100,000 operations at max. load.
Delay: Programmable 0-50.0sec.

Terminals: 1.5 mm^2 plug-in screw terminals.

Supply voltage:

24V AC	(19.2-28.8V),
48V AC	(38.4-57.6V),
110/120V AC	(88-132V),
220/240V AC	(176-264V).
24V DC	(19.2-28.8V)

Mains frequency: 45-66Hz.

Consumption: 3VA.

Protection:
Front: IP54 (IP65 on request).
Rear: IP20.

Ambient temperature: -10-55°C.

Isolation:
AC versions: 4kV AC according to IEC class II.
G- versions: 500V.

Dimensions: According to DIN 43700.
Front: 96 x 48 mm.
Cut-out: 91 x 43 mm.
Depth: 88 mm + frame 7 mm + terminals 10 mm.
Housing: Self-extinguishing ABS.
Weight: 300-415 g.

NOTES/REMARKS

1) With external shunt type AAS-010 (0-10.0A DC) or type AAS-100 (0-100A DC).
3) Special range. Please specify input.
4) Extended measuring range can be obtained by using external current transformer, see accessories page 133.

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AC/DC VOLTAGE

DESCRIPTION

Input for direct measurement of AC or DC voltages up to 500V. The AC input is equipped with a true RMS rectifier for accurate AC measurement.
The facilities of the UDC-35 make it suitable for advanced voltage monitoring and control.

Typical applications:
Advanced control, monitoring and alarm applications.
Generator control systems.
Battery charge control.
Battery monitoring and control in power back-up systems.

MEASURING RANGES

AC	DC
0-99.99V	0-99.99V
0-500.0V	0-500.0V

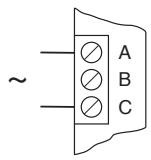
Other ranges are available on request.

Input impedance:
AC: 1kOhm/V.
DC: 1MOhm (>10V).

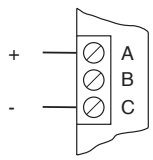
Measuring accuracy:
AC: 0.3% of full scale ± 1 digit.
DC: 0.1% of full scale ± 1 digit.

WIRING DIAGRAMS

AC



DC



AC/DC CURRENT

DESCRIPTION

Input for direct measurement of AC or DC current up to 200mA DCor 5A AC The measuring range is easily extended by adapting an external shunt or current transformer.
The AC input is equipped with a true RMS rectifier for accurate AC measurement.
The facilities of the UDC-35 make it suitable for advanced current monitoring and control.

Typical applications:
Advanced control, monitoring and alarm applications.
Monitoring/protection of motors.
Battery charge control.
Overload protection.

MEASURING RANGES

AC		DC	
0-200.0mA		0-99.99mA	
0-5.000A		0-200.0mA	
0-200A 0-500A	with external current transformer (1A sec.)	0-10.00A 0-100.0A	with external shunt (60mV voltage drop)

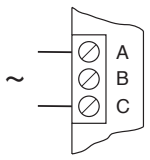
Other ranges are available on request.

Input impedance: 1V / I max
60mV / I max with shunt.

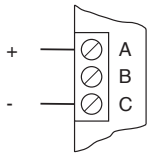
Measuring accuracy:
AC: 0.3% of full scale ± 1 digit.
DC: 0.1% of full scale ± 1 digit.

WIRING DIAGRAMS

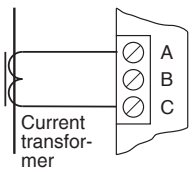
AC



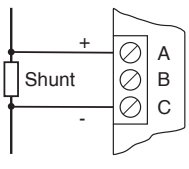
DC



AC with current transformer



DC with shunt



TEMPERATURE

DESCRIPTION

Input for all types of temperature sensors, both thermocouples and resistor types.
High measuring accuracy is obtained over a wide temperature range by the microprocessor's compensation for nonlinearity in the sensor signal.
The extensive programming facilities make the UDC-35 suitable for all temperature control and monitoring applications.

Typical applications:
2 point temperature regulator with alarm.
Advanced temperature control, monitoring and alarm applications.
Wide range temperature measurement with high accuracy.
Temperature with separate control and alarm outputs.

MEASURING RANGES

RTDs/Thermistors		
Pt-100/500/1000	Ni-100	Thermistor (KTY)
-19.95-99.95°C - 50.0-300.0°C - 50-850°C	-19.95-99.95°C -50.0-300.0°C	-30.0-100.0°C

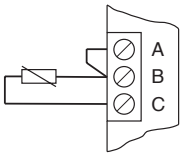
Thermocouples			
Fe-CuNi	NiCr-Ni	PtRh-Pt 10%	PtRh-Pt 13%
- 50-1200°C	-50-1350°C	-50 -1750°C	-50-1750°C

Measuring accuracy: 0.1% of full scale ±1 digit.

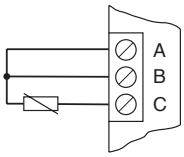
Resolution: Min. 0.5°C.

WIRING DIAGRAMS

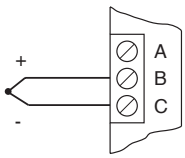
RTD/Thermistor (2-wire)



RTD/Thermistor (3-wire)



Thermocouple



STANDARD PROCESS SIGNAL

DESCRIPTION

The programming facilities of the UDC-35 make it ideal as monitoring or control device for standard process signals, e.g. 4-20mA.
Any output from a transmitter can be scaled to engineering units by using the scaling facilities of the UDC-35.
The flexibility of the UDC-35 enables it to perform any type of control or monitoring related to the process signal.

Typical applications:
General process instrumentation and control.

MEASURING RANGES

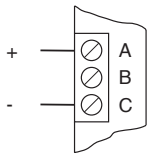
DC
0-20mA/0-10V. Other standard process signals within these limits can be used as the scale of the controller is fully programmable.

Measuring accuracy: 0.1% of full scale ± 1 digit.

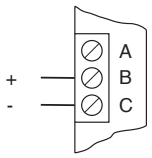
Input impedance:
Voltage: 1MOhm.
Current: 50Ohm.

WIRING DIAGRAMS

Voltage



Current



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