

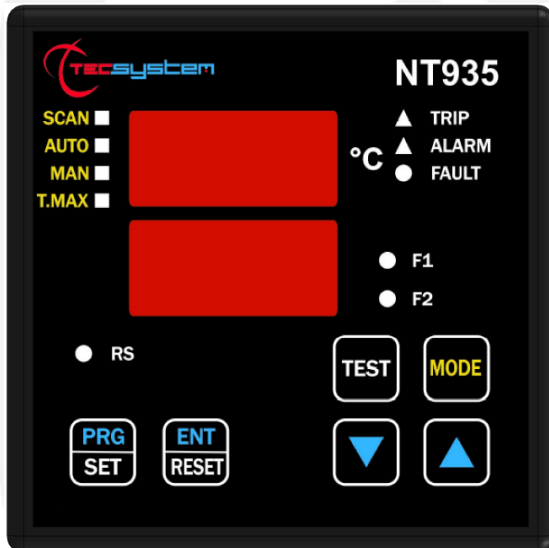
## TECHNICAL BULLETIN

### NT935 IR ED16

The new NT935 IR ED16 is a technical evolution of the units ED09; in this document we will describe most important upgrades of the various models.

The changes are:

#### NEW GENERAL FEATURES OF THE NT935 IR ED16:



**Microcontroller up-to-date**

**Double display**

**Temperature range -40+200°C**

**Power supply 24-240 Vca-cc**

**Increased relays switching capacity**

**Free voltage contacts FAN1 and FAN2**

**Voting function introduction**

**Intellifan function introduction**

#### **Microcontroller up-to-date**

New microcontroller much more performing in respect of operation and data management.

#### **Double display**

With the introduction of the double display we give, to the user on the plant, fast messaging visualization much more clear for easy operation in case of need.

#### **Temperature range -40°C+200°C**

Universal reading range -40°C+200°C.

#### **Power supply input 24-240 Vca-cc 50/60Hz**

Traditional range 24-240 Vca-cc 50/60Hz.

### **Increased relays switching capacity (old versions 5A only)**

Improve the technical specifications of the relays used for alarms: ALARM-TRIP-FAULT-FAN1 and FAN2, free voltage contacts 10A-250Vac-res.

### **Free voltage contacts FAN1 and FAN2**

The FAN1 and FAN2 contacts can handle the cooling of the transformer and of the environment in which it operates, the cabin, but can also be used for signaling or the management of further reports...more flexibility!

### **VOTING function introduction**

The function Voting comes from the concept of redundancy that consists in duplication of components of a system with the intention of increasing reliability.

#### **HOW DOES VOTING WORK**

Taking advantage of the principle of redundancy, we use the probes installed on the three phases U-V-W to monitor the operation of the transformer but at the same time ensure the proper functioning of the probes themselves, discriminating any false alarms (generated by installation errors).

Activating VOTING "YES" the unit performs a comparison of the temperature values recorded on the monitored channels CH1-CH2-CH3 and it enables the switching of the tripping contact (TRIP), only if the TRIP threshold is exceeding the value on at least two channels in the same period of time T.

### **Intellifan function introduction**

**Intellifan allows you to reduce the thermal shock on the transformer** anticipating partially (one bar at a time) the activation of the ventilation system.

The decrease of thermal shock on the transformer will allow you to optimize the life of the transformer and for the cooling system too.

Enabling FAN INT. "YES" the unit will alternate the activation of contacts FAN1 and FAN2 anticipating the activation of the ventilation system to the intermediate value between FAN1 ON AND FAN1 OFF.

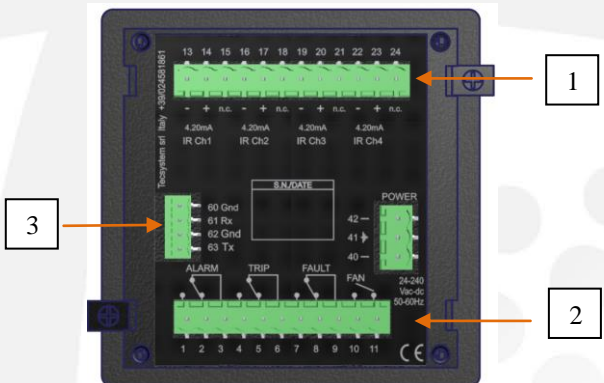
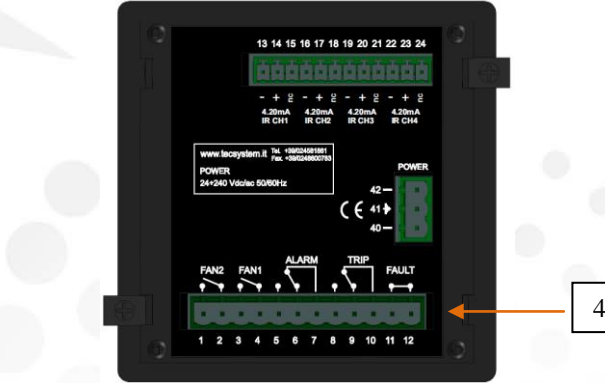
ES. FAN1 ON = 70°C and FAN1 OFF = 60°C ACTIVATION FAN INT. = 65°C

