ZYGGOT RADDIA TS ONLINE RADIO THERMOGRAPHY SYSTEM

ONLINE THERMOGRAPHY - CONTINUOUS TEMPERATURE MONITORING

RADDIA TS - OFFPRINT

RADIO CONTINUOUS TEMPERATURE MONITORING PROTECTION SYSTEM

ONLINE THERMOGRAPHY SYSTEM
FOR LOW AND MEDIUM VOLTAGE APPLICATIONS

varixx

World's First Online Thermography System (2004).
World Leader in Continuous Temperature Monitoring.
World's First UV Arc Protection System*.
Over 1 Million Sensors Installed Worldwide.
* Patent No. PI 0903809-4

OFFPRINT ZYGGOT RADDIA TS V14 BUILD 50 ENGLISH June 2025

ZYGGOT THERMOGRAPHY
TEMPERATURE MONITORING SYSTEM

RADDIA TS Sensor

Receiver / Repeater
RADDIA TS

ZYGGOT RADDIA TS Relay

Unscaled photos

DESCRIPTION

The RADDIA TS system is designed to allow online monitoring of the temperatures of low and medium voltage components and internal connections, transformers, motors, etc., by transmitting radio signals.
The RADDIA TS series wireless temperature measuring sensor is designed in accordance with the specification for wireless temperature measuring equipment. It is suitable for low voltage switchgear from 440 V to high voltage up to 35 kV of any type. The wireless temperature sensors can be installed at any point where heating is possible. The device uses wireless data transmission technology for real-time transmission of monitored temperature data. In addition, it can be transmitted to the Zyggot relay or DCS remote intelligent monitoring system.
The RADDIA TS system, together with its brother company Zyggot, continues a history of important innovation in the market, since current safety standards prohibit the opening of energized electrical panels for any type to make measurement, including temperature measurements with manual measuring guns or thermography cameras.

The RADDIA TS system allows for "On Line" temperature monitoring of multiple points per relay.
Different Alarm and Trip levels allow for the optimization of the protection system. Each relay can monitor up to 125 sensors.

The relay has the function of reading the temperature values of the sensors. Four digital outputs are available, all configurable.

The data transmission method between sensors and relay uses radio communication at 433/470 MHz, which allows for quick installation and operation.

The RADDIA TS system relay can be connected to a communication network with a supervisory system or remote monitoring.

The Relay has Ethernet communication with various protocols, and can be accessed from anywhere by mobile or non-mobile devices.

APPLICATION

Temperature monitoring and "On Line" protection of electrical connections and components for low and medium voltage electrical panels, transformers, etc.

BENEFITS

* Prevents opening of the energized panel.
* Dispenses with periodic thermography.
* Provides readings of up to 125 points.
* Radio signal transmission.
* Indicates any sensor failure.
* Failure history.

Characteristics of the RADDIA TS System

* Applicable in low and medium voltage up to 35 KV.
* Receiver and Repeater network and Relay with Modbus Rs485.
* Sensors powered by the bus current (C.T.)
* Sensors with battery can be optionally supplied (readings every 5 minutes at 25 °C or up to 25 s at 80 °C).
* Operating start current: >5 A C
* Measurement from -40°C to 125°C.
* Sensor ambient temperature: -40 to 125°C.
* Receiver ambient temperature: -30 to 105°C.
* Readings: Every 15 s.
* Accuracy: +/- 1°C
* Resolution: 0.1 °C
* Receiver communication distance: 150m in open area. * «Repeater» communication distance: 1000 m in open areas.
* Relays with color graphic touch screen display and Modbus and Ethernet communication.
* Fault history with "Time Stamp".
* Reading and over-temperature protection of up to 125 points per relay.
* Readings and protections related to 4 analog inputs per relay.
* External fault monitoring.
* Sensor status monitoring.
* 4 + 8 programmable digital inputs.
* 4 + 8 programmable digital outputs.
* Sensor can be fixed with screws (no risk of falling).
* «Fail Safe» operation of the relay.
* Receiver Output: 2 passive 5A / 250 VAC 5A / 30VDC
* Relay protocols:
MODBUS RTU: Modbus via serial communication.
TCP/IP (Modbus Slave): Modbus over Ethernet).
FTP: (File Server) File Transfer Protocol.
NTP Protocol: Network Time Protocol

KEY POINTS

ZYGGOT

MAIN ADVANTAGES

- WITH ETHERNET
- WITH MODBUS RTU
- PREVENTS PANEL OPENING
- AVOID NORMAL THERMOGRAPHY
- EASY INSTALLATION-125 S. PER RELAY
- RADIO TRANSMISSION
- DOES NOT USE BATTERIES
- FULLY CONFIGURABLE
- MULTIPLE SIGNAL REPEATER
- HISTORY OF EVENTS
- PLOT DE TEMPERATURAS

The RADDIA TS system with sensors that transmit signals via radio was developed for low and medium voltage panels. The sensors measure temperature with physical contact and allow online readings for up to 125 points per relay. They communicate with Receivers/Repeaters that are connected to an RS485 Modbus RTU network. The relay provides local protection and also through a supervisory system. Alarm and trip levels are freely programmable for each point. A possible failure in one of the sensors does not interrupt the operation of the other sensors.
It can be fixed by the metal tape itself or by 2 screws (prevents the risk of falling and allows the tape to be changed and also relieves the tension of the metal tape that makes up the "Energy Harvesting" system by C.T.).

KEY POINTS

- **Color Touch Screen.**
- **Has Ethernet communication with several protocols.**
- **Several built-in protections.**
- **Real-time graphic recording (Plot).**
- **History of failures and events.**
- **Continuous temperature readings of up to 125 points.**
- **Modbus RTU communication.**
- **Each relay presents continuous measurements of up to 125 points.**
- **Prevents opening of energized panel for possible thermography.**
- **Transmission of temperature signals by radio.**

APPLICATIONS

- **Internally to electrical panels for continuous temperature monitoring.**
- **Transformer Supervision.**

MAIN FEATURES

- **Reads temperatures of up to 125 points per relay.**
- **Configurable alarm and trip levels for temperature and analog inputs.**
- **Real-time graphical recording for temperatures and analog inputs.**
- **Detection of differential temperature increases integrated into the relay and configurable by the user.**
- **History of faults and status.**
- **Continuous readings.**
- **4 analog inputs with configurable alarm and trip levels.**
- **4 + 8 digital inputs for external events or faults (ventilation, doors, etc.).**
- **4 + 8 configurable digital outputs.**
- **Modbus RTU + Ethernet TCP IP. (All data accessible via Ethernet)**

PRODUCT COMPOSITION

CODE: VZX/RADDIA/TS/L or VZX/RADDIA/TS/F

RELAY 96 X 125 Touch Screen

Technical Information

FEATURES: RADDIA TS RELAY

Power Supply	24 Vcc
Humidity	5 to 95%
No. of sensors	up to 125 sensors
Resolution	0.1°C
Imputs	4 analog 4 digital (12 to 24Vdc)
Outputs	2 Alarm and Trip outputs (N.O.) 2 programmable outputs (N.O.) 1 connection to Receiver
Communication	Modbus RTU Devicenet (optional) Ethernet TCP-IP (optional)
Screen	Color, Touch Screen WVGA

RELAY

The systems are available in 2 models.
VZX/RADDIA/TS/L: Relay with color touch screen.
VZX/RADDIA/TS/F: Same as L but with expansion module for 12 digital inputs and 12 digital outputs.

CODE:

RADDIA TS SENSOR

Technical Information

FEATURES: EBLOCK 88x (x=D or x=R)

Power Supply	24 Vdc (10 - 30 Vdc) 2W
Humidity	5 to 95%
Communication	CAN
Temperature	Oper: 0 to 60 °C /// Stored: -10 to +60 °C
Imputs	8 Digital IMputs (12 to 24 Vdc)
Outputs	Model 88D = 8 Digital Output (DC) Modelo 88R = 8 Digital Output (Relay)
Imput	Imp.: 10K /// Treshold: 8 VDC / 3 VDC
Max Distance	1000 M
Current output (Model 88D)	2,5 A Max per point /// Max 10A Total (model 88D)
Output (mod 88R)	3,0 A @ 250 VAC Res. Max (mod. 88R)

COD: V5CON
(Included with each Relay)

INTERFACE

CODE:

RADDIA TS/RS RECEIVER

Technical Information

FEATURES: RADDIA TS SENSOR

Signal transmission:	Radio 433 / 470 Mhz
Precision:	+/- 1C
Sampling Time:	15 s
Reading Type:	By direct contact
Resolution:	0.1°C
Point reading:	-50 to 125 °C
Operating Ambient T.:	-30 to 105 °
Power Supply:	per C.T. > 5A AC
Depht:	17 mm
Length:	32.5 mm
Width:	32.5 mm
Material:	Metal & Policarbonate

CODE: VPS6024 or VPS 12024

24 VDC POWER SUPPLY

CODE:

RADIO REPEATER TS/RR

Technical Information

FEATURES: RS RECEIVER

Communication:	RS484 Modbus RTU
Radio Frequency:	433 / 470 Mhz
Outputs:	2 x Passivos 5A / 250 VAC
Maximum sensors N.:	125
Resolution / Precision:	0.1°C / 1°C
Operating Ambient T.:	-20 a +55 °C
Measuring range:	-50 a +125 °C
Power Supply:	12-48 VDCV /100-265 VAC
Consumption:	< 2W
Dimensions:	90 W x 38 L x 90 D
Communication:	Modbus RTU
Material:	ABS

CODE:

Sensor With Metal Tape

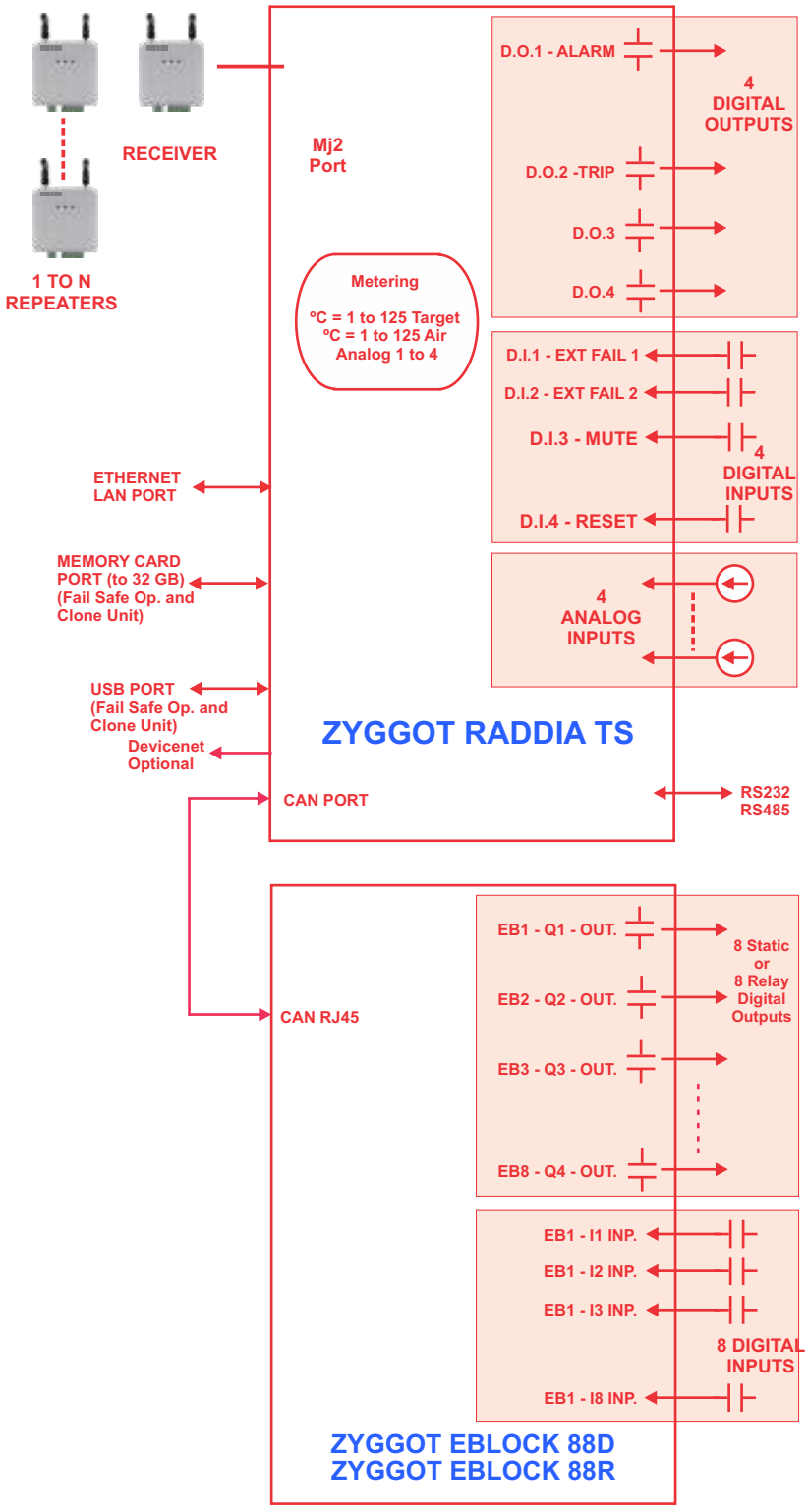
Technical Information

Connectors: EB/88D & EB 88R

1:	Digital Outputs / Relay Outputs
2:	Network Address Selection Keys
3:	Status LEDs
4:	Imputs
5:	CAN and Power Supply
6:	Ground
7:	CAN RJ45

NOTE: The **RADDIA TS** sensor is sold and packaged in boxes of up to 10 units, as shown in the photo on this page. The metal tape is made up of 3 thin layers for optimum flexibility and when folded in half along its entire length it becomes 6 layers, passing internally into the cavity of the Raddia TS sensor. In this way it can embrace busbars up to 10 inches wide x 1 inch thick or circular ones up to 7 inches in diameter. When attaching the tape to smaller busbars, the excess can be cut off if desired. In this way, the minimum operating current is 3 Amps.
If it is necessary to use it on larger busbars, the bundle of metal tapes can be used without folding in half, thus reaching busbars twice the size, in which case the minimum operating current will be 6 Amps. Note that such large busbars will certainly have much higher currents than this.
See installation details later in this manual.

