



USER MANUAL

SPY IP



10486F

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I. PRESENTATION OF THE SPY IP




1) Presentation

The SPY IP has been designed to monitor and record simultaneously up to 4 different parameters from either analog, logical, or digital sensors. The device communicates with the Sirius Operating Software over the Ethernet network.

2) Equipment

- 1 SPY IP recorder
- 1 Wall mounting bracket
- 1 Ethernet cable
- 1 Power supply for VDC versions

3) Symbols

| | |
|--|---|
|  | RECYCLING: do not throw into the household waste bin. Comply with local regulations for recycling and waste disposal. |
|  | POWER SUPPLY: this device is powered with 9VDC-650mA from an 230 VAC adapter or from the Power over Ethernet connection (POE). Comply with safety rules regarding electricity. Make sure that the electrical installation complies with current regulations. |
|  | CE MARKING: this device complies with EU legislation for electric security, inflammability, disturbing radiation emission and immunity to surrounding electric disturbances |

II. INSTALLATION INSTRUCTIONS

1) Location

The SPY IP recorder features a backlit touchscreen. It should be placed:

- at approx. 1.5m above the ground in order to be able to see the touchscreen without difficulties,
- in a central position to the measurement points taking into account the length of the probes,
- within reach of a Power Ethernet socket.

Also provide for a power outlet according to safety rules and legislation relatively close to the powered devices.

Warning:



For use with POE power, the source of this power must be strictly in accordance with safety requirements.

In general, JRI disclaims all liability with respect to damages arising out of or in connection with any use other than those recommended in this manual.

2) Installation

The SPY IP is a Plug-and-Play device which connects directly to the Ethernet network. It is factory set in DHCP mode. It is compatible with the Sirius Storage operating software which sends UDP broadcast packets at regular intervals. When Sirius Storage detects a new device, it is automatically installed and the settings of the device are read.

However, in order to ensure that the installation is carried out without any problems, the following requirements and rules should be met:

Network Requirements and Configuration

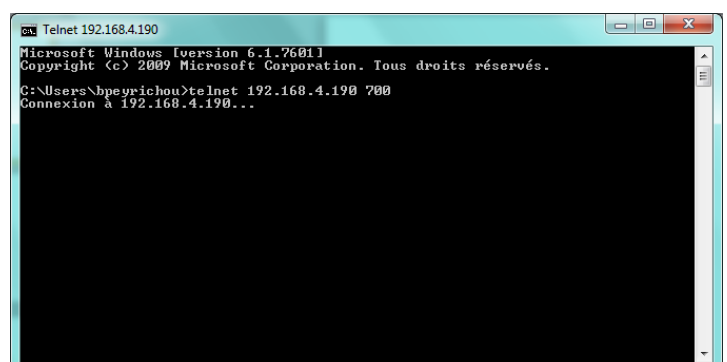
- UDP 2362 and TCP 700 ports should be open.
- The network routers must accept the UDP broadcast.
- A DHCP server must be available.

Network Installation Rules

- There are three ways to install the SPY IP: **DHCP** mode, **static IP address** mode, and **DHCP reservation** mode.
We recommend the 3rd solution. In order to configure DHCP reservations you must provide the network administrator with the MAC addresses of the devices. He can then reserve the appropriate IP addresses and associate them with the MAC addresses. Devices with a reserved IP address always have the same IP address, but still receive updated configuration information from the DHCP server.
- If the UDP broadcast is not allowed, you must carry out a manual installation on Sirius Storage using the IP address provided by the DHCP server and the serial number of the SPY IP.
- If the UDP and TCP ports are used by another application, ask the network administrator for new ports and change them on the SPY IP.
- If the network does not support DHCP, the network administrator must provide you with a static IP address as well as the gateway address for each device, so that you can configure the SPY IP.
- We recommend that you disable the automatic addition of devices when the installation of all devices is complete.

