

8.3. PROCEDURE FOR EMERGENCY SHUT-DOWN

The device shuts down if the Start button is kept pressed in for 15 seconds.

If the Start button is no longer functioning, disconnect the internal battery and the mains power connection.

8.4. ALARM MESSAGES

The list of alarm messages is linked to the software version used.

To know which version is in use, refer to the user manual and the technical note indicating the evolutions of to the used software version.

8.5. DIAGNOSTIC AID

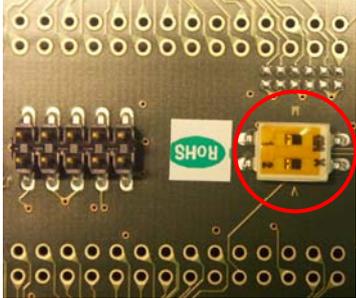
The table below lists all the technical alarms programmed on **MONNAL T75**, and for each message indicates the possible causes which might trigger the alarm and the actions to be initiated to rectify the problem.

For each alarm, the actions to be implemented are listed in order of implementation. If the fault persists once the 1st item has been performed, move on to the next recommended action, and so on. If the fault persists despite checking all the points listed, please contact our technical department.

The table also indicates the alarms drawn by the white box. The procedure of download of the white box appears in the *paragraph 6*.

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
2	Expiratory branch might be obstructed !!!	HIGH	1) Analyse the user configuration (Pmax set too low, blocked expiration filter) and advise users, if necessary, to be vigilant for blockage to expiration filters. 2) Check the expiratory membrane (poor positioning, sticking, etc.) and replace if necessary.	YES
3	Error detected !!! Contact the tech. department	HIGH	1) Check connections (card to card lead, card connector, signs of oxidation on contacts, etc.) and replace the defective element if necessary. 2) Replace the power feed card. 3) Replace the microprocessor card.	NO
4	Error detected !!! Contact the tech. department	HIGH	1) Check that the air intake filter is not clogged up. If so, replace it. 2) Check connections (blower lead, card connector, etc.) and replace the defective element if necessary. 3) Replace the blower. 4) Replace the microprocessor card.	YES

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
5	Error detected !!! Contact the tech. department	HIGH	1) Check connections (inspiratory valve lead, card connector, etc.) and replace the defective element if necessary. 2) Replace the inspiratory valve. 3) Replace the microprocessor card.	YES
6	Error detected !!! Contact the tech. department	HIGH	Initiate automatic tests, and if the alarm persists: 1) Check connections (SV connector, etc.) 2) Check whether the silicon hoses on the expiratory membrane and on the pressure sensor are fitted and not stuck. 3) Replace the SV unit. 4) Replace the microprocessor card.	YES
7	Error detected !!! Contact the tech. department	HIGH	1) Collect details on the conditions at the time of use when the fault occurred and contact our technical department. 2) Replace the microprocessor card.	YES
8	Error detected !!! Contact the tech. department	HIGH	1) Restart the device in accordance with the procedure described in § 8.3 (mains power, battery) and check whether the alarm continues. If the alarm message disappears, contact our technical department . 2) Check connections (power feed communications lead, card connector, etc.) and replace the defective element if necessary. 3) In the event of updating the power feed software, perform the software download again. 4) Replace the power feed card. 5) Replace the microprocessor card.	NO
9	Error detected !!! Contact the tech. department	HIGH	Contact our technical department.	YES

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
12	Error detected !!! Contact the tech. department	HIGH	<p>1) Restart the device using the procedure described in § 8.3 (button). If the alarm disappears, contact our technical department.</p> <p>2) Check that the position of the switches on the microprocessor card is correct and that the software version is valid (if the defect appeared after a software downloading version).</p>  <p style="text-align: right;">switches</p> <p>3) Replace the microprocessor card.</p>	NO
13	Error detected !!! Contact the tech. department	HIGH	<p>1) Check connections (back-lighting lead, converter card lead, interconnection card lead, front face ribbon, card connector, etc.) and replace the defective element if necessary.</p> <p>2) Replace the back-lighting.</p> <p>3) Replace the back-lighting converter card.</p> <p>4) Replace the interconnection card.</p>	NO
14	Error detected !!! Contact the tech. department	HIGH	<p>1) Check connections (back-lighting lead, converter card lead, interconnection card lead, front face ribbon, card connector, etc.) and replace the defective element if necessary.</p> <p>2) Replace the back-lighting.</p> <p>3) Replace the back-lighting converter card.</p> <p>4) Replace the interconnection card.</p>	NO
15	Error detected !!! Contact the tech. department	HIGH	<p>1) Restart the device using the procedure described in § 8.3 (button), if it is a fault after updating the software, and change the ventilation setting to a different value.</p> <p>2) Check the voltage on the battery and replace if necessary.</p> <p>3) Check the battery connections.</p> <p>4) Replace the microprocessor card.</p>	NO