SINGLE-LINE DIAGRAM AND MAIN FEATURES



Measurement

The **Zyggot RADDIA TS** Relay provides accurate measurement of:

* Up to 125 point temperatures.
* 4 x 12-bit analog inputs for measurement and protection of external variables, such as other temperatures acquired by thermocouples and others.
* Operating Hours.
* Integrity of sensors in the network (Not Responding or OK)
* Temperature of the Receiver

Display

Touch Screen graphic 64k colors display, with trend plot capability. The trend plot shows in real time in graphs of up to 4 sensors per screen the real behavior of any temperature or analog input.

Programming tools

A free program developed with graphical windows is provided free of charge by Varixx to further facilitate the parameterization of the relay. Even without this program, it is very easy to parameterize the relay through the HMI, with interactive and user-friendly menus. Another program tests and parameters each sensor (emissivity and address).

Event memory

The relays allow the memorization and indication of the last 120 faults with the date and time of occurrence. These indications are not lost even if the relay is switched off.

Communication ports

The ZYGGOT Raddia relay has 1 programmable RS232 or RS485 communication port with converter, which can be used for communication with supervisory systems or PLCs with Modbus RTU communication protocol. Another CAN port with CsCAN or Devicenet protocol (optional) allows communication and expansion.
There is a USB port and a port for Memory Card up to 32 GB.
An ETHERNET LAN port is also available but is not currently used by the embedded software.

Analog Inputs

The Zyggot Raddia relay has 4 12-bit analog inputs that can be used for measurement and protection, connected to external temperature transducers and others.

Digital Inputs

Zyggot Raddia relays have 4 configurable digital inputs, which can for example be connected to panel door micro switches or ventilation air flow sensors.

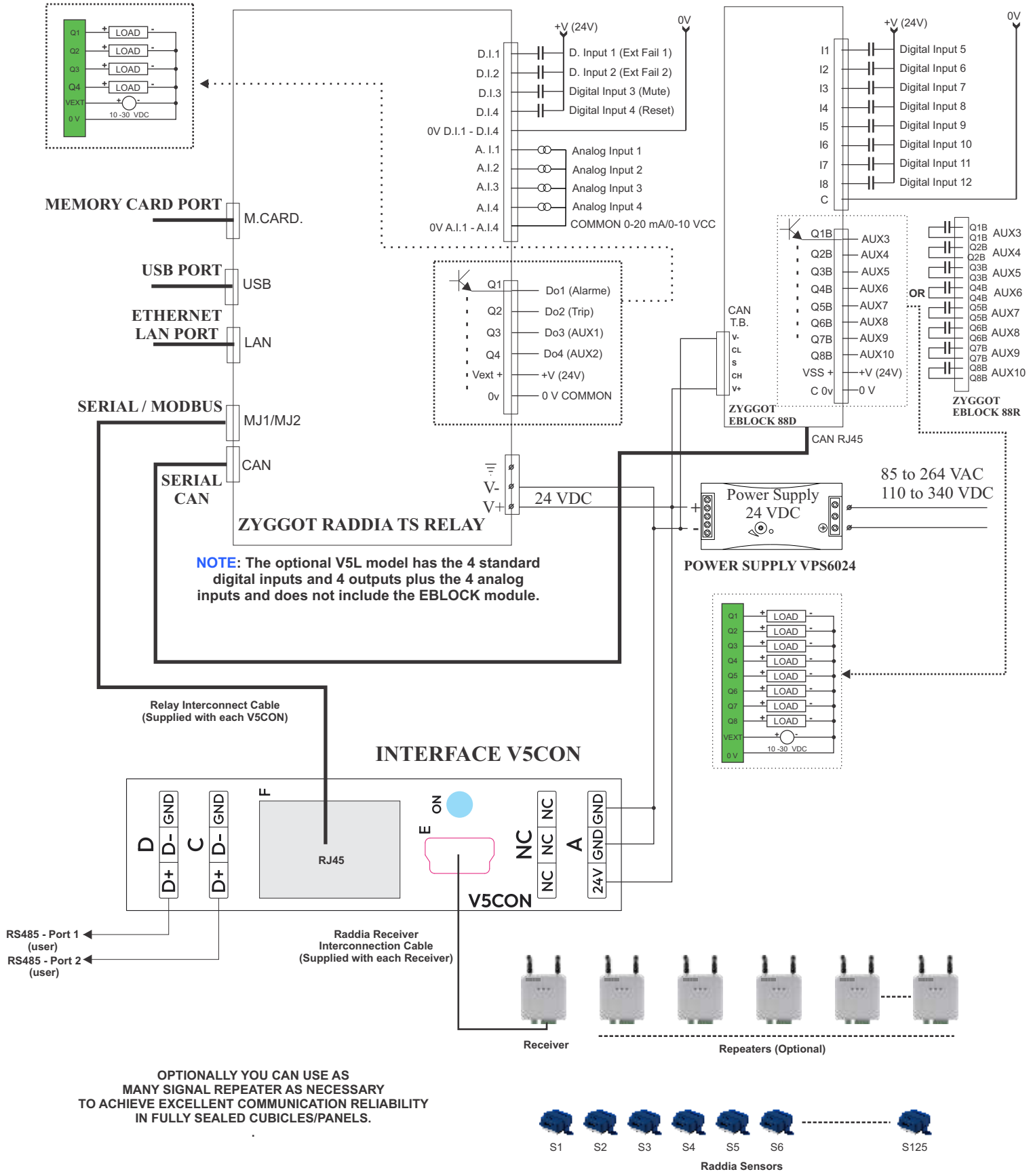
Digital outputs

There are 4 digital static outputs available on the relay and 8 digital static outputs (model Eblock 88D) or 8 relay outputs (dry contact) (model Eblock 88R), all configurable for alarm or trip, to indicate any of the faults.

Topology

Tubular Raddia TS allow quick and easy installation and parameterization.

TYPICAL CONNECTIONS



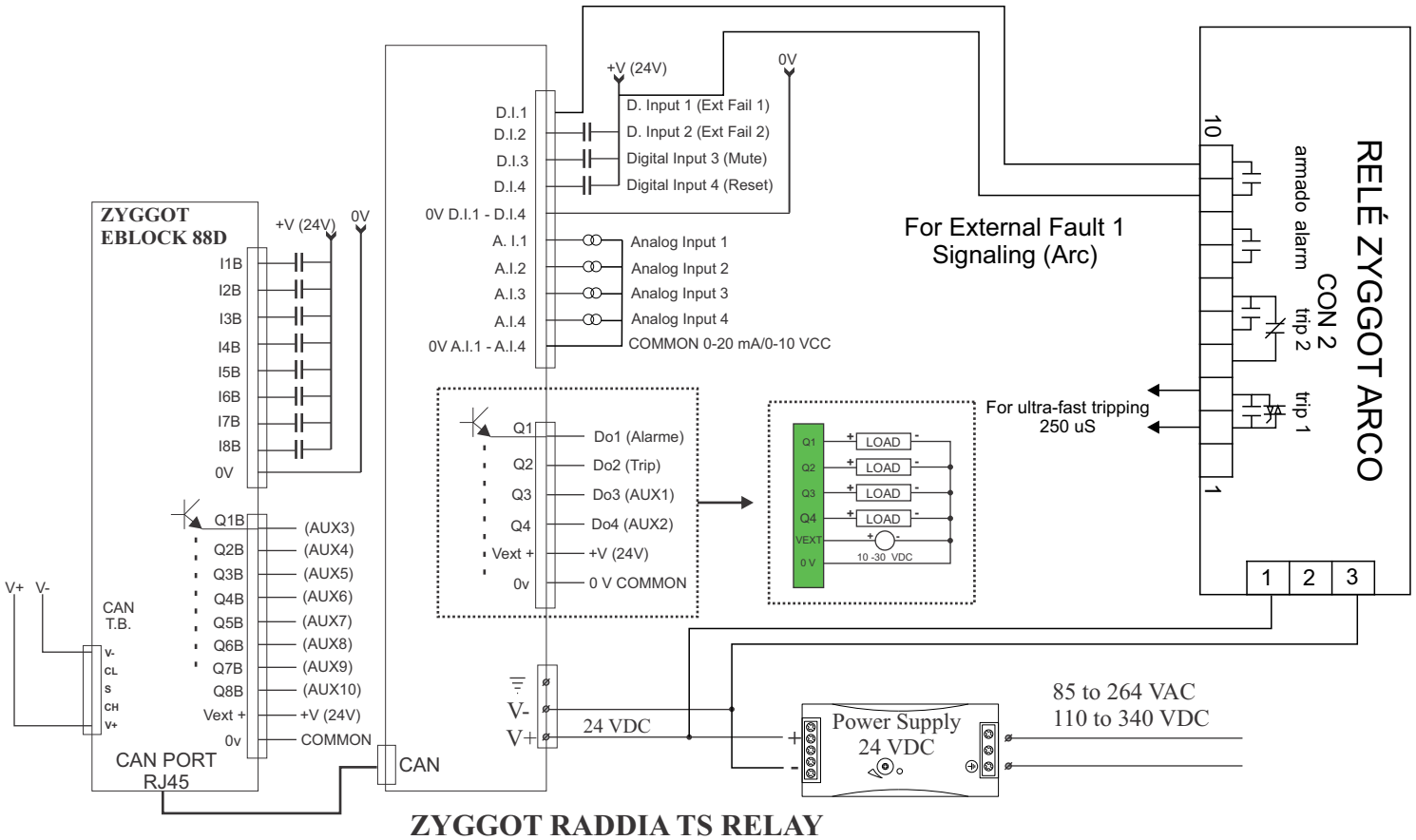
CONNECTIONS

Example of Using External Fault Connection with Zyggot UV Arc Flash Relay Varixx

ZYGGOT RADDIA TS THERMOGRAPHY

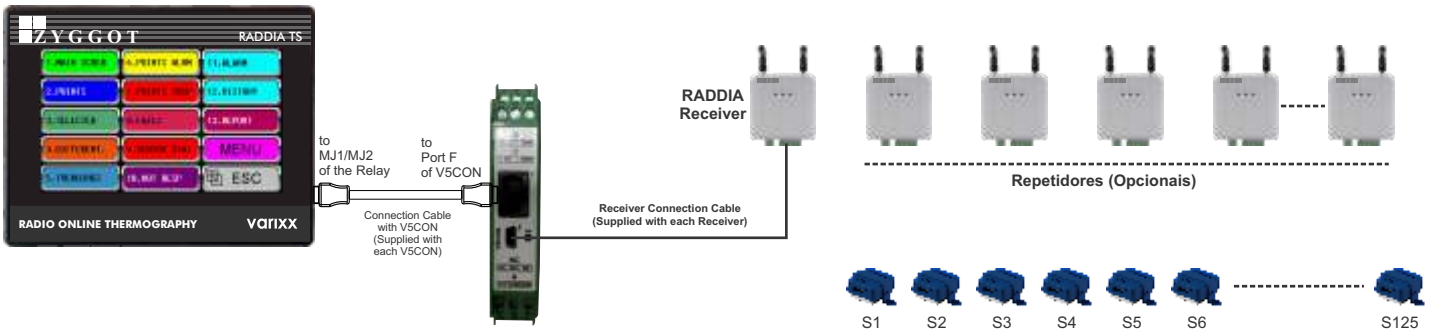
ZYGGOT ARC FLASH RELAY

One or two Zyggot Arc Flash relays for protection against Arc Flash by Ultra-violet detection connected to the external Fault input 1 and/or 2 for Real Time History purposes. Each Zyggot Arc Relay can monitor up to 50 sensors and as one sensor is normally used per cubicle, up to 50 cubicles can be protected per Zyggot Arc relay.

