13. Diagnostics

13.1 Troubleshooting

13.1.1 Reset alarm

The alarms are not saved. To deactivate an alarm, the cause that generated it must be removed.

CAUTION! The controller automatically restarts as soon as the alarm condition is cleared.

13.1.2 Common problems

Following are the most common problems that are not due to faults.

Problem	Cause	Solution
The configuration cannot be changed	The **ENTER** and **ESCAPE** keys were released before the "-- Operation Mode -- Now Available" message appeared Or the **ENTER** and **ESCAPE** keys have not been pressed or released simultaneously.	Correctly perform the procedure. See "Select a configuration" on page 70.
The keys do not respond when pressed	The microprocessor is executing complex algorithms.	Wait a few seconds and retry.
	Communication with one or more EC fans is absent	Standby. The response times may experience delays.
The number of fans mapped (Map**) is different from the number of fans on (**Run**)**	The map is not updated for the current situation	Start the **Existing fans map acquisition** function, see "Update the fan map" on page 90.
	Fan previously mapped off or cables not connected to it	Check the status and connections of the fan.
The "Function not allowed" message appears	An unavailable menu/function has been accessed (i.e., menu 5: PID Parameters with non-PID control mode)	Press the **ESCAPE** key.

13.1.3 Alarm and warning messages

The controller manages two levels of messages:

- alarm messages: these indicate an error or a malfunction on the controller and generate a change in the speed command of the fans directly from the controller.
- caution messages: present only if the regulator communicates with the EC fans by Modbus. Indicates an error or a malfunction of the EC fans. No changes in the speed control are performed by the controller. This management is delegated directly to the EC fan involved.

13.1.4 Alarm signal

The presence of an error or a malfunction of the controller is communicated in the following manner:

- The display flashes and the relative message appears in the first line.

  ***Note**: the message appears only if the controller is in working mode. If during this programming step, it only appears at the output of this step.*

- The controller sends the emergency speed command to the EC fans, if set; otherwise, the fans continue to operate at the last speed command received.
- Relay **RL1** is de-energized and the **FAIL** LED turns on.

13.1.5 Alarm messages

***Note**: the priority with which the messages are displayed is equal to the order they are shown in the table. A priority alarm is displayed before less important alarms.*

Possible alarm messages are shown below:

Message	Cause	Solution
Controller failure	Configuration parameter error.	Reload the default configuration
Alarm: No Fans The map is cleared	No EC fan assigned. The map is cleared.	Generate the map of the fans present with the function **13: EC Fan functions** > **Existing Fans Map Acquisition**. Assign the address to the fans and load the map with the function **13: EC Fan functions** > **Total Addressing Procedure**.
All Fans in Error	All EC fans present are in error. No fan mapped on the RS485 bus responds.	Enter the EC fan page and check which error occurred. For information on the alarm messages, please refer to the EC fan documentation. Check the connections to serial RS485.
No Answer from Fans	Modbus communication with EC fans not possible due to: ■ no power supply to the EC fans. ■ fault on one or more EC fans. ■ connection error or cut-off of the RS485 connection cable.	Check the cause of the Modbus communication interruption.
T.K. Alarm open	External overheat protection contact open **TK** (with SW1-3 = Off)	Make sure the connected circuit breakers are closed and correctly connected in series. Make sure the wires are correctly connected to the **TK** contact and that the screws are tight.
Board Overheat	Regulation stopped due to board exceeding the maximum working temperature (85 °C)	Check that the controller is installed in a ventilated room away from direct sunlight. Make sure room temperature is under 50°C. Make sure the controller is correctly installed, see "Wall mount" on page 25.
Under Range or Open	Input signal under minimum value. See "Minimum and maximum limits for inputs IN1 and IN2" on page 105	Make sure the set configuration is suited to the control signal used. Make sure the transducer/sensor/probe is correctly connected.
Over Range or Short	Input higher than maximum value. See "Minimum and maximum limits for inputs IN1 and IN2" on page 105	Make sure the input used is foreseen by the configuration in use (parameter **C0**). Make sure the transducer/sensor/prove is in good conditions and working,

13.1.6 Minimum and maximum limits for inputs IN1 and IN2

Following are the minimum and maximum limits with a precision of ±5%.

Configuration	Minimum limit	Maximum limit	Unit of measure
rS-020	-	> 23.5	mA
rS-010	-	> 11	V dc
rS-420	< 2	> 23.5	mA
rtE-01	< -24	> 100	°C
rtE-02	< 11	> 100	°C
rPr420	< 2	> 23.5	mA
rPr015 (*)	< 2	> 23.5	mA
rPr025 (*)	< 2	> 23.5	mA

Configuration	Minimum limit	Maximum limit	Unit of measure
rPr030 (*)	< 2	> 23.5	mA
rPr045 (*)	< 2	> 23.5	mA
rPr050 (*)	< 2	> 23.5	mA
rUu-05	-	> 5.5	V dc
rPu030 (*)	-	> 5.5	V dc
rUu010	-	> 11	V dc

***(*)**: the value appears in pressure (bar) on the display.*

13.1.7 Alarm signal

The presence of an error or a malfunction of the EC fans is communicated on the controller in the following manner:

- The message appears on the first line of the display.

  ***Note**: the message appears only if the controller is in working mode. If during this programming step, it only appears at the output of this step.*

- Relay **RL2** is de-energized.

  Note: for the messages "**---Fan error---**", "**Fan warning**", and "**SlaveSafe KO**", the relay opens with a delay time of about 60 seconds.

13.1.8 Warning messages

***Note**: the priority with which the messages are displayed is equal to the order they are shown in the table. A priority alarm is displayed before less important alarms.*

Possible warning messages are shown below:

Message	Cause	Solution
TK Warning	External overheat protection contact open TK (with SW1-3 = ON).	Check the cause of opening contact TK.
--- Fan Error ---	One or more EC in alarm conditions.	Enter the EC fan page and check which error occurred. For information on the alarm messages, please refer to the EC fan documentation.
Fan Warning	Warning signal for one or more EC fans.	Enter the EC fan page and check which error occurred. For information on the warning messages, please refer to the EC fan documentation.
SlaveSafe KO	4-20 mA signal at input IN3 < 2 mA or >23 mA, see "Switching of setpoint following the ambient temperature from IN3 (Bank Switch)" on page 57.	Check the connections to IN3 Check for and check the value of the 4-20 mA signal at input IN3