

# OMEGA POWER SYSTEM

For us, it's not just business. It's personal.

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If you require assistance or have any questions regarding the installation or maintenance of your Omega Compressor please do not hesitate to contact our Customer Service department at 1-800-668-8448.







## ALARM HISTORY:

It is possible to view the history of the last 100 alarms, you can scroll through the alarms with the arrows; for each alarm is indicated the activation time and the temperature.

### 1st alarm

0)95°C h1 m0 Motor Thermal
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### 5th alarm

5)40°C h1864 m56 Emergency button
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### Input Activation

- **Motor thermal switch:** Always active.
- **Rotation direction:** Always active except for the case in which you turn on the inverter of the parameter or the internal phase sequence parameter is ON.
- **Remote ON/OFF:** Always active except for the case in which the active remote pressure turns into remote pressure input
- **Emergency:** Always active.
- **Work pressure switch:** Active only when the electronic pressure sensor is disabled.
- **4-20mA in:** Input active only if the electronic pressure switch is enabled
- **Temperature probe:** Always active.
- **+5V phase sequence transformer:** Active only if the internal phase sequence is enabled

### Output activation

- **Line remote control switch:** active during start-up
- **Star remote control switch:** active during start-up
- **Triangle remote control switch:** active after 5 seconds from start-up
- **Load solenoid valve:** active after 3 seconds after switching to triangle (with inverter the time is variable)
- **Fan:** active only when the motor is running and after having exceeded the set temperature
- **4-20mA out:** active only with the inverter active.
- **AUX output:** active when an alarm is triggered

**Fixed parameters:**

PARAMETER		Unit of Measurement
Initial Stand-By Duration	15	Sec
Load delay time	3*	Sec
Delay time between restarts	15	Sec

\*= with the enabled inverter, it is variable

**Settable parameters:**

ID	Parameter	MIN	MAX	TYP	Unit of Measurement	Password
1	Pre-alarm hours (oil, oil filter, air filter, oil separator*)	-32768	32768	-	time	Support
2	Line hours	0	65535	1	time	Factory
3	Vacuum time	0	65535	0	time	Factory
4	Alarm history					-
5	Pre-alarm temperature (DELTA)	0	20	5	°C	Factory
6	Maximum temperature	0	150	110		Factory
7	Minimum Temperature	-13	-1	-7	°C	Factory
8	Fan temperature	0	150	80	°C	Support
9	Vacuum time	30	250	75	Sec	Support
10	Automatic reset	YES	NO	NO		Support
11	Internal phase sequence	YES	NO	YES		Support
12	Language			ITA		-
13	Temperature drift	0	20	10	°C	Factory
14	Stop Time	1	250	10	Sec	Support
15	Extra fan time	1	250	10	Sec	Support
16	Star to delta time	1	250	3	Sec	Factory
17	Separate thermal switches	YES	NO	NO	sec	Support
18	PTC enabled	YES	NO	NO		Support
19	PSI/BAR/KPa	-	-	BAR		-
20	°C / °F	°C	°F	°C		-
21	Operating pressure/vacuum setting	0	15.0**	10.0	bar	-
22	Operation delta/load setting	0	15.0***	8.5	bar	-
23	Maximum settable pressure	0	15.0	11.0	bar	Factory
24	Maximum alarm pressure	0	16.0	13.7	bar	Factory
25	Remote pressure	NO	YES	NO		Support
26	Dryer	NO	YES	NO		Support
27	Inverter	YES	NO	NO		Support
28	Minimum operating %	0	100	50	%	Factory
29	Load delay	0	250	10	Sec	Support
30	Supplementary inverter	0	250	0		Support
31	Proportional inverter	0	250	30		Support
32	Derivative inverter	0	250	180		Support

\* = Default parameters: Oil time = 2000, oil filter = 2000, air filter = 1000, oil separator = 4000

\*\*= the maximum settable value is the value set in parameter 22, if the parameter 26 is set to ON, the parameter turns into operating pressure

\*\*\* = if the parameter 26 is set to ON, the parameter becomes the delta function, maximum settable is 2.

# Menu

**Contrast:** When the machine is in standby (state=OFF) by pressing the key 5 for at least 3 seconds you will access the configuration menu to adjust the contrast from 1 (darker) to 50 (brighter) with the keys 1 and 2, confirm with the key 3 to adjust the display brightness 0 (light off) to 255 (maximum brightness) and confirm with the key 3.

