

1.1 List of alarms

When an alarm is triggered, two things occur:

- The corresponding *loads* are shut down
- The alarm appears on the *keyboard display*

The alarm message consists of a code with the format "Enn" (where nn is a 2-digit number identifying the type of alarm, such as: E00, E25, E39....).

All possible alarms are listed in the 2 tables below, along with their codes and description (table 1) and the corresponding loads that will be shut down (table 2):

Alarm Table 1

CODE	MESSAGE	DESCRIPTION
E00	Remote off	<ul style="list-style-type: none"> • All <i>loads</i> will be shut down; • Triggered by the digital input configured as "Remote OFF" (refer to <i>digital inputs</i>)
E01	High pressure circuit 1	<ul style="list-style-type: none"> • <i>Compressors</i> in circuit 1 will be shut down; • Triggered by the digital input configured as "High pressure circuit 1" (refer to <i>digital inputs</i>)
E02	Low pressure circuit 1	<ul style="list-style-type: none"> • <i>Compressors</i> in circuit 1 will be shut down; also condenser fans if condensation is separate for the 2 circuits (refer to <i>combined or separate condensation</i>); • Triggered by the digital input configured as "Low pressure circuit 1" (refer to <i>digital inputs</i>); • Automatically <i>reset</i> unless <i>alarm events per hour</i> reaches the value of parameter <i>Pa A02</i>, after which manually <i>reset</i>; • Inactive during timer <i>Pa A01</i> after compressor on or reversal of 4-way valve (<i>reversing valve</i>) in circuit 1
E03	Thermal switch protection compressor 1	<ul style="list-style-type: none"> • Compressor 1 will be shut down; • Triggered by the digital input configured as "Thermal switch compressor 1" (refer to <i>digital inputs</i>); • Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A07</i>, after which manually <i>reset</i>; • Inactive during timer <i>Pa A08</i> after compressor on.
E04	Thermal switch protection condenser fan circuit 1	<ul style="list-style-type: none"> • Fans and <i>compressors</i> in circuit 1 will be shut down; if the 2 circuits are set up for combined condensation, (refer to <i>combined or separate condensation compressors</i> in circuit 2 will also be shut down; • Triggered by the digital input configured as "Thermal switch fan circuit 1" (refer to <i>digital inputs</i>); • Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A09</i>, after which manually <i>reset</i>;
E05	Anti-freeze circuit 1	<ul style="list-style-type: none"> • Fans and <i>compressors</i> in circuit 1 will be shut down; • Active if analogue probe ST2 (refer to <i>analogue inputs</i>) is configured as anti-freeze probe (<i>Pa H12</i> = 1); • Triggered when probe ST2 detects a value lower than <i>Pa A11</i>; • Turned off if probe ST2 detects a value greater than <i>Pa A11</i> + <i>Pa A12</i>; • Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A13</i>, after which manually <i>reset</i>; • Inactive during timer <i>Pa A10</i> after Energy 400 is turned on with the On-OFF key (refer to <i>keyboard</i>) or from the digital input ON-OFF (refer to <i>digital inputs</i>) or when <i>heating</i> mode is started.
E06	Probe ST2 fault	<ul style="list-style-type: none"> • All <i>loads</i> will be shut down; • Triggered if probe ST2, configured as an analogue input, shorts or is cut off or probe limits are exceeded (-50°C.. 100°C).
E07	Probe ST3 fault	<ul style="list-style-type: none"> • All <i>loads</i> will be shut down; • Triggered if probe ST3, configured as an analogue input, shorts or is cut off or probe limits are exceeded (-50°C.. 100°C).
E09	High pressure compressor 1	<ul style="list-style-type: none"> • Compressor 1 will be shut down; • Triggered by the digital input configured as "High pressure compressor 1" (refer to <i>digital inputs</i>); • Always manually <i>reset</i>
E11	High pressure circuit 1 on analog input	<ul style="list-style-type: none"> • <i>Compressors</i> in circuit 1 will be shut down; • Active if analog probe ST3 or ST4 (refer to analog inputs) is configured as pressure probe; • Active when the pressure probe (ST3/ST4) detects a value greater then <i>Pa A14</i>; • Inactive if the probe detects a value lower then <i>Pa A14</i> - <i>Pa A15</i>;
E12	Low pressure circuit 1 on analog input	<ul style="list-style-type: none"> • <i>Compressors</i> in circuit 1 will be shut down, as well as condenser fans if the 2 circuits have separate condensation (refer to <i>combined or separate condensation</i>); • Active if the analog probe ST6 (refer to analog inputs) is configured as pressure probe; • Active when the pressure probe ST6 detects a value lower then <i>Pa A17</i>; • Inactive if the probe detects a value greater then <i>Pa A17</i> - <i>Pa</i>