Troubleshooting

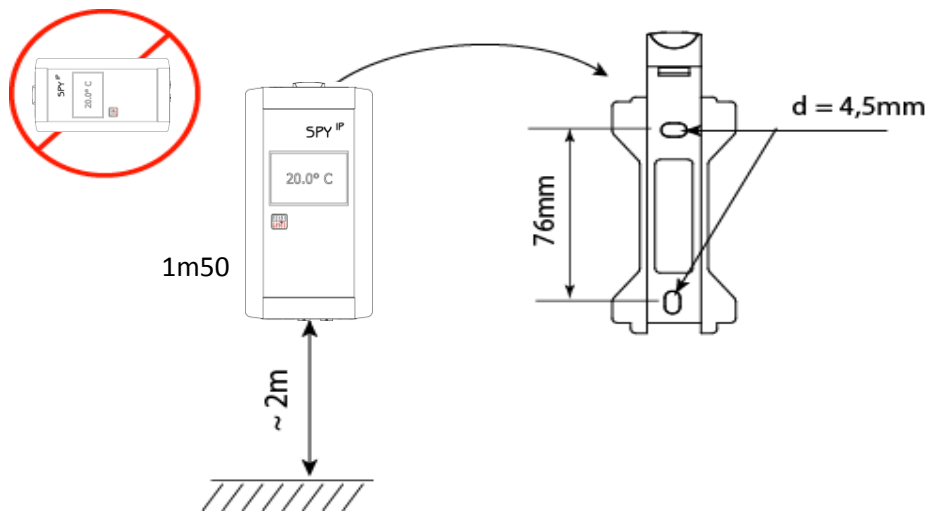
- Check the proper functioning of the Green and Yellow LEDs on the Ethernet connector to make sure that the Ethernet port is enabled.
- Make sure that the configuration of the firewall allows traffic on the required ports.
- Check the SPY IP via the touch screen to verify the IP address and the connection to the Sirius server.
- Use check tools to make sure that the device is connected and the ports are open. We recommend to run the TELNET command to test the network communication (the ping command is not powerful enough): Disable the Sirius communication task, plug in the SPY IP and enter the "Telnet@IP@700" command. The following window will open if access is successful.



```
Telnet 192.168.4.190
Microsoft Windows [version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. Tous droits réservés.
C:\Users\hpeyrichou>telnet 192.168.4.190 700
Connexion à 192.168.4.190...
```

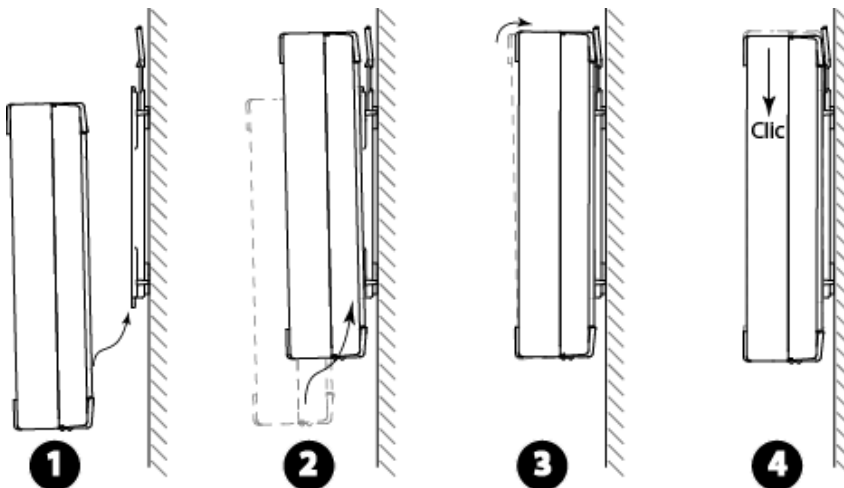
- Check that the network devices (switches, routers and firewalls) are programmed correctly. To carry out an automatic installation, they must be able to pass UDP packets and allow the broadcast function.
- If the network is a VPN network, UDP packets are never transmitted and you must carry out a manual installation.
- If the manual installation fails, make sure that the internal serial number matches the serial number printed on the label of the SPY IP.
- Check the lease time set in the DHCP server. Favour a short lease time to renew the IP addresses of disconnected devices.