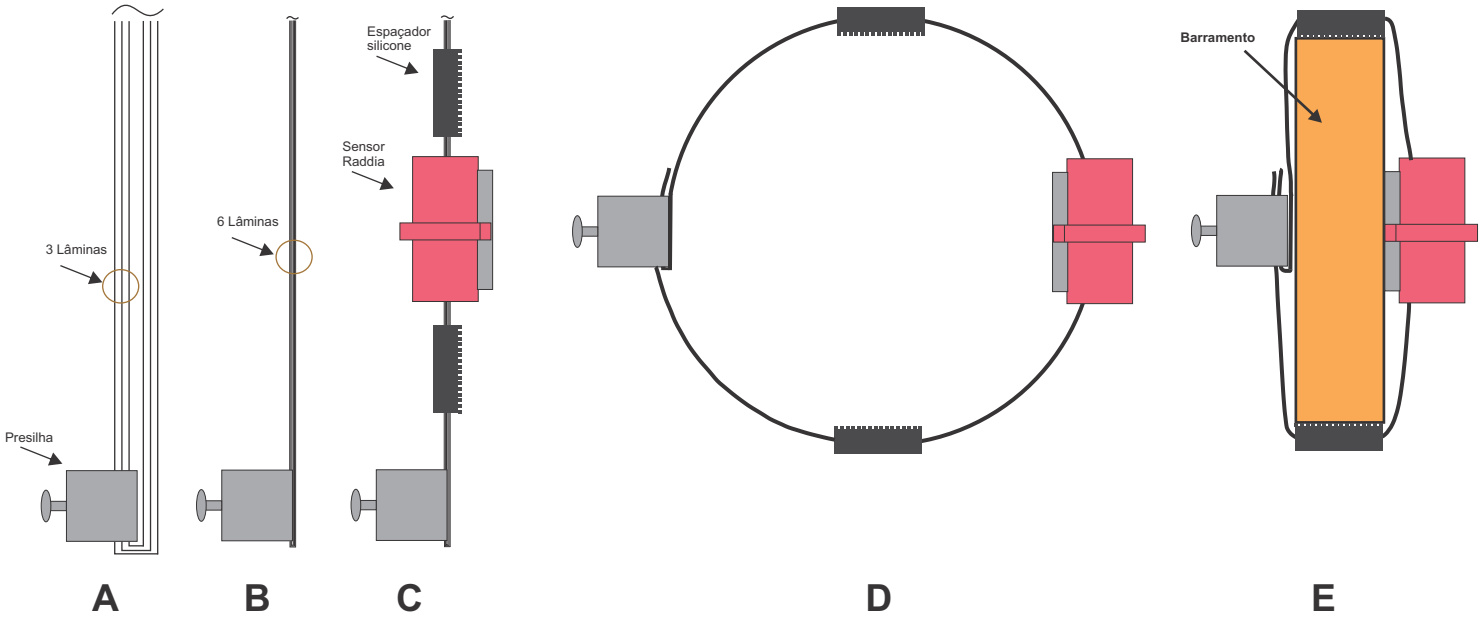


ZYGGOT RADDIA TS RELAY

TYPICAL NETWORK AND INSTALLATION DETAILS OF THE RADDIA TS SENSOR



ASSEMBLY



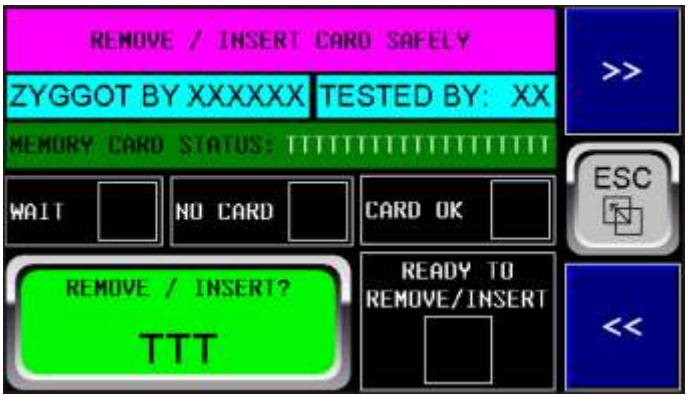
A: Pass the 3 strips through the clamp and fold them in half, ending with the ends at the same length.
B: View of the folded strips and joined together, forming 6 layers.
C: Pass the strips through the silicone spacers and Raddia TS sensor as shown.
D: Pass the strips through the clamp again, wrapping around the rectangular or circular busbar.
E: Fix the Raddia sensor to the busbar with the two screws of the polycarbonate support, adjust the metal strips and tighten the screw of the fastener. Cut the excess strip if necessary.
NOTE: If the busbar is very large, do not fold the strips in half and pass only 3 strips through the sensor. This will allow use on busbars twice the size, but the minimum current will also double from 3A DC to 6A DC.

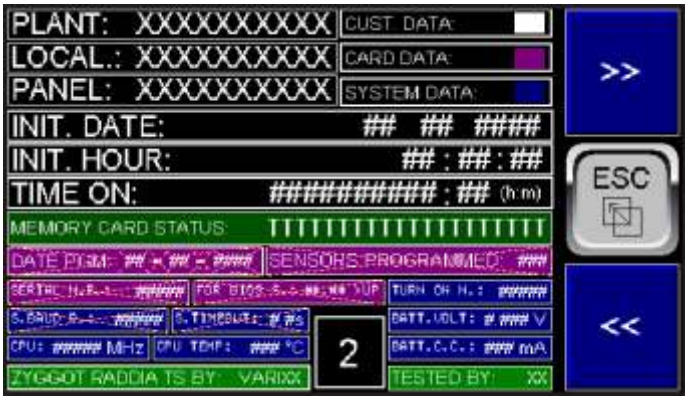
MAIN SCREENS FOR OPERATION

MAIN MENU, (ESC) INFO SCREENS

MAIN MENU:

Screen from which all other system screens are accessed.
From here, all operating and programming screens are accessed.
Note that, to eventually draw the operator's attention, the «ALARM» field will flash and have a red border to indicate that there is an alarm that has not been viewed (Acknowledged) or Cleared (Cleared) on the alarm screen. By touching this field, you enter the alarm screen and can acknowledge and reset the alarm.
More details below.



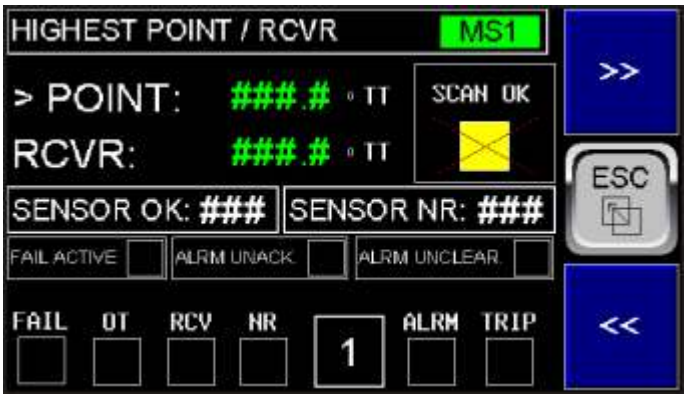


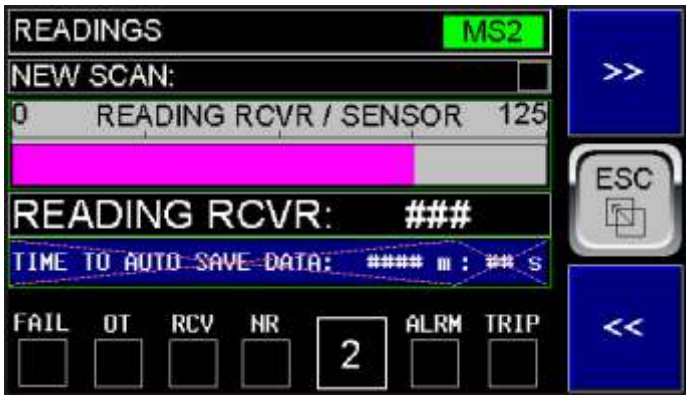
INFO SCREENS 1 to 5:
There are 3 screens, scrolled by the >> and << keys and accessed by pressing the ESC key on the main menu.
INFO SCREEN 1: When the system is powered on, this is the initial screen. Pressing ESC takes you to the main menu above.
VERS: Software version
S.COMM OK: Indicates that the sensor network is communicating OK.
S.COMM ERROR: Indicates that the sensor network is communicating with an error.
DATE, TIME and DAY OF THE WEEK: Real time clock.
FAIL: Indicates a fault that has not been reset.
OT: Indicates a fault related to Over Temp of points.
RCV: Indicates a fault related to the receiver temperature.
NR: Indicates the existence of 1 or more sensors not responding on the network.
ALRM: Indicates an alarm condition that is not silenced (without Mute) and an active alarm output.
TRIP: Indicates a fault condition in Trip (active Trip output)

ATTENTION: THE ZYGGOT RADDIA TS RELAY LEAVES THE FACTORY WITH A PASSWORD TO ENTER THE PROGRAMMING MENU = «827499». CHANGE IT, WITHIN THE «RELAY CONFIG» MENU TO ANY OTHER VALUE (ADVISABLE).

MAIN SCREENS FOR OPERATION

MAIN SCREEN





MAIN SCREEN MS1 to Ms12:

MS1:
> POINT: Shows the highest point temperature measured among all sensors.
RCV: Shows the ambient temperature measured by the Receiver.
SENSOR OK: Shows the number of sensors responding and in OK status in the network (Must be equal to the number of sensors in the network).
SENSOR NR: Shows the number of sensors not responding in the network (Must always be zero).
FAIL: Indicates Active Fault.
OT: Indicates overtemperature in any of the points.
RCV: Indicates ambient overtemperature measured by the Receiver.
NR: Indicates failure due to any number of sensors not responding.
ALRM: Indicates active ALARM output (without Mute).
TRIP: Indicates active TRIP output, without Reset.
Fail Active: Indicates that there is an active fault.
Alarm Unacknowledged and **Alarm Uncleared**: Indicate that there is an alarm acknowledged (Ack) and not cleared (cleared) respectively, still by the operator on the alarm screen and depending on what is programmed in the Reset on Fail Unack or Reset on fail Active parameters, it will not be possible to reset the faults and cancel the trip output.
SCAN. OK: It remains active in green if all sensors are OK and responding correctly.

MS2:

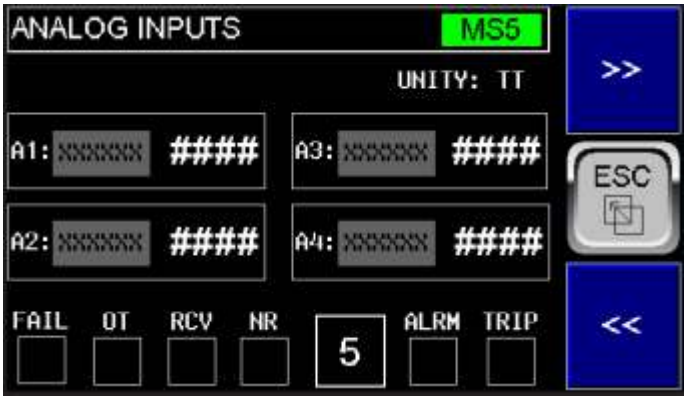
NEW SCAN: Indicates new sensor reading scans on the network. This is done continuously.
READING SENSOR: Shows the number of the sensor being read and a bar graph corresponding to the number of the sensor currently being read. It serves to show activity and generate confidence that the sensors are being read continuously. It also shows the time remaining for new saving of the target and air temperature data of all sensors if programmed to perform this action. If not programmed, it will always show zero.
Other fields as in MS1.