**(For further information on this function read Technical Bulletin n°006 – INTELLIFAN on the SUPPORT/TECHNICAL BULLETIN section on the website [www.tecsystem.it](http://www.tecsystem.it))**

## CHANGES ON CONNECTIONS:

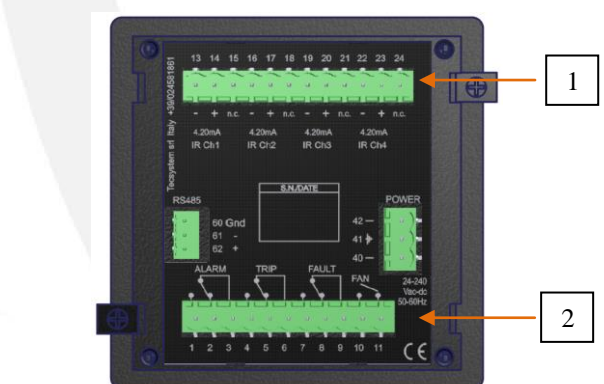

### NT935 IR STANDARD

### NT935 IR BASIC ED16

CODE: 1CN0035	CODE: 1CN0171
 <p>Diagram of the NT935 IR STANDARD terminal block. It shows 24 input terminals (13-24) labeled 'IR CH1' to 'IR CH4' with 4.20mA current. Below are terminals for S/N/GATE, POWER (42, 41, 40), and relays (ALARM, TRIP, FAULT, FAN). A 24-240 Vdc-50-500Hz power input is also shown. Callouts 1, 2, and 3 point to specific features.</p>	 <p>Diagram of the NT935 IR BASIC ED16 terminal block. It shows 24 input terminals (13-24) labeled 'IR CH1' to 'IR CH4' with 4.20mA current. Below are terminals for POWER (42, 41, 40), and relays (FAN2, FAN1, ALARM, TRIP, FAULT). A 24-240 Vdc-50-500Hz power input is also shown. Callout 4 points to the FAULT contact.</p>
<p>1) Reduction of 4.20mA inputs terminals: pitch 3,81 (max cable section 1,5mm<sup>2</sup>), designed for use of special signal cables.</p>	
<p>2) Module optional port no more available.</p>	
<p>3) Change of numeration and place of relays: FAN(1) - FAN2 - ALARM - TRIP - FAULT</p>	
<p>4) FAULT contact (11-12) SPST. Fault condition management unit ON/OFF (NO-NC), switching contact when unit power on. Useful for indications of lack of power, memory damaged, sensor fault (FCC-FOC-FCD), CAL fault and to prevent that the customer makes incorrect connections.</p>	

### NT935 IR MODBUS

### NT935 IR AD ED16

CODE: 1CN0036	CODE: 1CN0170
 <p>Diagram of the NT935 IR MODBUS terminal block. It shows 24 input terminals (13-24) labeled 'IR CH1' to 'IR CH4' with 4.20mA current. Below are terminals for RS485, S/N/GATE, POWER (42, 41, 40), and relays (ALARM, TRIP, FAULT, FAN). A 24-240 Vdc-50-500Hz power input is also shown. Callouts 1 and 2 point to specific features.</p>	 <p>Diagram of the NT935 IR AD ED16 terminal block. It shows 24 input terminals (13-24) labeled 'IR CH1' to 'IR CH4' with 4.20mA current. Below are terminals for RS485, POWER (71, 70, 42, 41, 40), and relays (FAN2, FAN1, ALARM, TRIP, FAULT). A 24-240 Vdc-50-500Hz power input is also shown. Callouts 3 and 4 point to specific features.</p>
<p>1) Reduction of 4.20mA inputs terminals: pitch 3,81 (max cable section 1,5mm<sup>2</sup>), designed for use of special signal cables.</p>	
<p>2) Change of numeration and place of relays: FAN(1) - FAN2 - ALARM - TRIP - FAULT</p>	
<p>3) FAULT contact (11-12) SPST. Fault condition management unit ON/OFF (NO-NC), switching contact when unit power on. Useful for indications of lack of power, memory damaged, sensor fault (FCC-FOC-FCD), CAL fault and to prevent that the customer makes incorrect connections.</p>	
<p>4) Implementation of 4.20mA output.</p>	