CODE	MESSAGE	DESCRIPTION
		<p><i>A18</i>;</p> <ul style="list-style-type: none"> Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A19</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A16</i> after compressor on or reversal of 4-way valve (<i>reversing valve</i>) of circuit 1
E13	Thermal switch protection compressor 2	<ul style="list-style-type: none"> Compressor 2 will be shut down; Triggered by the digital input configured as "Thermal switch compressor 2" (refer to <i>digital inputs</i>); Automatically <i>reset</i> until <i>alarm events per hour</i> reach the value of parameter <i>Pa A07</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A08</i> after compressor is turned on.
E19	High pressure compressor 2	<ul style="list-style-type: none"> Compressor 2 will be shut down; Triggered by the digital input configured as "High pressure compressor 1" (refer to <i>digital inputs</i>); Always manually <i>reset</i>
E21	High pressure circuit 2	<ul style="list-style-type: none"> <i>Compressors</i> in circuit 2 will be shut down; Triggered by the digital input configured as "High pressure circuit 2" (refer to <i>digital inputs</i>)
E22	Low pressure circuit 2	<ul style="list-style-type: none"> <i>Compressors</i> in circuit 2 will be shut down, as well as condenser fans if the 2 circuits have separate condensation (refer to <i>combined or separate condensation</i>); Triggered by the digital input configured as "Low pressure circuit 2" (refer to <i>digital inputs</i>); Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A02</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A01</i> after compressor on or reversal of 4-way valve (<i>reversing valve</i>) of <i>circuit 2</i>
E23	Thermal switch protection compressor 3	<ul style="list-style-type: none"> Compressor 3 will be shut down; Triggered by the digital input configured as "Thermal switch compressor 3" (refer to <i>digital inputs</i>); Automatically <i>reset</i> until <i>alarm events per hour</i> reach value of parameter <i>Pa A07</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A08</i> after compressor on.
E24	Thermal switch protection condenser fan circuit 2	<ul style="list-style-type: none"> Fans and <i>compressors</i> in circuit 2 will be shut down; if the 2 circuits have combined condensation (refer to <i>combined or separate condensation</i>) the <i>compressors</i> in circuit 1 will also be shut down; Triggered by the digital input configured as "Thermal switch circuit 2 fan" (refer to <i>digital inputs</i>); Automatically <i>reset</i> until <i>alarm events per hour</i> reaches value of parameter <i>Pa A09</i>, after which manually <i>reset</i>;
E25	Anti-freeze circuit 2	<ul style="list-style-type: none"> Fans and <i>compressors</i> will be shut down; Active if analogue probe ST5 (refer to <i>analogue inputs</i>) is configured as anti-freeze probe (<i>Pa H15</i> = 1); Triggered when probe ST5 detects a value below <i>Pa A11</i>; Turns off when probe ST5 detects a value above <i>Pa A11</i> + <i>Pa A12</i>; Automatically <i>reset</i> until <i>alarm events per hour</i> reaches value of parameter <i>Pa A13</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A10</i> after turning on Energy 400 using On-OFF key (refer to <i>keyboard</i>) or digital input ON-OFF (refer to <i>digital inputs</i>) or start of <i>heating</i> mode.
E26	Probe ST5 fault	<ul style="list-style-type: none"> All <i>loads</i> will be shut down; Triggered if probe ST5, configured as an analogue input, shorts or is cut off or probe limits are exceeded (-50°C.. 100°C).
E27	Probe ST6 fault	<ul style="list-style-type: none"> All <i>loads</i> will be shut down; Triggered if probe ST6, configured as an analogue input, shorts or is cut off or probe limits are exceeded (-50°C.. 100°C).
E29	High pressure compressor 3	<ul style="list-style-type: none"> Compressor 3 will be shut down; Triggered by the digital input configured as "High pressure compressor 3" (refer to <i>digital inputs</i>); Always manually <i>reset</i>
E31	High pressure circuit 2 on analog input	<ul style="list-style-type: none"> <i>Compressors</i> in circuit 2 will be shut down; Active if analog probe ST3/ST4 (refer to analog inputs) is configured as pressure probe; Active when the pressure probe (ST3/ST4) detects a value greater then <i>Pa A14</i>; Inactive if the probe detects a value lower then <i>Pa A14</i> - <i>Pa A15</i>;
E32	Low pressure circuit 2 on analog input	<ul style="list-style-type: none"> <i>Compressors</i> in circuit 2 will be shut down, as well as condenser fans if the 2 circuits have separate condensation (refer to <i>combined or separate condensation</i>); Active if the analog probe ST6 (refer to analog inputs) is configured as pressure probe; Active when the pressure probe ST6 detects a value lower then <i>Pa A17</i>; Inactive if the probe detects a value greater then <i>Pa A17</i> - <i>Pa A18</i>;