MS3:
PROGRAMMED: Shows the total number of sensors in the network.
RESPONDING: Shows the number of responding sensors in the network.
NOT RESPONDING: Shows the number of non-responding sensors in the network.
TOTAL ALARMS: Shows the total number of alarms that have occurred since the last reset of this number from the programming menu.
TOTAL TRIPS: Same as for number of trips that have occurred.
Other fields as in MS1.

MAIN SCREENS FOR OPERATION

MAIN SCREEN

4:
DIGITAL INP.1 to 4 & **Digital Input EB1 (Aux 1)** to **EB8 (Aux 8)**: Indicates the states of digital inputs.
DIGITAL OUT 1 a 4 & **Digital Output EB1 (Aux 1)** a **EB8 (Aux 8)**: Indicates the status of digital outputs.
Other fields as in MS1.

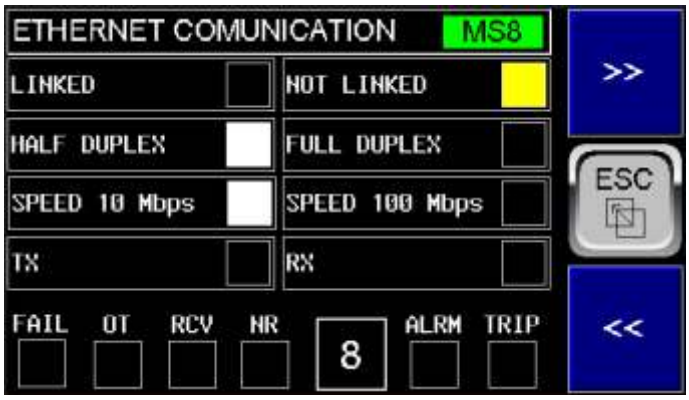


MS5:
ANALOG INP.1 a 4: Shows the values of Analog inputs 1 to 4 if used.
It also shows the name assigned to each input to facilitate identification.
Other fields as in MS1.

MS6: Related to communication with sensors.
S. COMM OK: Indicates whether the communication is OK, without error.
S. COMM ERROR: Communication error with the sensor network.
TIMEOUT: Timeout error with the sensors.
FRAME/PARITY: Frame or Parity error on the network.
RESP FORM: Error due to an unexpected response.

CRC/CHECKSUM: CRC (Cyclic Redundancy Check or Checksum) error.
REJECT ADDR: Indicates whether the address was rejected.
Other fields as in MS1.

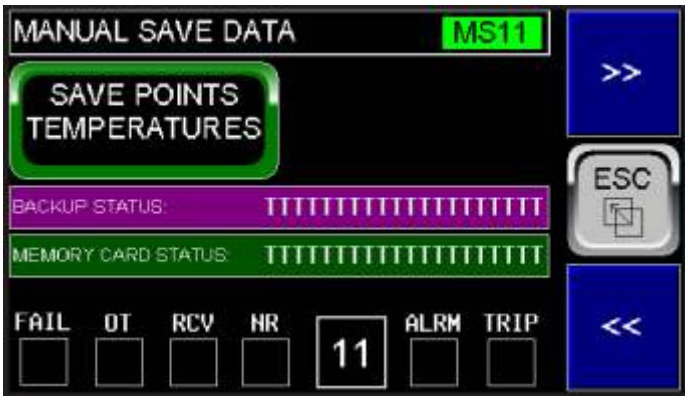
MS7: Related to Modbus communication
MODB ACTIV: Indicates whether MODBUS is active.
MODBUS INACTIVE: Indicates whether MODBUS is inactive.
MODBUS OK: Indicates whether Modbus is OK, without error.
MODBUS ERROR: Indicates whether there is an error in Modbus.
MODBUS STATUS: (STANDBY, TIMEOUT, VALID MESSAGE, **PARITY ERROR, FRAME ERROR, OVERRUN ERROR, CHECKSUM ERROR, INACTIVE**) Indicates the possible states.
Other fields as in MS1.



Ms8: Related to ETHERNET communication
LINKED: Indicates that the Ethernet cable is connected.
NOT LINKED: Indicates that the Ethernet cable is disconnected.
HALF DUPLEX and **FULL DUPLEX**: Indicates the current communication mode.
SPEED 10 Mbps and **SPEED 100 Mbps**: Indicates the current communication speed.
RX: Indicates receiving data.
TX: Indicates transmitting data.
Other fields as in Ms1.

MAIN SCREENS FOR OPERATION

MAIN SCREEN



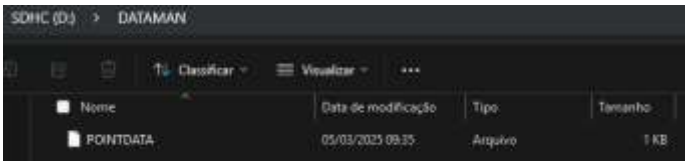
MS9:
POINT ALRM: Indicates if there is any target in alarm condition.
POINT TRIP: Indicates if there is any target in Trip condition.
RECEIVER ALARM: Indicates receiver temperature in alarm condition.
RECEIVER TRIP: Indicates receiver temperature in trip condition.
DIFFERENTIAL: Indicates if there is any point in alarm condition or trip due to differential.
S. COMM FAIL: Indicates if there is a communication error in the network.
NOT RESP: Indicates Not Responding failure.
MODBUS FAIL: Indicates failure related to Modbus communication
Other fields as in MS1.

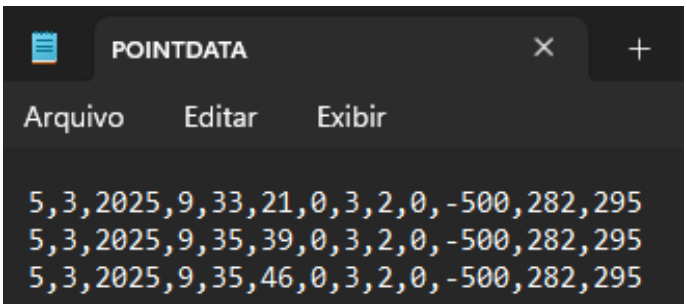
MS10:

MUTE ALARM / RESET FAIL: Buttons that allow you to silence (Mute Alarm) the alarm or reset (Reset Fail) the fault condition. Reset Fail will only act if it is already silenced (Mute) and if 'Reset on Fail' is programmed if there is still an existing fault.
Other fields as in MS1.

MS11:
On this screen, you can save target and air temperature data from all sensors to the memory card, at any time, by manual command. These files are in Excel CSV format with data separated by commas and can be opened in Excel and generated into tables or graphs.
SAVE POINT TEMPERATURES: When pressed, the background will be green while the target temperature data is added to the corresponding file on the memory card.
This file is located in the **DATAMAN** directory and in the **POINTTDATA** file and the data is added to the existing ones with the following sequence: **dd, mm, yyyy, hh, mm, ss, 0, NS, SR, 0, T1, T2, T3,.....Tn.** (zero is used as a separator).
MEMORY CARD STATUS: shows one of the sentences, as described in Info Screen 4 above.
BACKUP STATUS: Displays one of the following sentences depending on the current situation:
1- STANDBY / 2- OK - PROCEED / 3- ERROR - CHECK CARD / 4- DONT BACKUP ON FAIL / 5- OK - DONE / 6- WRITING / 7- READING / 8- BUSY.

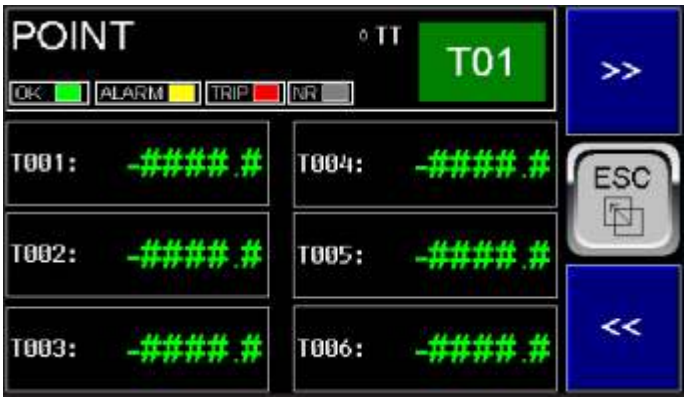
Example below, point temperatures, with 3 sensors and 2 responding.





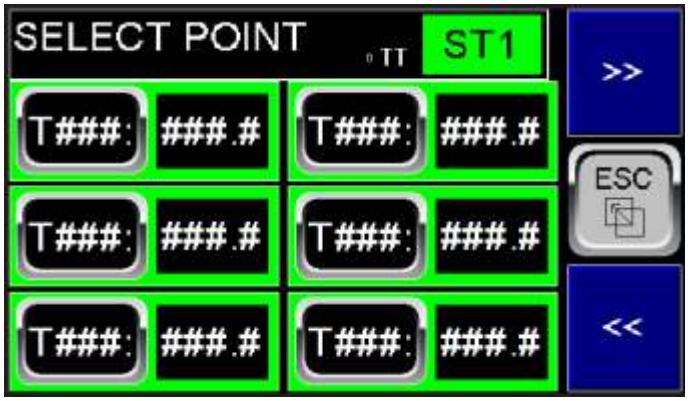
MAIN SCREENS FOR OPERATION

POINT, SELECT POINT



TARGET T01 to T21:

There are 21 screens, scrolled by the >> and << keys.
T01 to T21: Screen Index. Flashes if any of the Target values is above the set alarm value.
°TT: Indicates °C (degrees Centigrade) or °F (degrees Fahrenheit), as programmed.
T001 to T125 (screens 1 to 21): Shows the current temperature of each target. The color will be white if within the normal range, yellow if above the programmed Alarm point and red if above the programmed Trip point. If yellow or red, it will also flash.



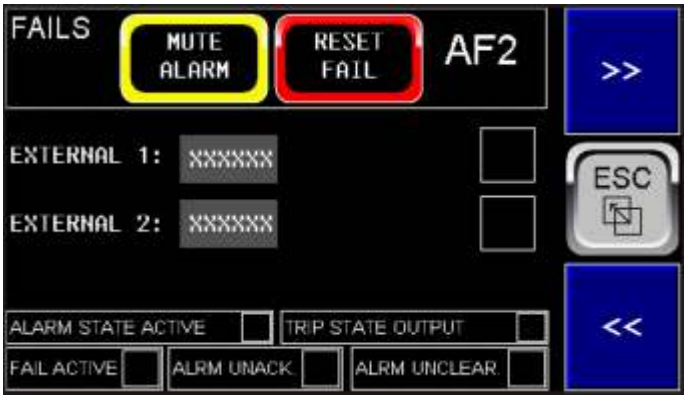
SELECT TARGET ST01 to ST4:

There are 4 screens, scrolled by the >> and << keys.
ST01 to ST4: Screen Index. Flashes if any of the Target values, even if not selected, is above the stipulated alarm value.
T###: Sensor index, from 1 to 125, which the operator can enter by touching this key to monitor the Target Temperature. Flashes if this temperature is above the alarm level programmed for it.
####: Shows the current temperature of the selected target. The color will be white if within the normal range, yellow if above the programmed Alarm point and red if above the programmed Trip point. If yellow or red, it will also flash.

°TT: Indicates °C (degrees Centigrade) or °F (degrees Fahrenheit), as programmed.

