MODEL: DIR33

Compressor, Evaporator Fan & Defrost Control

➤ **3-DIGIT INDICATOR**

➤ **FULLY PROGRAMMABLE**

➤ **2 PTC INPUTS & 3 RELAY OUTPUTS**

➤ **REAL TIME CLOCK INCLUDED**

➤ **BUZZER & LED ALARM INDICATION**

➤ **PANEL SEALED TO IP65 (WATERPROOF)**

➤ **EXTERNAL TRANSFORMER & RS485 COMMUNICATION (OPTION)**

INTRODUCTION

Indumart DIR33 Refrigeration Controller is a microprocessor-based, accurate and cost effective solution for controlling refrigeration systems. The controller is programmable, accepts two PTC inputs from the temperature chamber (Tc) and the evaporator (Te), and a digital input from the status of the chamber door. Three SPST relays are available for controlling the compressor, defrost and evaporator fan.

The three LEDs light when the compressor and fan are turned-on, and during defrosting. They blink when the compressor is in start or stop delay modes, and when a defrost was initiated but did not start due to lack of favourable conditions.

Sound indication is crucial when an alarm limit has been crossed, sensor break has occurred or other faults have caused the refrigeration system to cease operating appropriately. In many cases, this feature of DIR33 controllers can prevent substantial damages.

The front panel of the DIR33 is water and dust proof and contains four buttons for configuration and a 3-digit display to indicate the values of the chamber or the evaporator temperature.

An integral digital clock allows the defrosting cycle to be programmed in real time. Defrosting can be initiated automatically by the use of this clock , or performed manually when the operator shifts to manual settings.

Configuration of the DIR33 Series controller can be performed via its front panel keys. The measurement parameters, compressor parameters, fan parameters, defrosting parameters and the control parameters can be programmed into the controller very easily.

Supply voltage to the DIR33 controller should be 12 VDC or 12 VAC. If none of the above supplies is available, the optional external transformer can be ordered for supplying the controller with 110 or 220 VAC. The optional RS485 serial communication

SPECIFICATIONS

Inputs

Freezing Chamber Temp.	PTC Sensor (1kΩ @ 25°C)
Evaporator Sensor Temp.	PTC Sensor (1kΩ @ 25°C)
Measuring Range	-50 to 100°C
Measurement Offset	Adjustable
Digital Input Type	Door Control Contact

Outputs

Number of Relays	3 SPST, for compressor, fan and evaporator
Relays	10A / 250 VAC with normally-open contact
Serial Interface (option)	RS485; Isolated

Accuracy

Measurement Error	Less than 0.25% of span
Display Resolution	±1°C
Temperature Drift	0.01% of span / 1°C

Power Supply

Supply Voltage	12 VDC/AC ± 15% 110 or 220 VAC (option)
Power Consumption	3 VA maximum

General

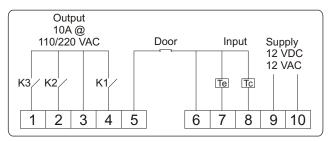|	
Display	3-digit LED, 14mm high
Visual Alarm Indication	3 LEDs for three outputs
Sound Indication	Continuous & discreet sounds
Front Panel Sealing	IP65
Operating Condition	-10...+65°C; 10 to 85% RH
Case Material	ABS plastic
Mounting	In panel; 71x29 mm cut-out
Dimensions	72x36x60 mm (WxHxD)
Weight	100 grams (0.2 lb) max.

WIRING DIAGRAM

CONFIGURATION PARAMETERS

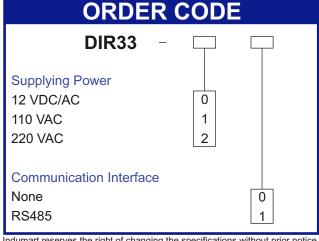Parameters which must be set are divided in to five groups:

Measurement Parameters: Lower and upper setpoints; Temperature read-out offset to eliminate errors due to the probe's cable.

Compressor Parameters: Compressor setpoint; Hysteresis; Lower and higher alarm limits; Alarm hysteresis; Alarm power-on delay; Alarm at-open-door delay; Alarm after-defrost delay; Compressor at failure condition, selection of the most appropriate time-delay for the compressor and its length.

Fan Parameters: Setting the temperature at which the fan should be turn-off; Switching differential; Time-delay of the fan after defrost; Whether the fan should turn-off when the compressor is off, or during defrost, or at open door.

Defrosting Parameters: Defrost temperature setpoint, Defrost real time; Defrost interval and duration, postponement of the scheduled cycle; Drainage time; Delay times; Display lock during defrost; Electric or hot gas defrost; Selection of when defrost should start, dependent on the clock, compressor accumulative time, compressor stop, etc.

Control Parameter: The switch-on relay delay time.

ORDER CODE

DIR33 – ☐ ☐

Supplying Power

12 VDC/AC	0
110 VAC	1
220 VAC	2

Communication Interface

None	0
RS485	1

Indumart reserves the right of changing the specifications without prior notice.

Also Available: Microprocessor-based Universal Input Indicator with 2 Relay Outputs