CODE	MESSAGE	DESCRIPTION
		<ul style="list-style-type: none"> Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A19</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A16</i> after compressor on or reversal of 4-way valve (<i>reversing valve</i>) of circuit 2
E33	Thermal switch protection compressor 4	<ul style="list-style-type: none"> Compressor 4 will be shut down; Triggered by the digital input configured as "Thermal switch compressor 4" (refer to <i>digital inputs</i>); Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A07</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A08</i> after compressor on.
E39	High pressure compressor 4	<ul style="list-style-type: none"> Compressor 4 will be shut down; Triggered by the digital input configured as "High pressure compressor 4" (refer to <i>digital inputs</i>); Always manually <i>reset</i>
E40	Probe ST1 fault	<ul style="list-style-type: none"> All <i>loads</i> will be shut down; Triggered if probe ST1, configured as an analogue input, shorts or is cut off or probe limits are exceeded (-50°C.. 100°C).
E41	Flow switch	<ul style="list-style-type: none"> All <i>compressors</i>, fans and pump will be cut off if manually <i>reset</i>; Triggered if the digital input configured as "Flow switch" (refer to <i>digital inputs</i>) remains active for an amount of time equal to <i>Pa A04</i>; Goes off if the digital input configured as "Flow switch" (refer to <i>digital inputs</i>) remains inactive for an amount of time equal to <i>Pa A05</i>; Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A06</i> , after which manually <i>reset</i>; Inactive during timer <i>Pa A03</i> following pump on.
E42	Probe ST4 fault	<ul style="list-style-type: none"> All <i>loads</i> will be shut down; Triggered if probe ST4, configured as an analogue input, shorts, is cut off, or probe limits are exceeded (-50°C.. 100°C).
E43	Anti-freeze external circuit 1,2	<ul style="list-style-type: none"> Fans and <i>compressors</i> will be shut down; Active if analogue probe ST6 and/or ST3 (refer to <i>analogue inputs</i>) is configured as external anti-freeze probe (<i>Pa H13</i> = 4, <i>Pa H16</i>=4); Triggered when probe ST3 and/or ST6 detects a value below <i>Pa A11</i>; Turns off when probe ST3 and/or ST6 detects a value above <i>Pa A11</i> + <i>Pa A12</i>; Automatically <i>reset</i> until <i>alarm events per hour</i> reaches value of parameter <i>Pa A13</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A10</i> after turning on Energy 400 using On-OFF key (refer to <i>keyboard</i>) or digital input ON-OFF (refer to <i>digital inputs</i>) or start of <i>heating</i> mode.
E44	Machine out of coolant	<ul style="list-style-type: none"> In all working modes, except if the boiler is active and during <i>defrost</i>, the machine is checked to identify circuit failures. For example: gas flooding, broken inversion valve in heat pump machines, compressor power phases exchange. The regulator is active if <i>Pa A23</i>=1 and ST2 is configured as water output probe. An alarm arises if one of the following conditions lasts for a minimum time of <i>Pa A22</i>: ST2-ST1(or ST3)-<i>Pa A20</i> in heat pump configuration, ST1(or ST3)-ST2-<i>Pa A20</i> in <i>cooling</i> configuration. The gas flooding alarm always needs a <i>manual reset</i>. Time count resets with each mode change or if all the <i>compressors</i> are off. After a compressor start, the alarm is ignored for a time of <i>Pa A21</i>.
E45	Configuration error	<ul style="list-style-type: none"> All <i>loads</i> will be shut down; Triggered if at least one of the following conditions apply: H11= 2 (ST1 configured as request for <i>heating</i>), H12= 2 (ST2 configured as request for <i>cooling</i>) and both inputs are active. Sum of <i>compressors</i> and capacity steps on machine exceeds 4 The <i>keyboard</i> is declared present (Pa H69=1) and there is no communication between the <i>keyboard</i> and the basic unit.
E46	High temperature regulation algorithm	<ul style="list-style-type: none"> All <i>loads</i> will be shut down except the pump; Triggered if probe ST1 (refer to <i>analogue inputs</i>) has a value exceeding <i>Pa A25</i> for an amount of time exceeding <i>Pa 26</i> in <i>cooling</i> mode; Goes off if probe ST1 (refer to <i>analogue inputs</i>) has a value lower than <i>Pa A25</i> - <i>Pa A12</i>; Automatically <i>reset</i>.
E53	High pressure compressor 5	<ul style="list-style-type: none"> Compressor 5 will be shut down; Triggered by the digital input configured as "High pressure compressor 5" (refer to <i>digital inputs</i>); Always manually <i>reset</i>
E59	Thermal switch protection compressor 5	<ul style="list-style-type: none"> Compressor 5 will be shut down; Triggered by the digital input configured as "Thermal switch compressor 5" (refer to <i>digital inputs</i>); Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the