3) Installation of the wall mounting bracket

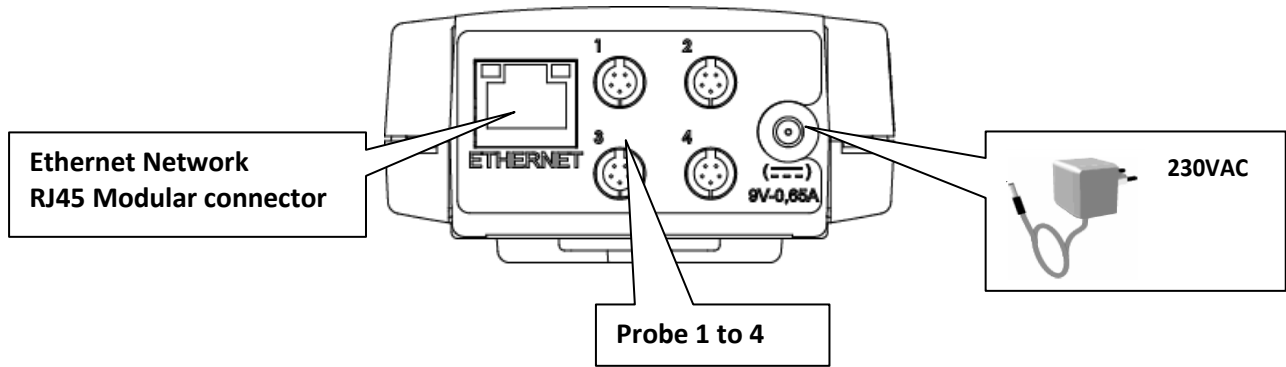


4) Additional information

a) Installation



b) Connections

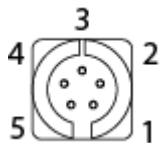


The Spy IP 4 is provided with inlets (4 connectors) for measuring 4 physical parameters simultaneously.

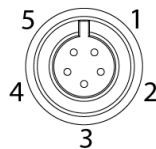
In order to measure temperature and humidity with TH Digital probes, you must:

- Connect the probes to the connectors 1 and / or 3
- Declare in Sirius measures T ° on channels 1 and / or 3
- Declare in Sirius measures RH% on channels 2 and / or 4.

c) Identification of the connectors



Male plug end
on the SPY IP

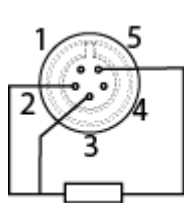


Female connector on
the sensor cable
(front view)

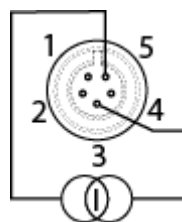
- | | |
|---|---|
| 1 | N/C |
| 2 | Output for resistive sensors |
| 3 | Analog input for resistance, voltage, or current |
| 4 | Logical input for impulse or frequency Dry contact input |
| 5 | Masse |

d) Wiring

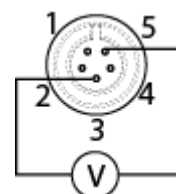
Rear view of the connectors



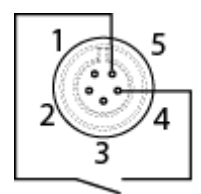
Resistive sensor
input



4-20mA
input

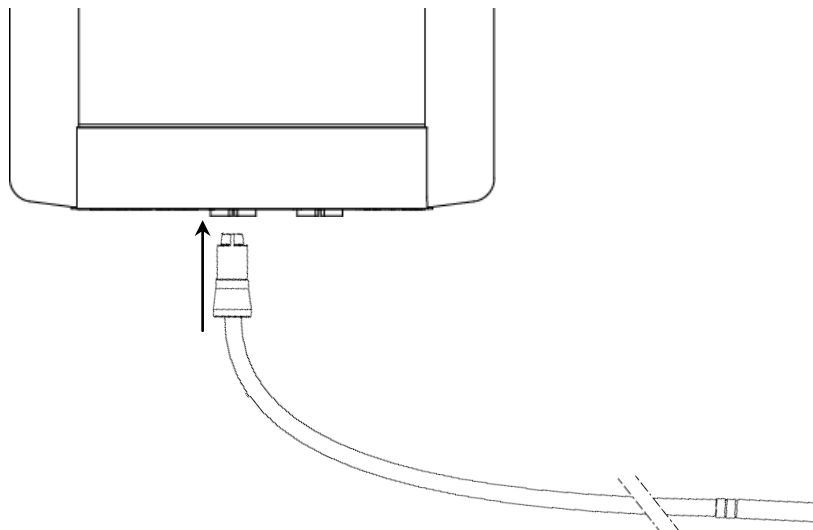


0-1V
Voltage input



Impulse or
frequency input

e) **Connecting the probes**



JRI recommends using the cable with the reference number 00949 for connecting equipment which is not provided with a compatible socket

f) **Battery backup:**

Minimum battery backup time is 6 hours with a 3.6V -730 mAh rechargeable battery.