## Parameters Menu

Press the key OK with the machine at a standstill (Status = OFF) to access the parameters menu:

- 1) **Pre-alarm time:** Menu of service hours, these meters are calibrated automatically after each hour of operation of the machine, when the meter reaches the value 0, the controller sends the maintenance alert, there are 4 meters
  - Oil Hours
  - Oil Filter Hours
  - Air Filter Hours
  - Oil Separator HoursThe meter with the sign – in front indicates the hours passed from the maintenance alert; use the keys **1** or **5** to set the new value desired; press the key **4** to set the meter to **2000** (to restore the maintenance alarm set the greater value to 0).
- 2) **Alarm history:** Access to scroll through the last 100 alarms and read the working time and the temperature of oil at which the alarm was triggered.
- 3) **Fan temperature:** this parameter is the fan enabling temperature; the adjustment range is from 0 to 150 °C, at a preset temperature the fan starts, the hys teresis is fixed at 10 °C.
- 4) **No load time:** in this parameter you can change the no load cycle time of the machine, the adjustment range is from 30 to 250 seconds.
- 5) **Automatic Start:** The parameter enables the automatic start, when this parameter is activated the compressor starts automatically, even after a power outage; the first start can be enabled by pressing the key 4 on the keyboard. **For safety reasons we strongly advise you NOT to use it.**
- 6) **Int. phase sequence:** The parameter enables the internal phase sequence control.
- 7) **Language:** This parameter is used to change the language
- 8) **Stop time:** It defines the delay of compressor shutdown from the moment in which stop is requested via the key START/STOP. The solenoid valve is turned off immediately.
- 9) **Fan extra time:** It defines the time within which the fan remains active after the temperature returns within the safety limits.
- 10) **Separate thermal switches:** Indicate whether the motor and fan thermal switches are separate, or if they are together. If they are separated, the alarms will be separated as well.
- 11) **PTC enabled:** If set to ON, the input is prepared to accept the PTC in input with triggering threshold at about 2Khom; check the wiring diagram.
- 12) **PSI/BAR/KPa:** In this parameter the user can choose the unit of measurement for the pressure.

- 13) **°C °F** : Select the temperature display mode.
- 14) **Operating pressure/vacuum setting**: in this parameter you can enter the operating pressure at which the compressor stop; if the inverter is active, this parameter indicates the operating pressure at which the inverter must begin to modulate to keep it steady.
- 15) **Operation delta/load setting**: indicates the pressure at which the controller enables the compressor restart. If the inverter is active, this parameter becomes the delta of operation, i.e. , it indicates the range of pressure at which the compressor has to work for example, if set to 1.0 bar and the operating pressure is 9.0 bar, it means that the compressor will shut down to 9.5 bar and will restarts at 8.5 bar.
- 16) **Remote pressure**: By enabling this parameter, you will maintain the pressure display and the associated alarms, but compressor restart is controlled via remote pressure switch contact, **the remote on/off input is disabled**. If the pressure measured by the internal electronic transducer exceeds the set pressure, the compressor stops, even if the external pressure switch prompts you to continue.
- 17) **Dryer**: Enables dryer alarm input.
- 18) **Inverter**: Enables the inverter. By enabling the inverter
- 19) **Load delay**: this parameter is only active in the presence of the INVERTER; you can set the delay in seconds, from the moment in which the start-up cycle ends to the moment in which you activate the air load solenoid valve.
- 20) **Supplementary inverter**: Parameter that changes the complementary constant of inverter speed calculation.
- 21) **Proportional inverter**: Parameter that changes the proportional constant on the calculation of inverter speed; by raising this parameter you can track the speed more responsively.
- 22) **Derivative inverter**: Parameter that changes the derivative constant; by raising this parameter you will have an estimate and a correction of the anticipated speed.



## OPERATING CYCLE

### Start-up procedure with mechanical pressure transducer:

Press the key 4. If no alarms are on, the start-up cycle is enabled:

