



IMT M - 05

SYSTEM FOR ON-LINE MONITORING OF TRANSFORMERS BY USING IMT M-05

The equipment is able to monitor up to 16 transformers, allowing measuring the oil temperature within the range 0 - 150°C, with a 3 digits local display.

The equipment has in its structure 4 control relays (5 A, 250 V AC), which could be switched-on at thresholds presettable by the beneficiary. The relay disconnection could be done at a temperature which is 4°C ($\Delta TH=4^{\circ}C$) lower than the presettable temperature, fact confirmed by the LED from the display.

IMT M-05 has a second display showing the maximum temperature reached in operation, which remains unchanged to the subsequent variations of temperature.

IMT M-05 supervises the oil level in transformer tank, by using a 0 - 1500 Ω resistive transducer, the level being displayed in percentage. At certain presettable threshold, a control-warning relay could be switched on.

IMT M-05 measures the gas volume by means of a Buchholz relay which indicates the gas volume in percentage. The transducer gives 4 -20 mA unified signal. At certain presettable level, a control-warning relay could be switched on.

All the parameters above mentioned could be remotely sent by means of a digital device, through three wires; these parameters could be monitored by a central PC located in the control room.

The equipment is designed for monitoring at most 16 different transformers, with the concomitant surveillance of all parameters. The signals for remote transmission (3 wires) from all the 16 transformers enter a multiplexer with 18 inputs and one output, assuring the successive connection between the data from the transformers and the information from PC. The output from the multiplexer is a serial one, RS 232, allowing displaying the measured parameters. By means of this system, all the transformer parameters could be checked and modified according to intended purpose from the control room.



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IMT M-05

Technical characteristics:

- ◆ Oil temperature measurement accuracy:
 $\pm 2^{\circ}\text{C}$;
- ◆ Supply voltage:
220 V +10%-15% V a.c; 50 Hz;
- ◆ Operating temperature: **-10°.... +50°C;**
- ◆ Protection degree: **IP 54;**
- ◆ Maximum displayed temperature:
0° - 150° C;
- ◆ Accessories: **PT 100 probe;**
 - oil level transducer: **0 - 1500 Ω;**
 - Buchholz protection relay with 4-20 mA unified signal output
- ◆ Relay-type output signals:
 - 4 relays for ventilation surveillance and failure;
1 relay for oil level surveillance;
 - 1 relay for the volume of gases in Buchholz relay
- ◆ Overall dimensions (mm):
330 x 230 x 140;
- ◆ weight: **2.8 kg**

Remote communication:

IMT M-05 has three terminals for sending remotely to a central PC all information referring to the equipment operation parameters.

The software application installed on PC is Windows XP compatible and allows visualizing the current values of operation, the acquired data archiving.

By using the communication software, it is possible to dialogue with maximum 16 equipment, type IMT M-05

The digital equipment for temperature monitoring, **IMT M-05**, will be mounted in the transformer electric switch box, provided with a glass mounted on the door allowing visualizing the displayed quantities.

The digital equipment for temperature monitoring, **IMT M-05**, will be coupled with the PC from the control room by means of a multiplexer type MUX-16r delivered by ICMET Craiova. The connections between each one and the multiplexer will be carried out by a cable CSYEcAbY-F4x1.5 mm².

For monitoring, it is necessary an IBM PC computer provided with an operating system with Windows XP license, having the minimal characteristics:

- Processor: 2 GHz;
- Memory: 512 Mb;
- Base plate with serial port (DB9);
- CD-ROM;
- Monitor: 1024/768 pixels resolution;
- Operating system: Windows XP Professional

ICMET Craiova will assure the equipment delivery, technical assistance when mounting, setting, training and commissioning.

The software is the property of ICMET Craiova; it does not require license, and the beneficiary is entitled to use it all along the period of operation of the digital equipment for temperature monitoring.

No special measures for labor protection are necessary, but the technical book contains references to the general norms for labor protection.

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