III. CHARACTERISTICS

| | |
|---------------------------------------|---|
| Operating Range | 0+40°C 0-90%RH non-condensing |
| Storage temperature | 0 + 80°C |
| Number of Input (connector) | 1 Digital or 4 Digital / Analog |
| Number of channels | 2 or 4 |
| Input types | Digital/PT100/PT1000/4-20mA/0-1V/ ON-OFF mixable |
| PT100 input | |
| measurement range: | -200°C to +300°C (*) |
| resolution: | 0,01°C |
| accuracy (without probe): | ± 0,1°C from -20°C to +60°C ±0,2°C from -100°C to -20°C and from +60°C to +200°C ± 0,5°C beyond |
| Digital T input | Depending on the type of probe (SPY RF range) |
| measurement range: | -40 +85°C / -200 – 0°C (Low T° digital sensor) |
| resolution: | 0,1°C / 0,01°C (Low T° digital sensor) |
| accuracy - standard probe: | ±0.3°C from -20°C to +30°C and ±0.5°C outside |
| accuracy - probe for incubators: | ±0.2°C from +35°C to +46°C |
| accuracy - low T° digital sensor: | ±0.2°C from -20°C to 0°C and ±0.5°C outside |
| TH Metal digital input (=2 channels) | |
| <i>Temperature:</i> | |
| Measurement range: | - 40°C to +85°C |
| resolution: | 0,01°C |
| exactitude (probe alone): | ± 0,2°C (from -20°C to +50°C) ± 0,4°C outside |
| <i>Humidity:</i> | |
| Measurement range: | 0 à 100% |
| resolution : | 0,01% |
| accuracy (probe alone): | ±2% (from 20% to 80%) ±3,5% outside |
| Current input 0-20 ou 4-20 mA | |
| measurement range: | 0 to 20 mA or 4-20mA |
| resolution: | 0,001 mA |
| accuracy (SPY IP alone): | ± 0,01 mA |
| Voltage input 0-1V | |
| measurement range: | 0 to 1000 mV |
| resolution: | 0,1 mV |
| accuracy (SPY IP alone): | 0,5 mV |
| Frequency input | |
| Measurement range: | 0 to 500 Hz |
| resolution: | 0,5 Hz |
| accuracy (SPY IP alone): | ± 1 Hz |
| Impulse input | |
| measurement range: | 0 to 32 767 |
| resolution: | 1 |
| ON/OFF input | Dry contact or 0-3.3V max |
| Logging interval | 15' (minimum recommended) to 90 min |
| Memory Size | 10 000 measurements per channel |
| Power supply | 9V DC 650mA or via Ethernet (POE) |
| Backup battery | Ni-MH 3.6V – 730mA |
| Battery life | From 4 to 6h |
| Dimensions | 153 x 82 x 35mm |
| IP Classification | IP20 |
| IK Classification | IK03 |
| Protection | Internal fuse 125V – 1A** |
| Compliant with DBT 2004/108/CE | EN 61326-1 (July 2006) |
| Compliant with DBT 2006/42/CE | EN 61010 (January 2011) |

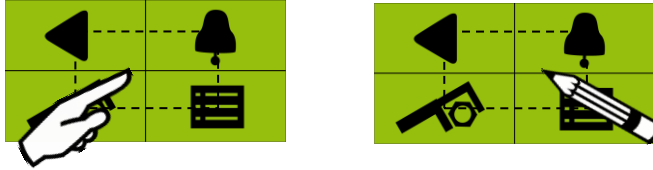
(*) depending on the type of probe (**) replacement by return of the unit to the factory

IV. USING THE SPY IP

1) Principle

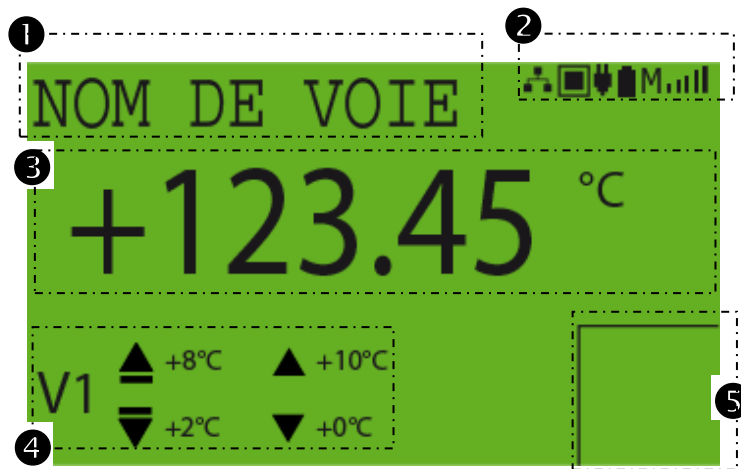
The SPY IP features a touchscreen. To go through the menus or from one zone to another just touch the screen with your finger or a pencil tip.

