CONTROL DEVICES

ISO 9001:2000

APEL®

Do you need to ensure continuous ventilation but you don't want to have high power costs, service costs or labour cost for non-stop operation?

Are you considering of a low-cost control device of ventilation with minimal maintenance demands and easy installation?

If you say YES, the APEL® company offers you OV01 CONTROL DEVICE FOR VENTILATION.

Let us show you, that this product is indispensable for you at the time of continuously increasing prices of electric energy and labour costs.

ADVANTAGES

- It ensures reliably ventilation of the monitored area
- It is economic – it leads to big savings of electric energy on the controlled ventilation unit
- It extends strongly the working life of the ventilation unit
- Failure-free operation
- It is installed easily and it is not necessary to do big changes into the existing electrical system
- It has favourable price

The control device for ventilation, which our company has developed and tested in demanding conditions of real operation, is thanks to its technical features the best helper for you in term of cost reduction and ventilation unit reliability increase.

High quality is also guaranteed by the certification of the quality system according to ISO 9001:2000 standards.

DESIGN

Detail of the control device (front face 96 x 96 mm)

Case with inbuilt control device

The control device controls its outputs according to the by the temperature- sensitive element measured temperature and to the size of the temperature threshold values (limits) that are stored in the memory of the device. The control runs in the following way – the actual temperature is compared with the set limits and evaluated considering hysteresis.

The control devices outputs control for example relay coils or contactor coils, which operate work of the ventilators. The ventilators ensure smooth air renewal in a given area (it is suitable for example in halls for poultry-raising etc.).

The control device signalises exceeding of the maximal temperature and monitors the failure of the power circuits' phase. Another function is the automatic check of the temperature-sensitive element. It means that the control device finds and signals the failure, if disconnection or failure of the temperature-sensitive element arises in the running. All failures are signalled by flickering of the signal device „FAILURE" and by an acoustic signal. It is possible to turn off the acoustic signal by button „ACCOUSTIC SIGNAL TURN OFF". The type of the failure is displayed on the LCD display. Measured temperature and the status of "LIMITS" are displayed on the LCD display at rest. In case of a change that is evoked by any failure or by setting the manual operating relevant information is displayed and the outputs of contactors operating are activated. The outputs of the control device revert to their original condition after elimination of the failure or transition back to the automatic operating.

The control device is controlled by IR remote control – similarly as by the products of consumer electronics. By this the need of light current contacts that works in aggressive conditions is removed. The advantage of this system is a comfortable setting that is supported by display on the control device. Above all it makes impossible to change any setting parameters by trespassers.

The setting of the control device parameters is provided in the following way – by means of IR remote control we activate the menu “SETTING” and change parameters by means of selection of various schemes.
It is also possible to activate an inner test of the control device from the menu. This test checks the LCD display, the acoustic signal, the failure signal device and the outputs for contactors operating. Another mode that the control device includes is "SYSTEM RESTART ". There is not provided any control intervention and the control device outputs are in their last state during the setting mode.

A modern electronic element – a digital thermometric temperature sensor – is used as the temperature-sensitive element. The transmission quantity of the measured temperature is a digital word transmitted by I2C line. An offset of the influence of the surrounding temperature to the wiring is not necessary thanks to this type of transmission. The digital thermometric temperature sensor provides measurement and transmission of the temperature at intervals of 1 sec with accuracy 0,1 C.

The control circuit of the control device is an eight-bit microprocessor that cooperates with the digital thermometric temperature sensor, the LCD display, the IR sensor and the EEPROM memory, in which set parameters of the control device are saved.

As an option we can deliver also a microprocessor that is programmed in the way so that there takes place a cyclic permutation of the ventilators sections in the course of control of ventilators running. It improves the function of the air-conditioning and loads the ventilators equally.

The OV01 control devices enable a connection with the control information centre by RS 485 line. It is possible to monitor the condition of all OV01 control devices and monitor temperatures and the basis status of ventilators in the individual halls in this centre.

TECHNICAL FEATURES OF THE OV01 CONTROL DEVICES

Power supply	10 ... 30V ss
Maximal take-off	100 mA at 24V
Current input	max. 2,4 W
Inputs 24V	mode AUT
	phase outage
	accoustic signal shut down
Outputs 24V	accoustic signal
	failure
	5x coil of the contactor
Maxima outputs loud	500 mA
Connection	screw terminals, max. leasing wire cross section 1,5 mm^2
Temperature sensor input	5 lines, voltage level 5V
Measured temperatures range	-55 _ C ... +99,9 _C
Measurement accuracy	0,1 _ C
Measurement speed	1 s
Maximal distance of the sensor	100 m
Temperature range of the control	0 ... +99,9 _ C
Number of limits	5
Range of the limits setting	0 ... +99,9 _ C
Range of the hysteresis setting	0 ... +9,9 _ C
Setting of the maximal temperature	0 ... +99,9 _ C
Display writer	illuminated LCD display 2 x 16 characters
Range of the operating temperatures	0 ...+70 _ C
Dimensions max. (w, h, d)	95 x 95 x 115 mm
Mounting hole	92 x 92 mm
Weight	0,150 kg
Control of the control device	infrared (IR) remote control
Remote control radius	3 m in directness
Type of batteries in remote control	4 pcs LR03 (1,5V)

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