

SERIES: DCY-2050, DCY-2051, DCY-2060



- Two universal standard inputs for RTD, thermocouples, 0-55mV, 4-20mA, 1-5Vdc and 0-10Vdc. Available specific models for two frequency input signals up to 30kHz, from 300mVpp to 30Vpp.
- Up to two analog output modules of 4-20mA, 1-5Vdc and 0-10Vdc, isolated from inputs and power supply.
- Reduced dimensions, large control capacity performing the functions:
 - Auto-tune.
 - On-Off, P-PI-PD-PID and Cascade Control.
 - Heating-cooling, time-proportioning.
 - Remote set-point.
 - Programmable set-point up to 10 segments.
 - Auto-manual station.
- Up to three SPDT and SPST relay alarm modules.
- RS-232 or RS-422/485 communication.
- Power supply from 90 to 240Vac, 50/60Hz or dc levels.
- High accuracy.
- Linearization of RTD, thermocouple and also square root extraction.
- Configuration stored in non-volatile memory.

The design of DCY-2050, 2051 and 2060 Controllers is characterized by high reliability and precision, electrical noise and EMI immunity, besides well elaborated technical manual. These features make them ideal for industrial applications in Instrumentation and Process Control.

They have an extruded aluminum case and use the best origin components and parts, proven by rigorous tests and specified according to the strictest worldwide norms. They offer two standard universal inputs that can be 4-20mA, 1-5Vdc, 0-10Vdc, 0-55mVdc, thermocouples and RTD; also standard is the 24Vdc power supply for two-wire transmitter. Two frequency inputs are available, in specific instrument, for signals up to 30kHz, from 300mVpp to 30Vpp and 70Vdc max. DIN 19234 compliance for intrinsically safe NAMUR sensors.

Power supply is universal and can be connected from 90 to 240Vac or dc levels when specified. The controllers were projected on modularity and flexibility concepts. The user can turn a single loop controller into a dual loop one, having a control output variety as relay, open collector, time proportioning, voltage 1-5Vdc and 0-10Vdc, current 4-20mA and dual (Heating-Cooling). They offer up to three alarm cards and a wide variety of controls: On-Off, PID and Cascade. The DCY controllers have two auto-tune algorithms: start-up or demand (controlled variable is far or near the set-point). Also they have all standard control features: bumpless auto-manual transference, output saturation, remote set-point, programmable set-point up to 10 segments, reset wind-up prevention.

Order Code: DCY- [] - [] - [] - [] - [] - [] - []

Model

Process Dual Controller
 2050: Universal standard inputs,
 1/8 DIN vertical orientation
 2051: Universal standard inputs,
 1/8 DIN horizontal orientation
 2060: Universal standard inputs,
 1/4 DIN higher visibility
 2050-F: Frequency inputs,
 1/8 DIN vertical orientation
 2051-F: Frequency inputs,
 1/8 DIN horizontal orientation
 2060-F: Frequency inputs,
 1/4 DIN higher visibility

Output 1 (Only for Control)

0 - None
 1 - 4-20mA
 2 - 1-5Vdc
 3 - 0-10Vdc
 4 - SPST Relay
 5 - Open Collector Voltage

Output 2 (Control or Alarm)

Same code of Output 1

Output 3 (Alarm or Cooling Control 1)

0 - None
 1 - SPDT Relay
 2 - Open Collector Voltage

Output 4 (Alarm or Cooling Control 2)

Same code of Output 3

Power Supply

1 - 90 to 240Vac or 130 to 340Vdc
 2 - 24Vdc
 3 - 12Vdc
 4 - Others, under consult

Communication

0 - None
 1 - RS-232
 2 - RS-485
 3 - RS-422

Case Protection Grade

0 - General usage, protected place
 1 - Front aspersion-proof
 2 - Weather-proof

Specifications

Inputs

Universal inputs models for thermocouple (J, K, T, E, R or S under ITS-90), 0-55mV, RTD under DIN 43760, 4-20mA, 1-5Vdc and 0-10Vdc selected by user. Input impedance of 250W for mA, 10 MW for 5Vdc and 2 MW above 5Vdc. Frequency inputs models for signals up to 30kHz, from 300mVpp to 30Vpp and 70Vdc max. DIN 19234 compliance for intrinsically safe NAMUR sensors.

Note: Universal or frequency inputs require different instruments. See order code.

Control Function:

On-Off Control
 PID Control
 PID Control with Auto-Tune
 Heating-Cooling Control
 Cascade Control
 Programmable set-point up to 10 segments
 Remote set-point

Control Outputs

4-20mA (750W maximum load), 1-5Vdc or 0-10Vdc analogic output. Up to two optional modules galvanically isolated to 300Vac from power supply and inputs.
 SPST relays rated for 3A at 220Vac.
 Logic signal, open collector transistor, 40mA/24Vdc maximum with isolation.

Alarm Outputs

SPST and SPDT relays rated for 3A at 220Vac.
 Logic signal, open collector transistor, 40mA/24Vdc maximum with isolation.

Serial Communication

RS-232 or RS-422/485 with 50Vdc isolation.

Indication

DCY-2050: Two 9mm red leds displays with four digits.
 DCY-2051: 14mm and 9mm displays with four digits.
 DCY-2060: Two 14mm red leds displays with four digits.
 Displays can be configured together with the decimal point.

Configuration

By front panel push-buttons, serial communication and internal jumpers.

Sampling Rate

140 ms standard. Half second display update rate.

Accuracy

± 0.1% of full scale for TC, RTD, mA, mV and Vdc input.
 ± 0.5% of full scale for analogic output.
 ± the display resolution for frequency input.

Linearization

± 0.1% of full scale for RTD and - 0.2% of full scale for TC.

Square Root Extration

± 0.5% of reading, for input above 10% of span. Cut-Off programmable from 0 to 5%.

Digital Filters

First order digital filters applied to the inputs with time constant from 0.0 to 25.0 seconds.

Cold Junction Compensation

± 2.0°C at range from 0 to 50°C ambient temperature.

2-Wire Transmitter Power Supply

24Vdc/50mA maximum, isolated from output with short circuit protection.

Span Temperature Coefficient

± 0.005% of input span for °C, at 25°C ambient temperature.

Power Supply

90 to 240Vac 50/60Hz, 24Vdc, 12Vdc or other values. 10W nominal. See order code.

Operating Ambient

0 to 50°C temperature and 90% maximum relative humidity.

Dimensions

DCY-2050: 1/8 DIN (96x48x170mm) HxWxD, (92x45mm) HxW panel cutout.
 DCY-2051: 1/8 DIN (48x96x170mm) HxWxD, (45x92mm) HxW panel cutout.
 DCY-2060: 1/4 DIN (96x96x170mm) HxWxD, (92x92mm) HxW panel cutout.

Weight

0.5 kg nominal.

Warranty

One-year warranty.



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