The touchscreen is divided into 4 zones:



To avoid damaging the touchscreen do not use sharp instruments and do not press hard

2) Touchscreen Description



- ❶ Channel ID
- ❷ Status of the device
- ❸ Measurement and start modes
- ❹ Channel number and alarm thresholds
- ❺ Off modes

3) Symbols








a) Zone 2 - Device Status

- Mains power supply detected:
- No mains power supply:
- Full Memory Stop + memory capacity:
- Rollover memory:
- Network detected:
- No network:







the back light turns off to save battery power





b) Zone 3 – Start modes

- Push button : 
- Programmed start delay :  + date/hh/mm/ss
- Target value :  + value
- Dry contact - Rising edge triggered :  + Channel number
- Dry contact - Falling edge triggered :  + Channel number
- Target value (upward movement) : 
- Target value (downward movement) : 










c) Zone 4 – Alarm Thresholds

- High Pre-Alarm : 
- High Alarm : 
- Low Pre-Alarm : 
- Low Alarm : 

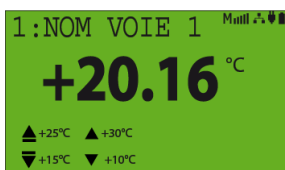
d) Zone 5 – Off Modes

- Push Button : 
- Programmed stop delay : 
- Target value (upward movement) : 
- Target value (downward movement) : 

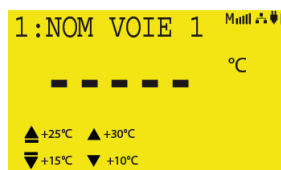
e) Main Menu

-  Back to previous screen/main screen
-  Configuration  Go to next choice
-  Alarm settings  Back to previous choice
-  History  Apply
-  Profile choice  Stop buzzer

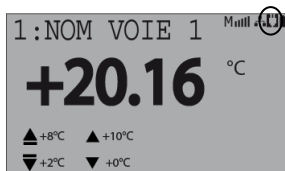
4) Backlight colours



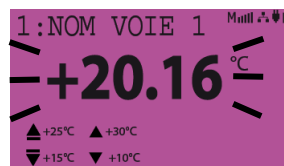
OK



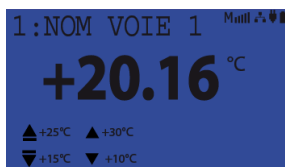
Technical alarm and probe error



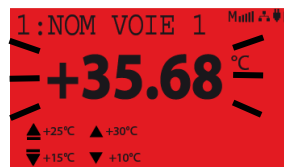
No power supply



Pre-alarm triggered



Inhibited Alarm

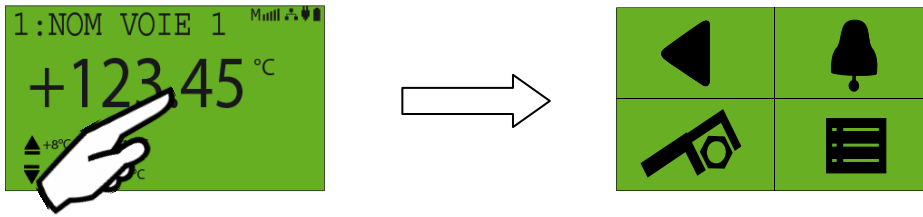


Threshold alarm triggered

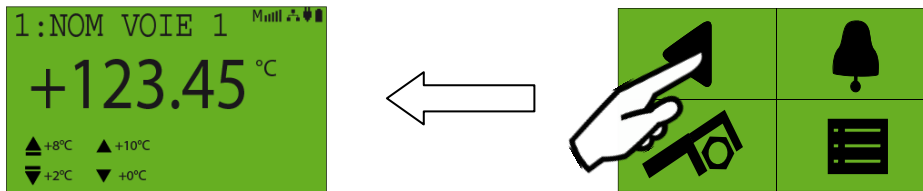
5) Screen Navigation

Note: The SPY IP doesn't feature a keyboard; to go through the menus just touch the screen with your finger or a pencil tip (See « Principle » above).