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
16	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Restart the device using the procedure described in § 8.3 (button), if it is a fault after updating the software, and change the alarm trigger setting to a different value. 2) Check the voltage on the battery and replace if necessary. 3) Check the battery connections. 4) Replace the microprocessor card. 	NO
19	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Check that the silicon hoses are not stuck. 2) Carry out a calibration on the low pressure sensors. 3) Replace the microprocessor card. 	YES
20	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Investigate for a possible internal leak. 2) Calibrate the flow sensors. 3) Check connections (flow sensor lead, flow filter sensor card connector, etc.) and replace the defective element if necessary. 4) Replace flow sensors. 5) Replace the flow filter sensor card. 6) Replace the microprocessor card. 	YES
21	O ₂ supply pressure too low !!!	HIGH	<ol style="list-style-type: none"> 1) This alarm signals a lack of O₂ feed. If the user has correctly connected the device to a HP source of O₂ (supply network, cylinder, etc.), check that the feed pressure is between 2.8 and 6 bar. 2) Calibrate the O₂ pressure sensor. 	NO
22	O ₂ supply pressure too high !!!	HIGH	<ol style="list-style-type: none"> 1) This alarm signals an O₂ pressure above 7 bar. Check that the feed pressure is between 2.8 and 6 bar. 2) Calibrate the O₂ pressure sensor. 	NO
23	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Check on the conditions at the time of the fault, particularly the type of source (supply network, O₂ cylinder, use of a LP source, etc.) and, if necessary, whether maintenance was being performed on the network. 2) Check connections (O₂ SV, O₂ flow sensor, etc.). 	YES

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
24	Error detected !!! Contact the tech. department	HIGH	Check connections (O ₂ flow sensor lead, flow filter sensor card connector, etc.) and replace the defective element if necessary. It is possible to check the connectors on the sensors by swapping them over and seeing if the phenomenon is reported on a different sensor.	YES
29	Error detected !!! Contact the tech. department	HIGH	1) Check that no foreign body is blocking the cooling fan on the feed side (discharge filter blocked). 2) Check that the cooling fan connector is correctly attached. 3) Replace cooling fans. 4) Replace the microprocessor card.	NO
30	Error detected !!! Contact the tech. department	HIGH	1) Check connections (SV connector, etc.) 2) Check whether the silicon hoses on the expiratory membrane and on the pressure sensor are fitted and not stuck. 3) Replace the SV unit. 4) Replace the microprocessor card.	YES
31	Error detected !!! Contact the tech. department	HIGH	1) Check connections (SV lead, discharge silicone seal stuck or blocked, etc.). 2) Replace the SV unit. 3) Replace the microprocessor card.	YES
32	Error detected !!! Contact the tech. department	HIGH	1) Check connections (SV lead, etc.) 2) Replace the SV unit. 3) Replace the microprocessor card.	NO
33	Error detected !!! Contact the tech. department	HIGH	Replace the microprocessor card.	NO
37	Internal battery unavailable !!! Check battery	HIGH [acknowledgeable]	1) Check connections (battery connector, etc.) 2) Replace the battery. 3) Replace the power feed card.	NO
38	Error detected !!! Contact the tech. department	HIGH	Replace the power feed card.	NO

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
39	Error detected !!! Contact the tech. department	HIGH	1) Check that the alarm is permanent by restarting the device using the procedure described in § 8.3 (button, then mains supply, battery if necessary). If it is not permanent, report the information to our technical department. 2) Check connections (power feed communications lead, card connector, etc.) and replace the defective element if necessary. 3) Replace the power feed card. 4) Replace the microprocessor card.	NO
41	Delivered gases too hot !!!	HIGH	1) Find out about the conditions at the time of the fault (type of ventilation, ambient temperature at the time the fault occurred, etc.). 2) Check the function of the blower fan, and the degree of blockage to the intake and discharge air filters.	NO
42	Error detected !!! Contact the tech. department	HIGH	1) Check that the silicon hose is not stuck. 2) Replace the microprocessor card.	YES
43	Error detected !!! Contact the tech. department	HIGH	1) Check that the silicon hose is not stuck. 2) Replace the microprocessor card.	YES
44	Error detected !!! Contact the tech. department	HIGH	Check connections (patient flow sensor lead, flow filter sensor card connector, etc.) and replace the defective element if necessary. It is possible to check the connectors on the sensors by swapping them over and seeing if the phenomenon is reported on a different sensor.	YES
45	Error detected !!! Contact the tech. department	HIGH	1) If a software version has just been installed or a microprocessor card has just been replaced, calibrate the device. 2) Check the voltage on the battery and replace if necessary, and calibrate. 3) Check the battery connections, and calibrate. 4) Replace the microprocessor card.	NO