MAIN SCREENS FOR OPERATION

FAILS

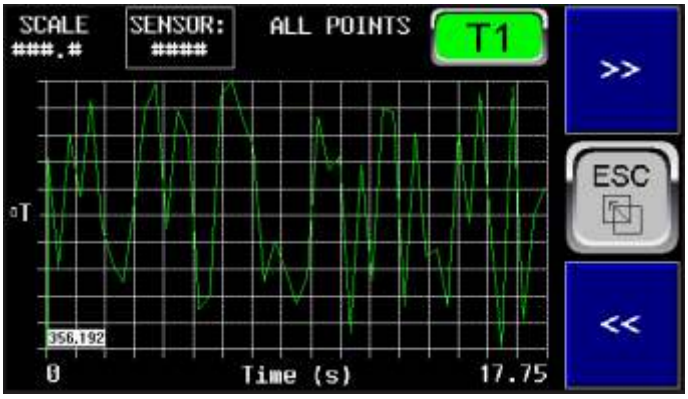


FAILS AF1 to AF7:

There are 7 screens, scrolled by the >> and << keys.
Af1 to AF1: Screen Index.
Indicates the currently active faults (Alarm and Trip) if selected in the programming menu. Screens 6 and 7 indicate faults in specific sensor groups as programmed for the respective groups in the menu.
The Mute Alarm and Reset Fail buttons on each screen allow you to silence the alarm (digital alarm output) or Reset the fault, respectively. Note that to reset the fault, you must first perform the Mute function and also that the fault no longer exists if the 'Reset On Fail' parameter is not enabled in the Programming menu.
They also show the conditions: **Alarm State Active and Trip State Output**.
Fail Active, **Alarm Unacknowledged** and **Alarm Uncleared**: **as detailed in screen MS1**

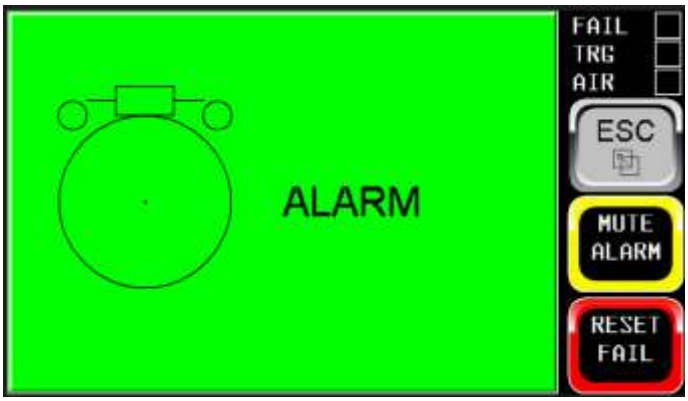
MAIN SCREENS FOR OPERATION

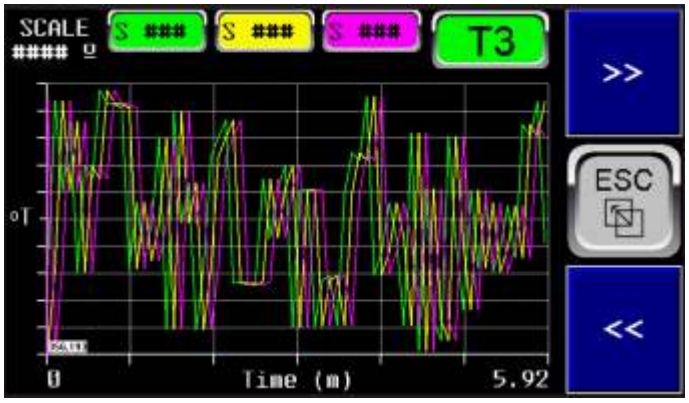
TRENDINGS

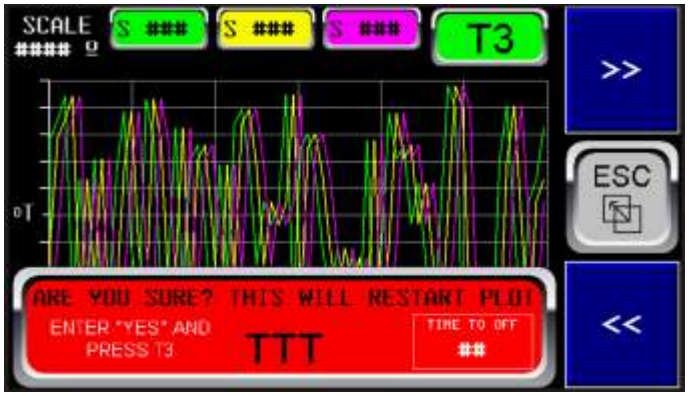


TRENDING PLOT T1 and T2 (Continuous Scope):

There are 18 screens, scrolled by the **>>** and **<<** keys. These are the first two.
T1 and T2: Screen Index and curve reset button (Plot restart) if programmed to be active in the programming menu.
The first two show all the Target and Air temperatures respectively, of the sensors programmed in the network. With each 'scan' of all the temperatures, the curve goes down to zero and repeats this continuously as if it were an electrocardiogram. The 'scan' never stops and the curve is continually shifted to the left.
The sampling time is **50 mS** and each screen can show **17.75 seconds**. When leaving this screen and returning to it, the curves restart, unlike the curves from **T4** to **T18**.





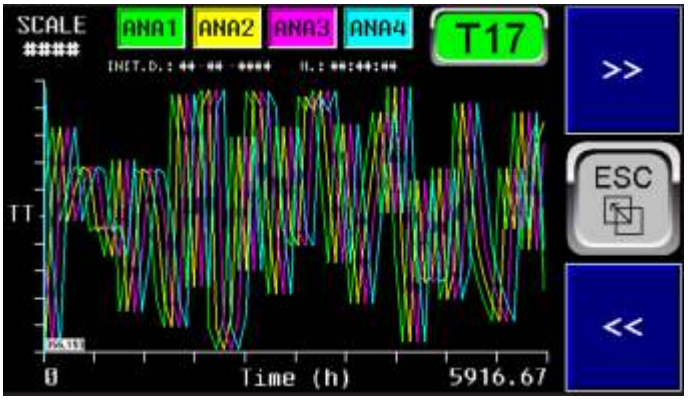


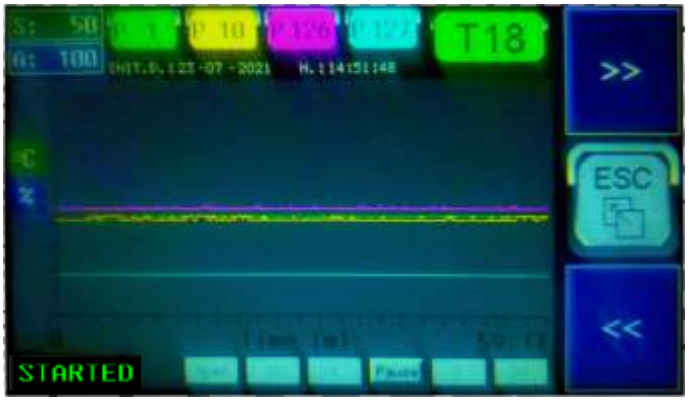
TRENDING PLOT T3 (Continuous Scope):

This is the third screen of the 18 plot screens, scrolled by the **>>** and **<<** keys.
T3: Screen Index and curve reset button (Plot restart) if programmed to be active in the programming menu.
On this screen, you can enter the indexes of 3 sensors, from 1 to 125, and if you enter «**0**» (Zero), the trace remains at zero. With each 'scan', the curve goes down to zero and repeats this continuously as if it were an electrocardiogram. The «scan» never stops and the curve is continually shifted to the left.
The sampling time is **1000 mS**, and each screen can show **5.92 minutes** in total. When you leave this screen and return to it, the curves restart, unlike the curves from **T4** to **T18**.
When you press the T3 key, the button appears in red, asking if you are sure you want to restart the curves on this screen. If yes, the operator will have 10 seconds to enter the answer "Yes" on the button and touch T3 again. Otherwise, the red button disappears and the curves are not reset.

MAIN SCREENS FOR OPERATION

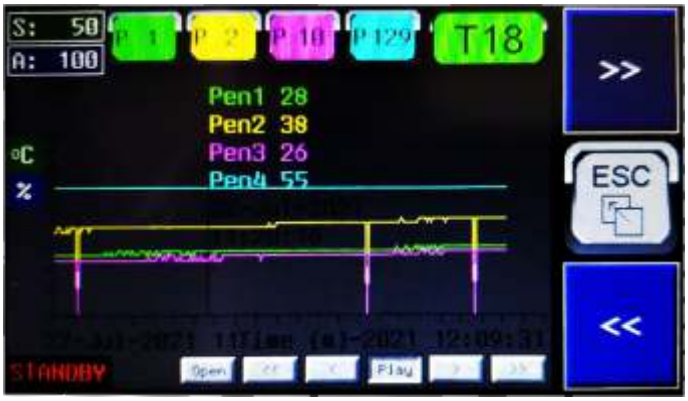
TRENDINGS





TRENDING PLOT T13 to T17 (Trending Plot):

These are screens 13 to 17 of the 18 screens paged by the **>>** and **<<** keys.
T13 to T17: Screen Index and curve Reset button (Plot restart) if programmed to be active in the programming menu.
Screens T13 to T17 show 4 curves each, corresponding to the 4 analog inputs, with different sampling times (See Table). The X axis shows whether the scale is in temperature (°C or (°F) or percentage (%) and the scale value is shown in the upper left.
These screens do not automatically restart the reading when exiting them, they are functional even if they are not displayed and show the curves when returning on them. However, when the screen is finished, the plot does not remain inactive but always shows the memorized lines even if the relay is turned off and on again.
The date and time of the start of the plot is shown in the upper part of each screen, independently of the others.
If the relay is turned off and on again, the previous sampling is not lost and the new sampling is separated by a vertical black line.
To restart, touch buttons T13 to T17.
When pressing keys T13 to T17, a red button appears, asking if you are sure you want to restart the curves on this screen. If so, the operator will have 10 seconds to enter the answer "Yes" in the button and touch T13 to T17 again. Otherwise, the red button disappears and the curves are not reset.
If the red button is counting down for 10 seconds and you leave the screen, it will automatically disappear as well.



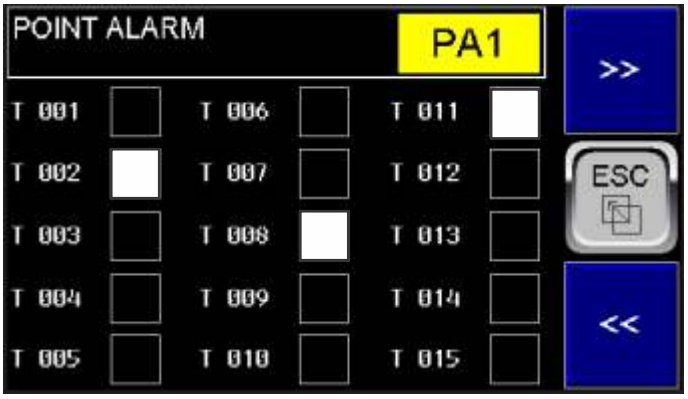
TRENDING PLOT T18 (Retentive Trending Plot):

This is screen 18 of the 18 screens that can be paged by the **>>** and **<<** keys.
This feature allows the recording of the curves and data plotted on it on a memory card of up to 32 Gb inserted in the appropriate slot on the relay.

When initialized in the programming menu, the screen will display in the lower left corner the information in green letters "**STARTED**" and a file folder will be automatically created on the card with the name **Plotzxx** where xx is the end of the current node. If it is not started, the message will be "**STANDBY**".
When in "**Started**", a new file with the csv extension will be created every hour within this file, with the name consisting of the day, month and full hour, without the minutes. Each file contains data separated by commas, which can be opened in Excel using the "Get data" function in the "**Data**" tab and graphs can be generated. Each file is automatically saved hourly and will contain 360 readings of each of the 4 variables (4 traces). Each reading is taken every 10 seconds. These are light files of approximately 18 Kb each. Even if you exit the screen, the recordings continue and if the recording is interrupted by turning the power off and on again, a vertical black line appears at this point and the recording continues.

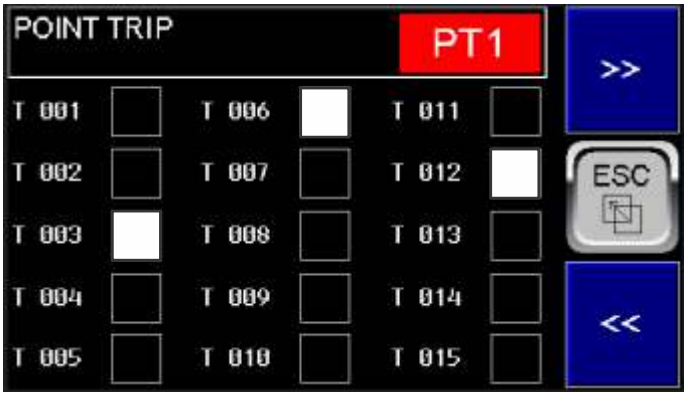
MAIN SCREENS FOR OPERATION

POINT ALARM, POINT TRIP, NOT RESPONDING, DIFFERENTIAL



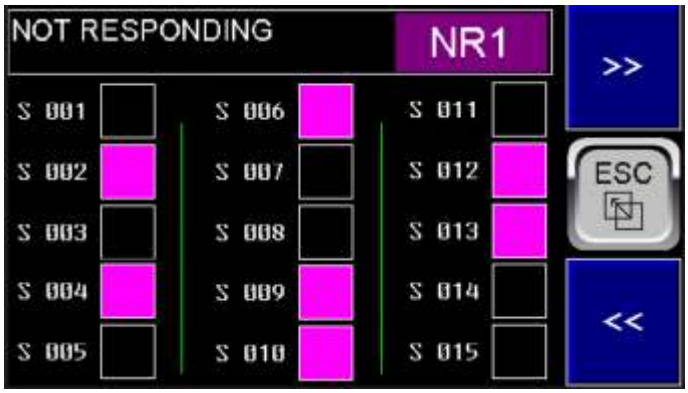
POINT ALARM TA1 to TA9:

There are 9 screens scrolled by the >> and << keys.
Pa1 to PA9: Screen Index. Flashes if any of the Point values is above the value programmed for the alarm.
T001 to T125: Indicates whether the temperature of each Point is above the value programmed for the alarm.