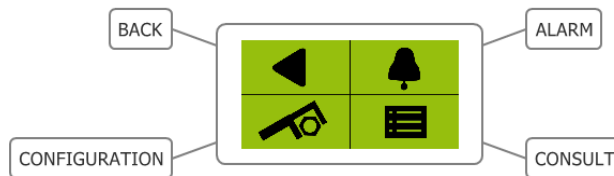
Press the screen to access the main menu



Back to measurement display

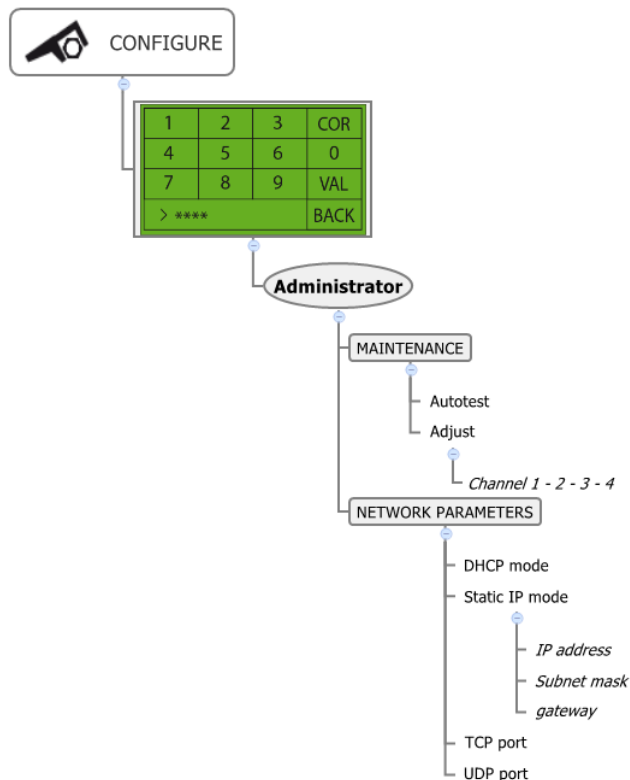


a) Main menu



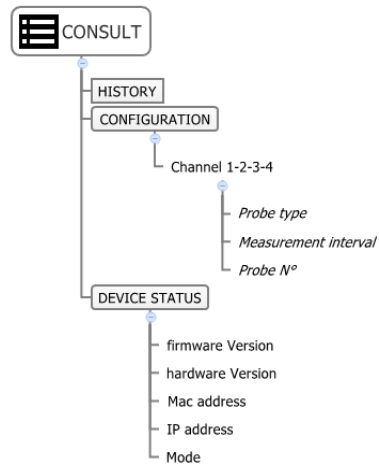
Select the desired zone by pressing the relevant icon

b) Menu Configuration

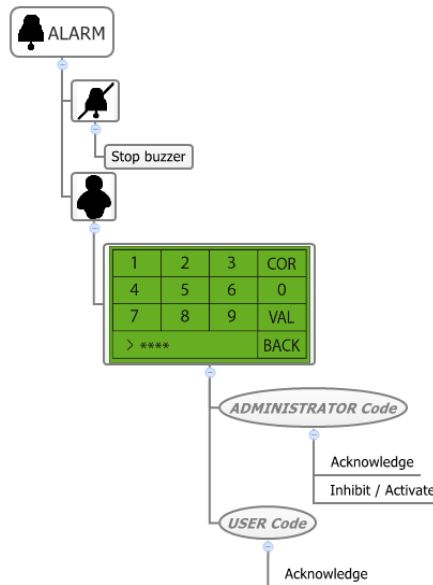


The SPY IP can only be programmed via the Sirius software. However, network parameters and measurement adjusting can be set using the touchscreen

c) Device Status Menu



d) Alarm Management



e) Password Management

The password is used to identify a user. Each password is unique and assigned by Sirius when declaring users, and can not be used twice. This password allows users to identify themselves to perform actions such as alarm acknowledgment from the touchscreen Spy IP. The action will be authorized and stored by Sirius.

The password change will just be made from Sirius.

Default IP Spy has 1 Profile:

Administrator: mdp 1111

V. HOW THE SPY IP WORKS

The different channels of the recorder are completely independent. The functioning of the recorder depends on the configuration of the channels which is carried out using the Sirius software. The main modules to be configured are:

- Start modes
- Off modes
- Logging interval
- Alarm management

1) Start Modes

The different start modes programmed via Sirius are:

Immediate, Pushbutton, Programmed start delay, Target value, Change of state of one of the other channels

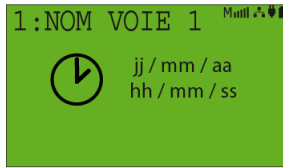
a) **Immediate (default mode in Sirius)**

The channels set with this start mode will start recording as soon as the recorder is plugged in.

b) Programmed Start Delay

The SPY IP displays the date/time at which the relevant measuring channel will start recording.