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
48	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Use an external meter to check whether the atmospheric pressure is between 700 and 1100 mbar. 2) Calibrate the sensor in maintenance mode. 3) Check that the silicon seal is fitted, that it is not stuck and is attached in the correct place. 4) Replace the microprocessor card. 	YES
49	Restart the automatic tests !!!	HIGH <small>[acknowledgeable]</small>	Restart the automatic tests.	NO
50	Error detected !!! Contact the tech. department	HIGH	Check connections (blower flow sensor lead, flow filter sensor card connector, etc.) and replace the defective element if necessary. It is possible to check the connectors on the sensors by swapping them over and seeing if the phenomenon is reported on a different sensor.	YES
51	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Check connections (O₂ pressure sensor lead, card connector, etc.) and replace the defective element if necessary. 2) Replace the O₂ pressure sensor. 3) Replace the microprocessor card. 	NO
52	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Compare the value for the F_iO₂ delivered with that read by the cell, using an external measuring device. 2) Restart the automatic tests to calibrate the cell. 3) Investigate for a possible internal leak. 4) Check or replace the O₂ cell. 5) Perform maintenance on O₂ and blower flow sensors. 6) Check or replace the O₂ flow sensor and/or its connector and/or the flow filter sensor card. 7) Replace the microprocessor card. 	YES
53	Fi O2 measurement inoperative !!!	HIGH	Restart the automatic tests.	NO
54	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Replace the temperature connector. 2) Replace the microprocessor card. 	NO
55	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Replace the loudspeaker. 2) Replace the microprocessor card. 	NO
56	Error detected !!! Contact the tech. department	HIGH	Replace the microprocessor card.	NO

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
57	Expiratory flow measurement inoperative !!!	HIGH	<ol style="list-style-type: none"> 1) Check the hot wire sensor, and replace if necessary. 2) Check connections (sensor lead, card connector, etc.) and replace the defective element if necessary. 3) Replace the microprocessor card. 	NO
58	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Switch off the machine and restart automatic tests. 2) Replace the microprocessor card. 	NO
61	Error detected !!! Contact the tech. department	HIGH	<ol style="list-style-type: none"> 1) Restart the device in accordance with the procedure described in § 8.3 (button) and check whether the alarm continues. If the alarm message disappears, contact our technical department. 2) Check connections (touchscreen lead, controller card lead, interconnection card lead, card connector, etc.) and replace the defective element if necessary. 3) Replace the touchscreen controller card. 4) Replace the interconnection controller card. 5) Replace the microprocessor card. 	NO
67	Error detected !!! Contact the tech. department	MEDIUM	<ol style="list-style-type: none"> 1) Check connections (blower lead, card connector, etc.) 2) Replace the blower. 3) Replace the microprocessor card. 	NO
68	Error detected !!! Contact the tech. department	MEDIUM	Carry out an automatic test and refer to the alarm message which results.	YES
69	Error detected !!! Contact the tech. department	MEDIUM	<ol style="list-style-type: none"> 1) Check that the silicon hose on the differential pressure sensor (PS2) is fitted and not stuck. 2) Replace the microprocessor card. 	NO
70	Error detected !!! Contact the tech. department	MEDIUM	<ol style="list-style-type: none"> 1) Check the condition of the touchscreen (impulse present, clamped and centred on the lid, etc.) 2) Replace the touchscreen unit. 	NO
72	Error detected !!! Contact the tech. department	MEDIUM	Replace the microprocessor card.	NO

No.	Alarm	Priority	Possible causes triggering the alarm / Actions	White box drawing
81	Error detected !!! Contact the tech. department	LOW	1) Check that no foreign body is blocking the cooling fan on the blower side (discharge filter blocked). 2) Check that the cooling fan connector is correctly attached. 3) Replace cooling fans. 4) Replace the microprocessor card.	NO
82	Error detected !!! Contact the tech. department	LOW	1) Replace the proportional solenoid valve V6. 2) Replace the microprocessor card.	NO
83	Error detected !!! Contact the tech. department	LOW	1) Check the voltage on the battery and replace if necessary. 2) Check the battery connections. 3) Replace the microprocessor card.	NO
84	Error detected !!! Contact the tech. department	LOW	1) Check the voltage on the battery and replace if necessary. 2) Check the battery connections. 3) Replace the microprocessor card.	NO
85	Error detected !!! Contact the tech. department	LOW	1) Check connections (SV lead, etc.) 2) Replace the SV unit. 3) Replace the microprocessor card.	NO
86	Error detected !!! Contact the tech. department	LOW	Replace the microprocessor card.	NO
89	Fi O2 sensor to be soon replaced !	LOW	Restart the automatic tests.	NO
90	Battery maintenance ! Contact the tech. department	LOW	Battery replacement imminent.	NO
91	Did you start the automatic tests with the nebulizer ?	LOW [acknowledgeable]	1) Check whether the Nebulizer was connected to the patient circuit during the automatic tests, and if necessary restart the tests. 2) Check the pressure reducing valve setting (1.2 bar). 3) Check connections (SV nebulization lead, card connector, etc.) 3) Replace the SV unit. 4) Replace the microprocessor card.	NO