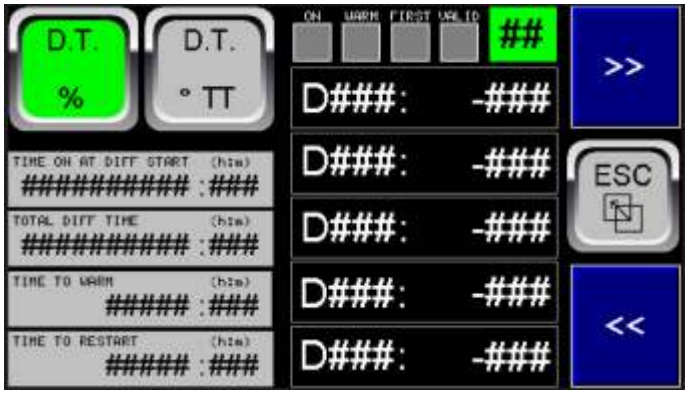


POINT TRIP PT1 to PT9:

There are 9 screens scrolled by the **>>** and **<<** keys.
PT1 to PT9: Screen Index. Flashes if any of the Point values is above the value programmed for Trip.
T001 to T125: Indicates whether the temperature of each point is above the value programmed for Trip.



NOT RESPONDING NR1 to NR9:
There are 9 screens scrolled by the **>>** and **<<** keys.
S001 to S125 (from screens NR1 to Nr9): Indicates whether the respective sensor has stopped responding to the relay on the network.



DIFFERENTIAL 1 to 21:

There are 21 screens that are paged by the **>>** and **<<** keys.
When activated, the sensor indexes are paged 5 by 5 from D1 to D125 and the other fields remain on the screen.

(1) to ## (9): Screen index.

DT%: Button that selects to show the values as a percentage of variation in the programmed time. When selected, it changes from gray to green.

TEMP (°TT): Button that selects the option to show the values as a differential of temperature variation in the programmed time. When selected, it changes from gray to green. °TT shows whether it is in Celsius or Fahrenheit.

ON: Indicator that the system has started the differential function (if programmed for this in the programming menu).

WARM: Indicates that the programmed heating period has passed, during which the system ignores the readings for calculating the differential variation, waiting for the system to stabilize in a normal operating temperature condition.

FIRST: Indicates that the first reading was performed, after the 'Warm' period, on which the differential variations will be calculated for each new reading

VALID: Indicates whether the new reading is valid for differential calculations.

TIME ON AT DIFF. START: Shows, for information purposes, the 'On' time in hours and minutes since the system was started, as per screen 2 of the information screens.

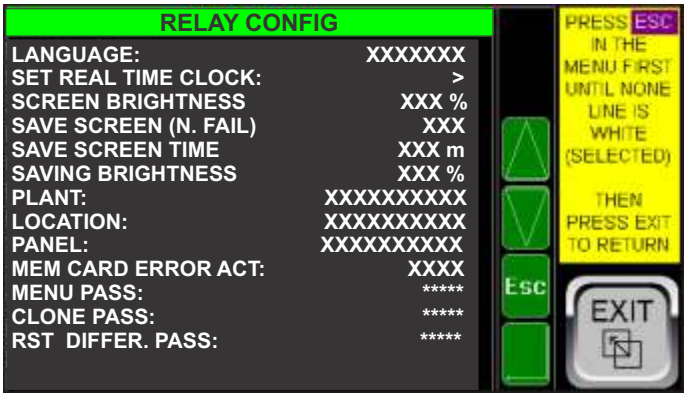
TOTAL DIFF. TIME: Shows the total time since the first valid reading was performed and on which the differential is calculated.

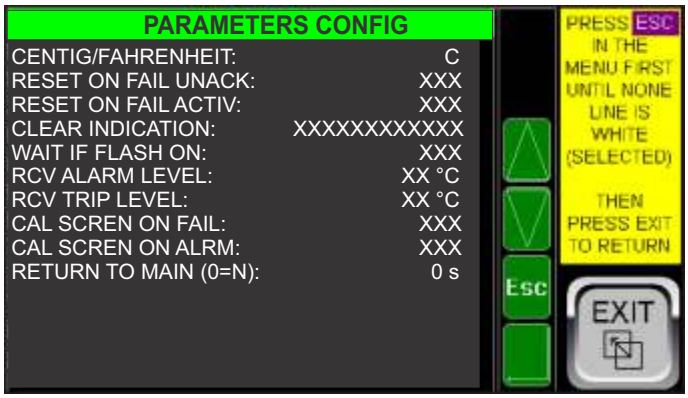
TIME TO WARM: Shows a retroactive counter to zero of the time remaining to complete the «Warm» period as programmed.

TIME TO RESTART: (only appears if set to «Valid») Shows a retroactive counter to zero of the time remaining in hours and minutes, for automatic restart of a new differential period, if programmed for this in the programming menu. If not programmed for automatic restart, the system remains indefinitely considering the first reading taken after Warm. If restarted, manually or automatically, and the system is already in stable condition (after Warm), a new Warm period is not expected and a new initial reading is performed for future differential calculations. Until the differential calculation begins, after Warm, this field is displayed as 0:0
D### to D###: Sensor indexes from 1 to 125 if the system is operating with an active and valid differential, otherwise D0 is displayed in all 5 fields.
###: Differential value in % or temperature (°C or °F) for each index from D1 to D125, according to the selection in the % or Temp. selection buttons described above. This value is white if it is below the differential value programmed for alarm or yellow if it is above the differential level programmed for alarm or red if it is above the differential level programmed for Trip. In both cases it also flashes in addition to changing color.

PROGRAMMING

MENU





M01- RELAY CONFIG

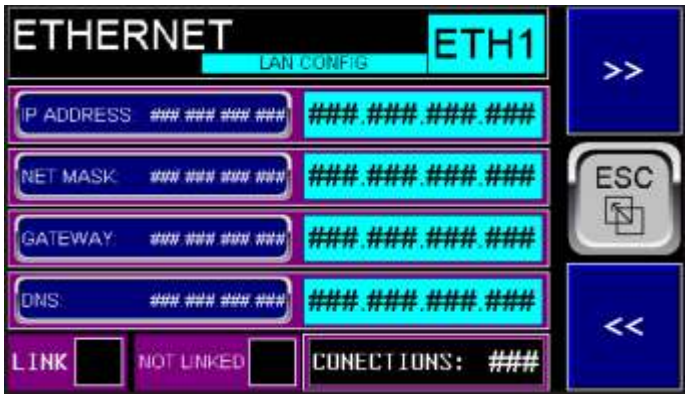
01.1- Language: (English, Português, Español).
01.2- Set Real Time Clock:Enter the correct date and time, if necessary.
01.3- Screen Brightness: Adjust the screen brightness between 50 and 100% for normal operating conditions.
01.4- Save Screen (N. Fail): Select Yes to start reducing the screen brightness after the time programmed below. No to not perform this action. This action will not be performed if it is in failure (N. Fail) and if it is in screen saving mode and a failure occurs, the screen will return to its normal brightness until the failures are reset.
01.5- Save Screen Time: Adjust the screen inactivity time so that it has reduced brightness. When you touch the screen, the brightness returns to normal and this time starts counting again.
01.6- Saving Brightness: Adjust the screen brightness between 0 and 50% for the screen saving mode.
0.1.7- Plant: Enter the description of the Plant with a maximum of 10 letters.
01.8- Location: Enter the description of the installation location with a maximum of 10 letters.
0.1.9- Panel: Enter the description of the panel with a maximum of 10 letters.
01.4- Mem Card Error Act: (None, Log). Select the options None if you do not want a card error alarm to occur or Log if you want the failure to occur.
0.1.10- Menu Pass: Enter the new Password if necessary, with a maximum of 5 numbers. If set to zero, the programming menu can be accessed by the operator without a password, which entails a risk and is not advisable.
0.1.11- Clone Pass: Enter the new Password if necessary, with a maximum of 5 numbers to access the Relay Clone menu.
0.1.12- RST Differ. Pass: Enter the new Password if necessary, with a maximum of 5 numbers to access the Restart Differential Data menu. This request is made to the operator each time the relay is switched on again with active differential data. A new differential cycle can be started from this moment or the initial readings of the differential system valid at the time can be maintained.

M02- PARAMETERS CONFIG

02.1- Centig/Fahrenheit: (C or F). Select the Temperature unit.
02.2- Reset On Fail Unacknowledged: (Yes, No). Choose Yes to allow Reset with an unacknowledged failure (Ack). The failure is acknowledged on the Alarm screen. It will flash if there is a non-Ack alarm.
02.3- Reset On Fail Uncleared: (Yes, No). Choose Yes to allow Reset with an unacknowledged failure cleared or reset (Clr). The failure is reset on the Alarm screen. It will flash if there is a non-Clr alarm.
02.4- Clear Indication: (Auto, After Reset). If «Auto» is selected, the yellow and red indications on the main temperature screens will return to white if the temperature returns to a value below the alarm or trip point, but the squares indicating Alarm or Trip will remain on until the «Reset» key is pressed. If «After Reset» is selected, the yellow and red colors continue to indicate that an alarm or trip has occurred even if the temperatures have returned to normal, and the small squares remain active. The colors and fault indicators only return to normal after «Reset» is activated. This is the factory condition and is the safest, to indicate faults that have already returned to normal conditions.
02.5: Wait if Flash On: (Yes, No). Condition to return to the main screen automatically, as explained in the «Return to Main» parameter below. If «Yes» is selected, it does not automatically return to the main screen if Flash is On.
02.6: RCV Alarm Level: Alarm level of the receiver body.
02.7: RCV Trip Level: Trip level of the receiver body.
02.8: Cal Screen On Fail: (Yes, No). If set to «Yes», in the event of a fault with Trip, the alarm screen will be automatically displayed.
02.9: Cal Screen On Alarm: (Yes, No). If set to «Yes», the alarm screen will be automatically displayed in the event of an Alarm.
02.10: Return to Main: Time in seconds after which the relay will automatically display the main screen 1. If set to zero, there will be no automatic return. There will also be no automatic return if the screen is in the programming menu or with Flash activated as per parameter 02.4 above.

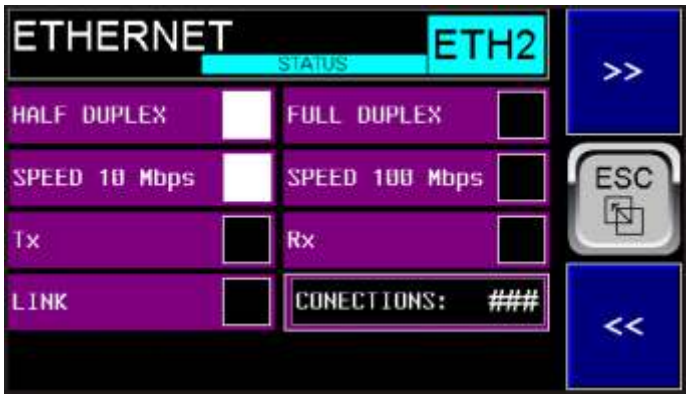
PROGRAMMING

MENU



M13A- ETHERNET - LAN CONFIG

M13A.1- IP ADDRESS: Enter the address of the Zyggot Raddia relay on the LAN network.
M13A.2- NET MAsk: Enter the number corresponding to the network mask. Normally 255.255.255.0
M13A.3- Gateway: Enter the number corresponding to the Gateway if necessary. If not necessary, leave it at 0.0.0.0
M13A.4- DNS: Enter the Domain Name Server address if necessary. If not used, leave it at 0.0.0.0
This screen also shows whether the Ethernet cable is connected or not and the number of connections. Note: the number of connections may eventually show «**zero**» even though it is connected if the transmissions are not repetitive and because it is very fast, there is not enough time to show it on the screen.



M13B- ETHERNET - STATUS
This screen only shows the various connection statuses, and does not have any fields to be entered.