Caution: This mode is only valid once. If the recording is stopped the SPY IP will indicate that it is awaiting configuration.



c) Push-button

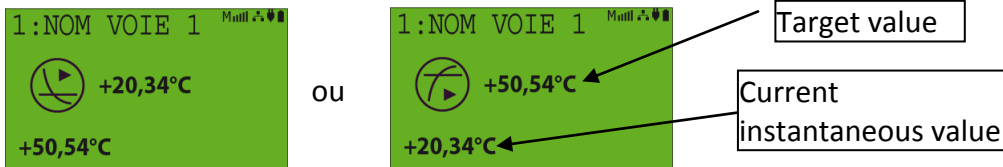
The temperature display screen will show only a push-button for channels being configured in this mode.



When you press the push-button an identification window will become available. Enter the identification code. Once approved by Sirius the relevant measuring channel will start recording. If the operator does not have the rights, the action will be rejected and an error message is displayed for a few seconds before the push-button appears again.

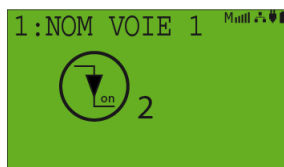
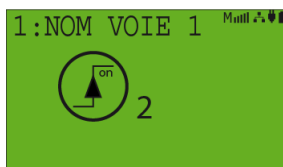
d) Target value reached:

This type of start mode can only be configured channel by channel. The channel will start recording when it has reached its target value taking into account the direction of the variation (upward or downward movement). If a channel has no target value, it is considered as being configured in « immediate » start mode.



e) Dry contact (change of state)

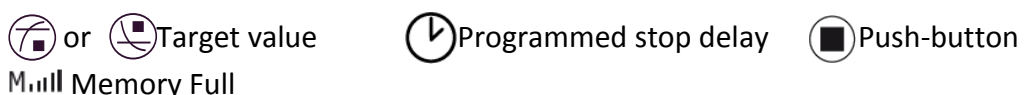
The recording of one channel can be regulated by the change of state of a contact connected to one of the other channels. The screen of the channel waiting to start recording will look like one of the following figures:



*These figures show that channel 1 will start recording when channel 2 changes state (rising or falling edge)
Note: when channel 2 returns to its original state, channel 1 will stop recording.*

2) Off Modes

All « off modes » are compatible with all « start modes » except for « immediate » start mode because as soon as the stop has been requested the SPY IP will start recording again. The programmed « off mode » will appear in the bottom right-hand corner (zone 5)

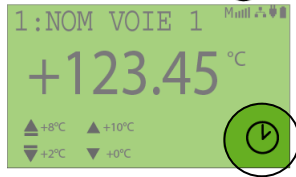


a) **None**

When this mode is selected the channel will record without interruption. The memory will behave as if it were in rollover mode i.e. once the memory is full the oldest data will gradually be overwritten by new data.

b) **Programmed Stop Delay**

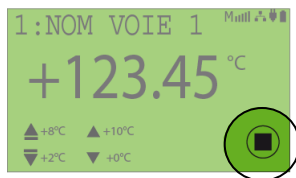
All the channels of the SPY IP will stop recording simultaneously at a set date/time. This picto will appear ⌚ in the bottom right-hand corner of the screen.



When you press this zone the programmed stop date/time will appear.

c) **Push-button**

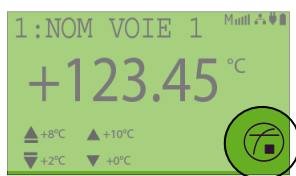
When the SPY IP is recording this picto ■ will appear in the bottom right-hand corner of the screen (zone 5). When you press the button an authentication dialog box will appear prompting the operator to enter his code. After authentication by Sirius the relevant channel will stop recording. If the operator hasn't got the rights the request will be rejected and the channel will continue recording.



d) **Target value**

This « off mode » can only be used and configured channel by channel. The channel will stop recording when it has reached its target value taking into account the direction of the variation (upward or downward movement).

Depending on the configuration either this button ⌚ or this one ⌚ will appear in bottom right hand corner of the screen.



When you press the button, the target value which has been programmed to stop the recording will display.