- a) **Wait for start-up:** on display appears “**STATE= STAND-BY**” and the controller waits for the following conditions to be met prior to activating the compressor:
  - 1) If the machine was switched off or a previous stoppage was executed, the control unit waits 15 seconds before starting the compressor. The machine state button flashes.
  - 2) The controller waits for the work Pressure switch contact to close.
- b) **Compressor start-up:** the line remote control switch and triangle output closes and the message “**STATE=VACUUM**” is displayed
- c) **Operational start-up:** Switching from start to triangle after 5 sec. After 2 seconds, if requested by the work pressure switch, is energized the load solenoid valve and on display appears “**STATE=LOAD**”.
- d) **Compressor shutdown:** When the compressor reaches the set pressure and the pressure switch cuts off the enabling signal, the controller disables the load solenoid valve and the vacuum cycle starts if the switch does not enable the operation again once the load is completed; after the vacuum time set elapses the controller stops the compressor and the latter remains in “**STATE= STAND-BY**”.
- e) **Compressor stop:** If you press the key 4 while the controller is in Stand-by, the controller stops instantly and on display appears “**STATE=STOP**”, ; on the other hand, if the key is pressed during the load cycle, the controller goes in vacuum mode and on display appears “**STATE=VACUUM**” that flashes once the vacuum time elapses, and the controller goes in STOP mode, in case you press the key 5 STOP during the vacuum cycle, the controller waits until the remaining vacuum time elapses and then goes in STOP mode.
- f) **remote ON/OFF:** Via the *remote on/off* the user can shut down or start the compressor. (the *remote on/off* control is active only if the controller is in START mode).

### Start-up procedure with electronic pressure transducer:

Press the key 4. If no alarms are on, the start-up cycle is enabled:

- a) **Wait for start-up:** on display appears “**STATE= STAND-BY**” and the controller waits for the following conditions to be met prior to activating the compressor:
  - 1) If the machine was switched off or a previous stoppage was executed, the control unit waits 15 seconds before starting the compressor. The machine state button flashes.
  - 2) The control unit waits for the pressure to go below the value set in the “Load pressure” set before starting the compressor.
  - 3) The controller waits for the work pressure switch, which becomes the oil separator pressure switch, to close.
- b) **Compressor start-up:** the line remote control switch and triangle output closes and the message “**STATE=VACUUM**” is displayed
- c) **Operational start-up:** Switching from start to triangle after 5 sec. After 2 seconds, if requested by the work pressure switch, is energized the load solenoid valve and on display appears “**STATE=LOAD**”.
- d) **Compressor shutdown:** When the compressor reaches the set vacuum pressure the controller disables the load solenoid valve and the vacuum cycle starts if the pressure does not drop below the set value; after the vacuum time set elapses the controller stops the compressor and the latter remains in “**STATE= STAND-BY**”.
- e) **Compressor stop:** If you press the key 4 while the controller is in Stand-by, the controller stops instantly and on display appears “**STATE=STOP**”, ; on the other hand, if the key is pressed during the load cycle, the controller goes in vacuum mode and on display appears “**STATE=VACUUM**” that flashes once the vacuum time elapses, and the controller goes in STOP mode, in case you press the key 6 STOP during the vacuum cycle, the controller waits until the remaining vacuum time elapses and then goes in STOP mode.
- f) **remote ON/OFF:** Via the *remote on/off* the user can shut down or start the compressor. (the *remote on/off* control is active only if the controller is in START mode).

### Start-up procedure with electronic pressure transducer and INVERTER:

Press the key 4. If no alarms are on, the start-up cycle is enabled:

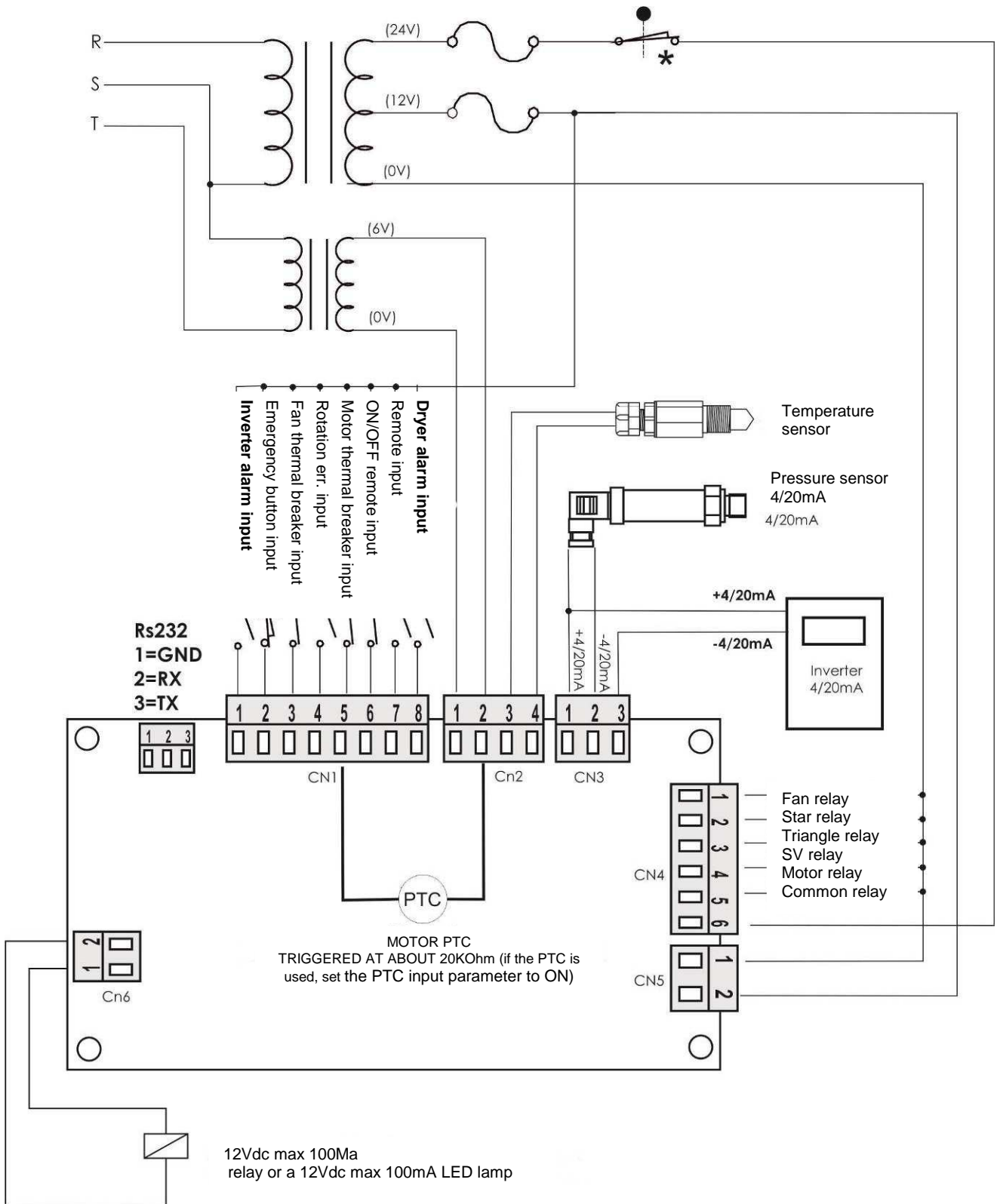
- a) **Wait for start-up:** on display appears “**STATE= STAND-BY**” and the controller waits for the following conditions to be met prior to activating the compressor:

- a. If the machine was switched off or a previous stoppage was executed, the control unit waits 15 seconds before starting the compressor. The machine state button flashes.
- b. The control unit waits for the pressure to drop below the value set in the "Working Pressure-Working Delta" parameter before starting the compressor.
- c. The controller waits for the work pressure switch, which becomes the oil separator pressure switch, to close.
- b) **Compressor start-up:** the line remote control switch and star output closes and the message "**STATE=VACUUM**" is displayed; the motor starts at minimum speed % set.
- c) **Operational start-up:** After the time set in the load delay parameter elapses, the load solenoid valve is enabled and on display appears "**STATE=LOAD**", when the compressor reaches the operating pressure, the inverter output will begin to modulate the motor to keep the pressure steady. The pressure will be adjusted from minimum % set to 100% of speed.
- d) **Compressor shutdown:** When the compressor reaches the set operating pressure + operating delta, the controller disables the load solenoid valve and the motor works at minimum operating speed % and the vacuum cycle starts if the pressure does not drop below the set value; after the vacuum time set elapses the controller stops the compressor and the latter remains in "**STATE= STAND-BY**".
- e) **Compressor stop:** If you press the key 4 while the controller is in Stand-by, the controller stops instantly and on display appears "**STATE=STOP**"; ; on the other hand, if the key is pressed during the load cycle, the controller goes in vacuum mode and on display appears "**STATE=VACUUM**" that flashes once the vacuum time elapses, and the controller goes in STOP mode, in case you press the key 6 STOP during the vacuum cycle, the controller waits until the remaining vacuum time elapses and then goes in STOP mode.
- f) **remote ON/OFF:** Via the **remote on/off** the user can shut down or start the compressor. (the **remote on/off** control is active only if the controller is in START mode).

**Password:**

Support service password = 2954

# Wiring diagram



**INDICE DI REVISIONE (R)**
**REVIEW INDEX (R)**

# R 1

N	DESCRIZIONE MODIFICA	DESCRIPTION OF MODIFICATION	Data/Date
0	Creazione (tutte le pagine)	<i>Created on (all pages)</i>	17/06/2015
1	Modificata tabella parametri settabili (pag. 6)	<i>Settable parameters Table edited (page 6)</i>	17/07/2015

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