The statuses shown are:

M13B.1- HALF DUPLEX or **FULL DUPLEX**: Shows the connection mode.
M13B.2- SPEED 10 Mbps or **100 Mbps**: Shows the connection speed.
M13B.3- Tx and Rx: Shows whether data is being transmitted or received.
M13B.4- LINK: Whether the Ethernet cable is connected (Link) or not and the number of connections. Note: the number of connections may eventually show "zero" but it is connected if the transmissions are not repetitive and because they are very fast there is not enough time to show it on the screen.

M13C- ETHERNET - ICMP (PING)
This screen, like the corresponding screen in the Report Menu, allows you to test whether a specific device on the network is responding, i.e., is active on the network.
M13C.1- PING ADDRESS: Enter the address to perform the ping.
M13C.2- PING RESPOND TIME: Shows the time in milliseconds that the device took to respond.
M13C.3- Tx and Rx: Shows whether it is transmitting or receiving data.
M13C.4- PING TIMEOUT: If the device does not respond in less than 1 second, it will indicate Timeout, i.e., it is not responding.
M13C.5- STAR and STOP: Starts and stops the PING. When exiting the screen, a Stop is automatically given.

M13D- ETHERNET - TCP/IP PROTOCOL - MODBUS SLAVE

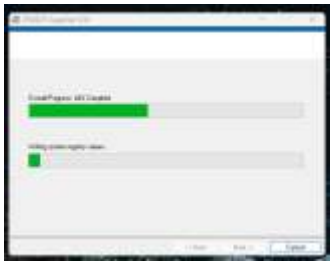
This screen refers to the main protocol of the Zyggot RADDIA TS relay, which allows full Modbus operation, with all functionalities and valid addresses, as well as offsets, etc.

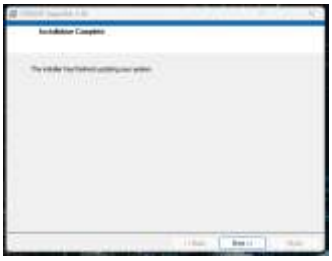
The SUPERGER program provided free of charge by Varixx allows, among other functionalities, complete testing of the Modbus Over Ethernet connection with a computer connected to the Zyggot RADDIA Relay.

COMPUTER PARAMETERIZATION

ZYGGOT SUPERGER

Zyggot Superger is a configuration software for the Zyggot family.
The software is available free of charge on the Varixx website (http://www.varixx.com.br). The main screen of the program is shown on the side.
It is possible to configure the relay directly on the relay itself and also to perform the complete programming on a relay and to clone this relay to several others using a memory card or pendrive, as explained previously.
install the Superger Software on the Windows computer. All the files necessary to run it, including the «Runtime» files, are already included in the package, so no additional software is required. Once installed, it will be ready to run.

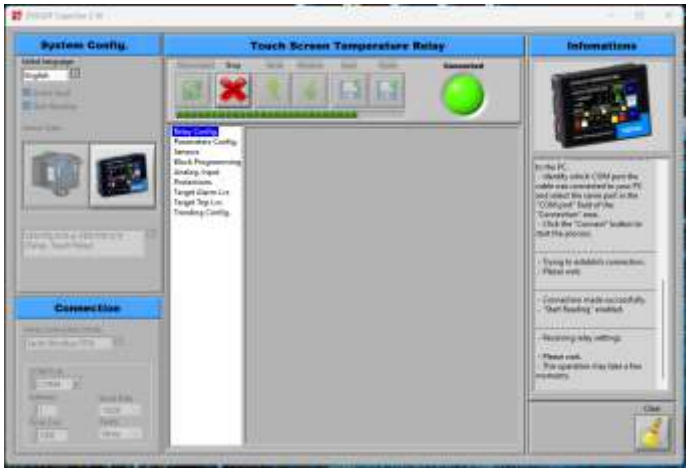




Note: With Zyggot Superger you can easily clone the parameters of one relay to another (this can also be done via the uSD card). To program a series of relays with the same parameters, simply save them (using the «**Save**» button in the Superger software) and load the file later if necessary so that all the parameters are ready to «**Send**» to the relay.

1- The first step is to connect the relay. To do so, adjust the Modbus communication values on the relay and activate it in RS-232 mode. For details on how to activate Modbus, see the programming menu section. Use an RS-232 / RJ45 cable to connect the relay to a computer.
You can also use the Ethernet port and do all the programming via Ethernet communication. In this case, program the correct address as programmed on the relay in the Ethernet programming section (Modbus TCP/IP).

2- The next step in the software is to choose the language and working mode on the system configuration screen:
Once you have chosen the language, choose the Zyggot VZX or Zyggot V5FTA or Zyggo RADDIA TS system relay. Once you have chosen the language and the type of relay, by clicking on its image, select the correct parameters for your computer (COM port 1, COM2, etc.) and the parameters that were programmed on the screen regarding Modbus in the relay (For example: Address: 1, Baudrate: **19200**, Timeout: **1000 mS**, **Parity**: None or in the case of Ethernet communication the IP Address, for example: **192.168.1.1**
Make sure that Modbus is in the «**Active**» condition in the relay. Normally, once any parameters related to Modbus in the relay have been changed, it is necessary to turn the relay off and on again for the changes to take effect, as these are parameters related to the relay BIOS.



MODBUS OVER ETHERNET ETHERNET IP SERVER COMMUNICATION WILL WORK WITH PLCS AND ALLEN BRADLEY PROTOCOL OR ALLEN BRADLEY LIKE
Maximum connection = 2 /// PORT = 44818 TCP or 2222 UDP
SEND (PRODUCED) FIRST REGISTER = %R2801 /// LAST REGISTER = %R2928 /// WORDS COUNT = 128
RECEIVE (CONSUMED) FIRST REGISTER = %R3201 /// LAST REGISTER = %R3328 /// WORDS COUNT = 128
The Status word provides Ethernet/IP connection status. The upper byte of the word
contains the Class 3 (Explicit) connection count and the lower byte contains the Class 1 (IO) connection count.
NOTE: When the Status word indicates no connections, the Consumed OCS registers contain old data
As up to 128 words are allowed in each communication, a pagination scheme is used to access all important and available data.
In this version, parameter programming via the Ethernet connection is not allowed, so the variable on the corresponding screen is permanently set to "Disabled"
However, it is allowed to send some commands via the Ethernet connection, in addition to specifying the page to be read.
IN THE PLC CONNECTION PARAMETER, USE "100" FOR THE ASSEMBLY INSTANCE INPUT WITH SIZE = 128 AND USE "101" FOR THE ASSEMBLY INSTANCE OUTPUT WITH SYZE =128

MONO GATEWAY VERSION

CONSUMED	Controller Tags	WRITE PAGE	FUNCTION	DATA	NOTE	WARNING
%R3201 - %3300		XXX	RESERVED			
%R3301	O.Data[100]	0	MUTE	1= MUTE // 0 = DO NOTHING	SEND COMAND MUTE TO RELAY	
%R3302	O.Data[101]	0	RESET	1= RESET // 0 = DO NOTHING	SEND COMAND RESET TO RELAY	
%R3303	O.Data[102]	0	SAVE TARGET	1= SAVE // 0 = DO NOTHING	SAVE TARGET DATA TO MEMORY CARD	
%R3304	O.Data[103]	0	RESERVED	1= SAVE // 0 = DO NOTHING	SAVE AIR DATA TO MEMORY CARD	
%R3305		0	RESERVED			
%R3306		0	RESERVED			
%R3307		0	RESERVED			
%R3308	O.Data[104]	0	TIME STAMP EVENT	SET 1 TO 50		
%R3309	O.Data[105]	0	RESET DIFFERENTIAL WARM	1= RESET DIFFERENTIAL // 0 = DO NOTHING	RESET DIFFERENTIAL WITH A NEW WARM PERIOD	CAUTION
%R3310	O.Data[106]	0	RESET DIFFERENTIAL NO WARM	1= RESET DIFFERENTIAL // 0 = DO NOTHING	RESET DIFFERENTIAL WITHOUT A NEW WARM PERIOD	CAUTION
%R3311		0	RESERVED			
%R3312		0	RESERVED			
%R3313		0	RESERVED			
%R3314		0	RESERVED			
%R3315		0	RESERVED			
%R3316		0	RESERVED			
%R3317		0	RESERVED			
%R3318		0	RESERVED			
%R3319		0	RESERVED			
%R3320		0	RESERVED			
%R3321		0	RESERVED			
%R3322		0	RESERVED			
%R3323		0	RESERVED			
%R3324		0	RESERVED			
%R3325		0	RESERVED			
%R3326	O.Data[107]	0	PAGE TO WRITE	NOTE USED IS THIS VERSION		
%R3327	O.Data[108]	0	PAGE TO READ	SET PAGE FROM 0 TO 15 TO BE READED FROM RELAY	0 = DO NOTTHING // 1 TO 15 SET PAGE TO BE READED	
%R3328	O.Data[109]	0	WRITING DATA VALID	1= DATA TO BE WRITE = VALID // 0 = DO NOTHING	NOTE USED IN THIS VERSION	

PRODUCED	Controller Tags	READ PAGE	FUNCTION	DATA	NOTE	WARNING
%R2927	I.Data[126]	0 - 16	PAGE READED	0 - 16	0 = READED NONE // 1 TO 15 DATA WILL BE READED	
%R2928	I.Data[127]	0 - 16	DATA READED VALID	1= DATA VALID // 0 = WAIT NEW DATA	CONSIDER THE DATA READED ONLY IF %R2928 = 1	
%R2801 - %R2900		1 TO 16	DATA PAGES	SEE BELOW		
%R2801 - %R2925	I.Data[0] - I.Data[125]	1	POINT TEMPERATURES 1 TO 125	x 10 - AS READED (FORMAT XXX.X)	THE DATA NEED TO BE DIVIDED BY 10 TO INSERT THE COMA	
%R2801 - %R2925		2	RESERVED		THE DATA NEED TO BE DIVIDED BY 10 TO INSERT THE COMA	
%R2801 - %R2925	I.Data[0] - I.Data[125]	3	POINT ALARM LEVELS 1 TO 125	x 10 - AS READED (FORMAT XXX.X)	THE DATA NEED TO BE DIVIDED BY 10 TO INSERT THE COMA	
%R2801 - %R2925	I.Data[0] - I.Data[125]	4	POINT TRIP LEVELS 1 TO 125	x 10 - AS READED (FORMAT XXX.X)	THE DATA NEED TO BE DIVIDED BY 10 TO INSERT THE COMA	
%R2901	I.Data[0]	3	RECEIVER TEMP ALARM LEVEL	x 10 - AS READED (FORMAT XXX.X)	THE DATA NEED TO BE DIVIDED BY 10 TO INSERT THE COMA	
%R2901	I.Data[0]	4	RECEIVER TEMP TRIP LEVEL	x 10 - AS READED (FORMAT XXX.X)	THE DATA NEED TO BE DIVIDED BY 10 TO INSERT THE COMA	
%R2801 - %R2925		5	RESERVED		THE DATA NEED TO BE DIVIDED BY 100 TO INSERT THE COMA	
%R2801 - %R2925		6	RESERVED			
%R2801 - %R2925	I.Data[0] - I.Data[125]	7	POINT ALARM ACTIVE 1 TO 125	2 = ACTIVE // 0 = INACTIVE		
%R2801 - %R2925	I.Data[0] - I.Data[125]	8	POINT TRIP ACTIVE 1 TO 125	2 = ACTIVE // 0 = INACTIVE		
%R2801 - %R2925		9	RESERVED			
%R2801 - %R2925		10	RESERVED			
%R2801 - %R2925	I.Data[0] - I.Data[125]	11	SENSORS STATUS	0 = RESPONDING // 1 = NOT RESPONDING		
%R2801 - %R2925		12	RESERVED			
%R2801 - %R2925		13	RESERVED			
%R2801 - %R2925		14	RESERVED	AS READED - SAME AS THE DISPLAY		
%R2801	I.Data[0]	15	RCVR COMM OK	0 = NOT OK // 1 = OK		
%R2802	I.Data[1]	15	RCVR COMM NOT OK	0 = OK // 1 = NOT OK		
%R2803	I.Data[2]	15	RESERVED			
%R2804	I.Data[3]	15	RESERVED			
%R2805	I.Data[4]	15	RESERVED			
%R2806	I.Data[5]	15	RESERVED			
%R2807	I.Data[6]	15	RESERVED			
%R2808	I.Data[7]	15	RESERVED			
%R2809	I.Data[8]	15	RESERVED			
%R2810	I.Data[9]	15	INHIBITED	0= NO // 1 - INHIBITED		
%R2811	I.Data[10]	15	LINK STATE	0 = ETHERNET NOT LINKED // 1 = LINKED		
%R2812	I.Data(11]	15	RESERVED			
%R2813	I.Data[12]	15	ANY FAIL ACTIVE	0 = NO // FAIL ACTIVE		
%R2814	I.Data[13]	15	POINT FAIL	0 = NO // FAIL ACTIVE		
%R2815	I.Data[14]	15	RECEIVER FAIL	0 = NO // FAIL ACTIVE		
%R2816	I.Data[15]	15	ALARM ACTIVE	0 = NO // ALARM ACTIVE		
%R2817	I.Data[16]	15	TRIP ACTIVE	0 = NO // TRIP ACTIVE		
%R2818	I.Data[17]	15	ALARM UNACKNOWLEDGED	0 = NO // 1 = YES		
%R2819	I.Data[18]	15	ALARM UNCLEARD	0 = NO // 1 = YES		
%R2820	I.Data[19]	15	POINT ALARM ACTIVE	0 = NO // 1 = YES		
%R2821	I.Data[20]	15	POINT TRIP ACTIVE	0 = NO // 1 = YES		
%R2822	I.Data[21]	15	RECEIVER TEMP ALARM ACTIVE	0 = NO // 1 = YES		
%R2823	I.Data[22]	15	SENSOR FAIL ACTIVE	0 = NO // 1 = YES		
%R2824	I.Data[23]	15	EXTERNAL FAIL 1 ACTIVE	0 = NO // 1 = YES		
%R2825	I.Data[24]	15	EXTERNAL FAIL 2 ACTIVE	0 = NO // 1 = YES		