CODE	MESSAGE	DESCRIPTION
		<ul style="list-style-type: none"> value of parameter <i>Pa A07</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A08</i> after compressor on.
E63	<i>High pressure compressor 6</i>	<ul style="list-style-type: none"> Compressor 6 will be shut down; Triggered by the digital input configured as "High pressure compressor 6" (refer to <i>digital inputs</i>); Always manually <i>reset</i>
E69	<i>Thermal switch protection compressor 6</i>	<ul style="list-style-type: none"> Compressor 6 will be shut down; Triggered by the digital input configured as "Thermal switch compressor 6" (refer to <i>digital inputs</i>); Automatically <i>reset</i> until <i>alarm events per hour</i> reaches the value of parameter <i>Pa A07</i>, after which manually <i>reset</i>; Inactive during timer <i>Pa A08</i> after compressor on.
E79	<i>Thermal switch protection circuit 1</i>	<ul style="list-style-type: none"> Compressor(s) and fans for circuit 1 will be shut down; to not stop fans and <i>compressors</i>; To do this please set <i>Pa A09=20</i>; the alarm will be always on automatic mode. On <i>display</i>, anyway, it is shown the error message
E89	<i>Thermal switch protection circuit 2</i>	<ul style="list-style-type: none"> Compressor(s) and fans for circuit 2 will be shut down; to not stop fans and <i>compressors</i>; To do this please set <i>Pa A09=20</i>; the alarm will be always on automatic mode. On <i>display</i>, anyway, it is shown the error message