If a channel has not been configured with a target value, it is configured like in « rollover memory » mode and nothing will be displayed in zone 5 (BP).

e) **Immediate**

This command is only accessible in Sirius and stops the recording of all the channels. The SPY IP switches all channels to “push-button” off mode.

f) **Memory full**

The measuring channels configured with this mode will stop recording when their memory is full. The following message will appear: "MEMORY FULL".

3) Memory management

The SPY IP can manage its memory in two different ways: Memory full and Rollover Memory. In « Memory full » mode the recording will stop as soon as the memory is full. In « Rollover Memory » mode, the oldest data are gradually overwritten by new data. These modes are managed channel by channel.

4) Alarm Management

- The **SPY IP** detects and manages the alarms in real time regardless of the logging interval. In this case it is possible to go on with the recording by speeding up the pace of measurement to increase the number of points recorded during this event.
- Le SPY IP manages different alarm statuses which are displayed on the screen using different colour codes (see 4 p8 IV-). The backlight is identical for all the channels and managed according to the following priorities:

Threshold Alarm (Red)

Technical Alarm (Yellow)

Pre-Alarm (Violet)


Alarm inhibition (Blue)

OK (Green)

f.ex.: if one channel is in threshold alarm and another channel in pre-alarm, then the backlight colour will be the same for all the channels according to the most important even. In this case it will be RED.

- The threshold alarms can be either instantaneous or continuous. In “instantaneous” mode they will disappear if the origin of the alarm triggering disappears, whereas in “continuous” mode they will persist until they have been acknowledged.

5) Password Management

When the operator is prompted to identify himself, the identification is sent to Sirius for validation. If accepted it stays active as long as the operator uses the touchscreen whatever the operation. Identification is void if the touch screen is not used for a period of 20 seconds. You can also disable the entered code by going back to the measurement display by pressing this icon 

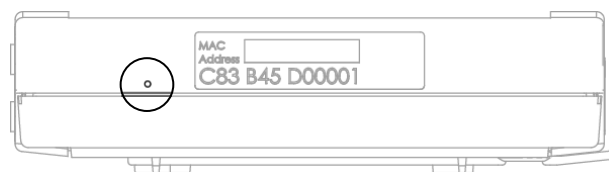
But if the password is rejected by Sirius the message "unknown code" will appear before returning to the display prior to the request for identification.

VI. CLEANING

You can clean the device by using a soft cloth duster. DO NOT use water!

VII. RESETTING

To reset the device, insert a straightened paper clip or something similar into the small hole on the right side of the SPY IP.



VIII. WARRANTY

JRI products carry a one year warranty and guarantee against defects in their components or workmanship. During this period if any product supplied by the Company proves on inspection to be defective, the Company will at its own option replace the same or refund to the Buyer the price of the product.

In no circumstances will JRI' liability exceed the price of the product paid by the buyer or the cost of replacement.

JRI shall not in any event be liable to the Buyer for any indirect or consequential loss or damage costs or expenses whatsoever which might arise out of or in connection with the supply of the product or its consequent use.

Consequently, the products warrantee and guarantee specified above, does not cover damage caused by fair wear and tear, abnormal storage conditions, incorrect use, accidental misuse, abuse, neglect, misapplication or modification, or use with non-JRI' hardware/software. No warranty of fitness for a particular purpose is offered and the user assumes the entire risk of using the product.

In line with our policy of continuous development, we reserve the right to amend our product specification without prior notice.

IX. MAINTENANCE CONTRACT

With our maintenance contract you will benefit for a minimal period of 2 years from the following advantages:

- material verification once or twice a year
- warranty extension
- telemaintenance
- telephone assistance +33 3 63 15 80 07 (0,282 € /min)
- material replacement on site or by return to our production unit
- metrological certificates: verification of measurement accuracy
- access to new software versions and updates
- on-site intervention within 3 open days after problem identification by our experts.

X. ENVIRONMENT PROTECTION

JRI recommends throwing away the measuring and recording devices which are unserviceable and/or beyond repair in a way that is appropriate to environment protection. Insofar as the production of waste cannot be avoided, it is best to re-use them by proceeding with adapted recycling depending on the material used and considering the environment protection.

RoHS Directive

The ROHS European Directive rules and limits the presence of hazardous substances in electrical and electronic equipment (EEE).

In article 2, the scope of this Directive excludes "9. Monitoring and Control Instruments" and our products are part of this category.

However, our company has decided to apply the whole disposition of this Directive for all our new electronic devices which will comply with the 2002/95/CE Directive.