PRODUCED	Controller Tags	READ PAGE	FUNCTION	DATA	NOTE	WARNING
%R2826	I.Data[25]	15	ANALOG 1 ALARM ACTIVE	0 = NO // 1 = YES		
%R2827	I.Data[26]	15	ANALOG 2 ALARM ACTIVE	0 = NO // 1 = YES		
%R2828	I.Data[27]	15	ANALOG 3 ALARM ACTIVE	0 = NO // 1 = YES		
%R2829	I.Data[28]	15	ANALOG 4 ALARM ACTIVE	0 = NO // 1 = YES		
%R2830	I.Data[29]	15	ANALOG 1 TRIP ACTIVE	0 = NO // 1 = YES		
%R2831	I.Data[30]	15	ANALOG 2 TRIP ACTIVE	0 = NO // 1 = YES		
%R2832	I.Data[31]	15	ANALOG 3 TRIP ACTIVE	0 = NO // 1 = YES		
%R2833	I.Data[32]	15	ANALOG 4 TRIP ACTIVE	0 = NO // 1 = YES		
%R2834	I.Data[33]	15	EXCESS LIFE ACTIVE	0 = NO // 1 = YES		
%R2835	I.Data[34]	15	DIFFERENTIAL ALARM ACTIVE	0 = NO // 1 = YES		
%R2836	I.Data[35]	15	DIFFERENTIAL TRIP ACTIVE	0 = NO // 1 = YES		
%R2837	I.Data[36]	15	REMOTE 1 ACTIVE	0 = NO // 1 = YES		
%R2838	I.Data[37]	15	REMOTE 2 ACTIVE	0 = NO // 1 = YES		
%R2839	I.Data[38]	15	G1 TARGT ALARM ACTIVE	0 = NO // 1 = YES		
%R2840	I.Data[39]	15	G2 TARGT ALARM ACTIVE	0 = NO // 1 = YES		
%R2841	I.Data[40]	15	G3 TARGT ALARM ACTIVE	0 = NO // 1 = YES		
%R2842	I.Data[41]	15	G4 TARGT ALARM ACTIVE	0 = NO // 1 = YES		
%R2843	I.Data[42]	15	G5 TARGT ALARM ACTIVE	0 = NO // 1 = YES		
%R2844	I.Data[43]	15	G1 AIR ALARM ACTIVE	0 = NO // 1 = YES		
%R2845	I.Data[44]	15	G2 AIR ALARM ACTIVE	0 = NO // 1 = YES		
%R2846	I.Data[45]	15	G3 AIR ALARM ACTIVE	0 = NO // 1 = YES		
%R2847	I.Data(46]	15	G4 AIR ALARM ACTIVE	0 = NO // 1 = YES		
%R2848	I.Data[47]	15	G5 AIR ALARM ACTIVE	0 = NO // 1 = YES		
%R2849	I.Data[48]	15	G1 TARGT TRIP ACTIVE	0 = NO // 1 = YES		
%R2850	I.Data[49]	15	G2 TARGT TRIP ACTIVE	0 = NO // 1 = YES		
%R2851	I.Data[50]	15	G3 TARGT TRIP ACTIVE	0 = NO // 1 = YES		
%R2852	I.Data[51]	15	G4 TARGT TRIP ACTIVE	0 = NO // 1 = YES		
%R2853	I.Data[52]	15	G5 TARGT TRIP ACTIVE	0 = NO // 1 = YES		
%R2854	I.Data[53]	15	RESERVED			
%R2855	I.Data[54]	15	RESERVED			
%R2856	I.Data[55]	15	RESERVED			
%R2857	I.Data[56]	15	RESERVED			
%R2858	I.Data[57]	15	RESERVED			
%R2859	I.Data[58]	15	RESERVED			
%R2860	I.Data[59]	15	RESERVED			
%R2861	I.Data[60]	15	RESERVED			
%R2862	I.Data[61]	15	RESERVED			
%R2863	I.Data[62]	15	RESERVED			
%R2864	I.Data[63]	15	RESERVED			

PRODUCED	Controller Tags	READ PAGE	FUNCTION	DATA	NOTE	WARNING
%R2865	I.Data[64]	15	SCREEN ALARM UNCLEARED	0 = NO // 1 = YES		
%R2866	I.Data[65]	15	SCREEN ALARM UNACKNOULEDGED	0 = NO // 1 = YES		
%R2867	I.Data[66]	15	SCREEN ALARM ANY FAIL ACTIVE	0 = NO // 1 = YES		
%R2868	I.Data[67]	15	RESERVED			
%R2869	I.Data[68]	15	RESERVED			
%R2801	I.Data[69]	16	MAX POINT TEMPERATURE	x 10 - AS READED (FORMAT XXX.X)	THE DATA NEED TO BE DIVIDED BY 10 TO INSERT THE COMA	
%R2802	I.Data[70]	16	RECEIVER TEMPERATURE	x 10 - AS READED (FORMAT XXX.X)	THE DATA NEED TO BE DIVIDED BY 10 TO INSERT THE COMA	
%R2803	I.Data[71]	16	MEMORY CARD STATUS	0=OK// 1= UNKNOW FORMAT// 2=NO CARD//	3= NOT SUPPORTED//4=ILEGAL SWAP//5=UNKNOW//PROTECTED	
%R2804	I.Data[72]	16	DIFFERENTIAL TIME TO WARM HOUR	AS READED		
%R2805	I.Data[73]	16	DIFFERENTIAL TIME TO WARM MINUTE	AS READED		
%R2806	I.Data[74]	16	DIFFERENTIAL TIME TO RESTART HOUR	AS READED		
%R2807	I.Data[75]	16	DIFFERENTIAL TIME TO RSTRT MINUTE	AS READED		
%R2808	I.Data[76]	16	DIFFERENTIAL ON	0 = NO // 1 = YES		
%R2809	I.Data[77]	16	DIFFERENTIAL WARM OK	0 = NO // 1 = YES		
%R2810	I.Data[78]	16	DIFFERENTIAL FIRST READ OK	0 = NO // 1 = YES		
%R2811	I.Data[79]	16	DIFFERENTIAL VALID (OPERATING)	0 = NO // 1 = YES		
%R2812	I.Data[80]	16	REDING THM SENSOR NUMBER	AS READED (1 TO 100)		
%R2813	I.Data[81]	16	SCANNING GATEWAY NUMBER	AS READED (1 TO 40)		
%R2814	I.Data[82]	16	REDING ARC SENSOR NUMBER	AS READED (1 TO 100)		
%R2815	I.Data[83]	16	TOTAL SENSOR RESPONDING	0 TO 100		
%R2816	I.Data[84]	16	TOTAL SENSOR NOT RESPONDING	0 TO 100		
%R2817	I.Data[85]	16	TOTAL ALRM ACTIVE			
%R2818	I.Data[86]	16	TOTAL TRIP ACTIVE			
%R2819	I.Data[87]	16	RESERVED			
%R2820	I.Data[88]	16	RESERVED			
%R2821	I.Data[89]	16	RESERVED			
%R2822	I.Data[90]	16	RESERVED	AS READED (600 TO 0 s)		
%R2823	I.Data[91]	16	REAL TIME CLOCK DAY	1 TO 31		
%R2824	I.Data[92]	16	REAL TIME CLOCK MONTH	1 TO 12		
%R2825	I.Data[93]	16	REAL TIME CLOCK YEAR			
%R2826	I.Data[94]	16	REAL TIME CLOCK HOUR	0 TO 24		
%R2827	I.Data[95]	16	REAL TIME CLOCK MINUTE	0 TO 60		
%R2828	I.Data[96]	16	REAL TIME CLOCK SECONDS	0 TO 60		
%R2829	I.Data[97]	16	RESERVED	1 TO 40		

ABOUT VARIXX

For over 40 years, Varixx has pursued its vocation for developing high-tech products and focuses its efforts on serving the industrial market with quality and speed. Our know-how in power electronics has allowed us to offer the market a wide range of products that have become known for their long service life and reliability. We were the creators of the global online thermography market, with the Zyggot line, which is becoming a global reference in the market for temperature monitoring and diagnostics and arc flash detection in electrical systems in general.

Our product portfolio also includes LED luminaires from our ONNO division, developed and manufactured 100% in house with cutting-edge technology. Varixx values the introduction of innovative concepts worldwide.

AREAS OF ACTIVITY

- MANUFACTURERS OF GENERATOR MACHINES AND SYNCHRONOUS MOTORS
  Static Exciters, Control Box Controllers, Low and Medium Voltage Soft Starters, Semiconductors and Onno LED Luminaires.
- ALUMINUM AND HYDROGEN / OXYGEN PRODUCTION
  High Current Rectifiers, Solid State Contactors, Smart Relay for CCM, Online Thermography System and Arc Flash Detection and Onno LED Luminaires.
- BASE INDUSTRY, MINING AND STEEL
  Smart Relays for CCMs, Low and Medium Voltage Soft Starters, Solid State Contactors, AC/DC Converters for Electromagnets, High Current Rectifiers, Online Thermography System, Arc Flash Detection and Protection and Onno LED Luminaires.
- OIL COMPANIES
  Smart Relays for CCMs, Static Excitation, Low and Medium Voltage Soft Starters, Solid State Contactors, Online Thermography System, Arc Flash Detection and Protection and Onno LED Luminaires.
- PANEL BUILDERS
  Smart Relays for CCMs, Online Thermography, Arc Flash Detection and Protection Systems, Semiconductors, Power Supplies and Onno LED Luminaires.

Also check out ZYGGOT Tube Network Thermography

SINGLE CABLE / EASY TO INSTALL

PREDICTIVE / DIFFERENTIAL PROTECTION

COMPLIANCE WITH SAFETY STANDARDS

PREVENTS OPENING OF THE PANEL / PREVENTS CATASTROPHIC FAILURES

DOES NOT NEED CONVENTIONAL THERMOGRAPHY / ALSO MEASURES AIR TEMP.

WITHOUT CONTACT / NETWORKED COMMUNICATION

LEARN MORE!

ZYGGOT ARC

ARC FLASH PROTECTION SYSTEM

- **Low Cost // Up to 50 sensors per relay.**
- **Innovative in the market // Faster (300 uS)**
- **Ultraviolet arc detection**
- **Does not operate with ambient light (False Alarm)**
- **No need for current reading**

United States - Houston, TX
2929 Allen Parkway, Suite 200, Houston, 77019
+55 (19) 3301-6900

Brasil - Piracicaba, SP
Rua Phelipe Zaidan Maluf, 450 - Distrito Industrial Unileste
+55 (19) 98124-6974 // (19) 3301-6900

vendas@varixx.com

WORLWIDE
Distributors and Representatives in more than 15 countries

varixx
ALWAYS AN ORIGINAL IDEA

@Varixxbrasil
@varixxcompany
Varixx Indústria Eletrônica
www.varixx.com
www.varixx.com.br

Representative/Distributor:

ZYGGOT THERMOGRAPHY

OFFPRINT ZYGGOT RADDIA TS V14 BUILD 50 ENG June 2025