Alarm Table 2

<u>LABEL</u>	<u>MESSAGE</u>	<u>Step1</u>	<u>Step2</u>	<u>Step3</u>	<u>Step4</u>	<u>Step5</u>	<u>Step6</u>	<u>Step1</u> <u>FAN1</u>	<u>Step2</u> <u>FAN 1</u>	<u>Step3</u> <u>FAN 1</u>	<u>Step1</u> <u>AN 2</u>	<u>Step2</u> <u>FAN 2</u>	<u>Step3</u> <u>FAN 2</u>	<u>PUMP</u>	<u>RES.1</u>	<u>RES.2</u>
E00	Remote off	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E01	High pressure circuit 1	YES	YES	YES	YES ²	YES ²	YES ²									
E02	Low pressure circuit 1	YES	YES	YES	YES ²	YES ²	YES ²	YES ²	YES ²	YES ²						
E03	⁽⁵⁾ Thermal switch protection compressor 1	YES														
E04	⁽⁶⁾ Thermal switch protection condenser fan circuit 1	YES	YES	YES	YES ^{2,3}	YES ^{2,3}	YES ^{2,3}	YES	YES	YES	YES ²	YES ²	YES ²			
E05	Anti-freeze circuit 1	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES			
E06	Probe ST2 fault	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E07	Probe ST3 fault	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E09	⁽⁵⁾ High pressure compressor 1	YES														
E11	High pressure circuit 1 on analog input	YES	YES	YES	YES ²	YES ²	YES ²									
E12	Low pressure circuit 1 on analog input	YES	YES	YES	YES ²	YES ²	YES ²	YES ²	YES ²	YES ²						
E13	⁽⁵⁾ Thermal switch protection compressor 2		YES													
E19	⁽⁵⁾ High pressure compressor 2		YES													
E21	High pressure circuit 2				YES	YES	YES									
E22	Low pressure circuit 2				YES	YES	YES				YES ²	YES ²	YES ²			
E23	⁽⁵⁾ Thermal switch protection compressor 3			YES												
E24	⁽⁶⁾ Thermal switch protection condenser fan circuit 2	YES ³	YES ³	YES ³	YES	YES	YES	YES ³	YES ³	YES ³	YES	YES	YES			
E25	Anti-freeze circuit 2	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES			
E26	Probe ST5 fault	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E27	Probe ST6 fault	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E29	⁽⁵⁾ High pressure compressor 3			YES												
E31	High pressure circuit 2 on analog input				YES	YES	YES									
E32	Low pressure circuit 2 on analog input				YES	YES	YES				YES ²	YES ²	YES ²			
E33	⁽⁵⁾ Thermal switch protection compressor 4			YES												
E39	⁽⁵⁾ High pressure compressor 4			YES												
E40	Probe ST1 fault	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E41	Flow switch	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES ²		
E42	Probe ST4 fault	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E43	Anti-freeze external circuit 1,2	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES			
E44	Machine out of coolant	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES			
E45	Configuration error	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E46	High temperature regulation algorithm	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES		YES	YES
E53	⁽⁵⁾ High pressure compressor 5					YES										
E59	⁽⁵⁾ Thermal switch protection compressor 5					YES										
E63	⁽⁵⁾ High pressure compressor 6						YES									
E69	⁽⁵⁾ Thermal switch protection compressor 6						YES									
E79	⁽⁵⁾ Thermal switch protection circuit 1	YES	YES	YES	YES ²	YES ²	YES ²									
E89	⁽⁵⁾ Thermal switch protection circuit 2				YES	YES	YES									

Notes:

1	If Electric heater OFF with unit in OFF or <i>Stand-by</i> (r06=0)
2	If the step belongs to circuit 1
3	With combined ventilation (F22 =1)
4	Only if <i>manual reset</i> (see flow switch alarm)
5	Other steps defined as capacity steps will go off if there is an alarm for the compressor to which they belong
6	Fans and <i>compressors</i> are not switched off for Lennox application (through parameter)
7	If external probe not present (H14<3)
6	If separate condensation

If the unit is OFF the diagnostic of the following *alarms* is active: sensors (E6, E7, E26, E27, E40, E42), flow switch (E41), configuration (E45), high temperature (E46); if one of these *alarms* is present pump and electric heaters are switched off