TEXT

230V-24Vac
>3VA (Check servomotor power)

230V
to expansions

230V-24Vac
>14VA

Toroid
KITAGAWA

800 mAT
FUSE

L
N
230V

REMOTE TERMINAL LARGE

L max=50 m

Input voltage
24Vac(+10/-15%),50/60Hz
48Vdc(-72Vmax)
max. power:
14VA/11W

serial card 1

G J1
G0

SYNC

B1
B2
B3  T MAN
B4
B5
B6
GND
+5Vref
+VDC
ID1
GND

C1
NC1
NO1

J2

J3

CC

C3
NO3
NO4
NO5
NO6
NO7
C3

GND
ID2
B7
B8

J11

J12

Tx/Rx GND

J5

J6

TLAN
GND

Tx/Rx
GNX

J7

J8
ISOLATED

PWM/Y1
Y2

GND

NO2

C2

J9

J10

BUS (MOD_Z1)

CF

GO  G  Y
servomotor
(0-10V)
3 wires

MIX

T/H
ZONE 1

DP1 (OFF)
DP2 (ON)

(G)+
ntc
ntc
M
out
H

C3
NO3
NO4
NO5
NO6
NO7
C3

GND
ID2
B7
B8

J11

J12

L       N

R_AG/AUX
RP
T1
RD
RS

SW: 28162100B

| RIF. | COM. N° | DESCRIZIONE | ESEGUITO | DATA |
|---|---|---|---|---|
| ⓪ | AD 7527 | PRIMA ESECUZIONE | MC | 19.03.15 |
| | | | | |
| | | | | |
| | | | | |
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**EMMETI** S.P.A

A termini di legge e' vietato riprodurre o comunicare a terzi il contenuto del presente disegno. Proprieta' riservata.

DENOMINAZIONE
ELECT DIAGRAM PCOC 06_07T/1H

| CODICE | FOGLIO | NOTE |
|---|---|---|
| E60001060 | 1/6 | PCOC board |

**NOTE:**

For the BUS connection Use a shielded pair cable twisted like BELDEN 8762 (max 500 m).

# Key for electric diagram 6. 7T/1H for PCOC board

| | | | | |
|---|---|---|---|---|
| ID1 | = External input: high temperature | | CC | = Boiler interlock |
| ID2 | = External input: low temperature | | CF | = Chiller interlock |
| T/H 1 | = Room temp./humidity sensor ZONE 1 | | RP | = Pump A relay |
| B5 | = remote ON/OFF | | RS | = Summer/Winter relay |
| B6 | = Boiler alarm | | R_AG/AUX | = Frost protection relay/ Periodic auxiliary function relay |
| B7 | = Chiller alarm | | T1 | = Zone 1 electrothermic head |
| B8 | = Summer/Winter selector | | RD | = Interlock Realy Dehumidifier |
| T man | = Flow temperature sensor | | Y/Y2 | = 0-10V signal for the mixing valve proportional servomotor |
| Text | = Outdoor temperature sensor | | | |
| | | | BUS | = Bus for connection with expansion board MOD_Z1 |

**NOTE:**

- Output J3 - Boiler interlock - Contact rating 8 A - 250 Vac - cos$\phi$ = 1
- Output J4 - PGD1 Large remote terminal connection via 6-wire telephone cable
- Output J10 - Chiller interlock - Contact rating 8 A - 250 Vac - cos$\phi$ = 1
- Output J11 - Contact rating 5 A - 250 V AC - cos$\phi$ = 1
- Output NO3 - Frost protection digital output, closed contact: frost protection function in progress. If the digital output is enabled from the advanced menu it is used for the periodic auxiliary function, closed contact: auxiliary function in progress. (The logic is invertible from the advanced menu)
- Output NO7 - Summer/Winter digital output, closed contact: Winter. (The logic is invertible from the advanced menu)
- Back-up relay always recommended. Also use change-over relays if you are using commons with different voltages
- Digital input ID1 - When the contact closes it requests high temperature from the thermostat
- Digital input ID2 - When the contact closes while the function is in progress, it requests low temperature from the thermostat (if enabled)
- Digital input B5 - Allows the system to be switched on or off remotely, when selected in the PCOC menu
- Digital input B6 - For connection of a boiler alarm circuit, where fitted by the boiler manufacturer
- Digital input B7 - For connection of a chiller alarm circuit, where fitted by the chiller manufacturer
- Digital input B8 - Allows the system to be switched in heating or cooling mode remotely, when selected in the PCOC menu
- The logic of the inputs can be inverted from the advanced menu
- For PCOC regulator input and output connections, use cables with a section that is proportional to the load (1.5 mm2)
- The current supply for the regulator and the supply for the 0-10V servomotor must be galvanically isolated, using either two transformers or one with two independent secondary circuits.
- If dehumidification is only carried out during the summer season every dehumidifier should be switched on from a corresponding electrothermic head equipped with a micro switch. When there is a request for dehumidification the electrothermic head is powered. When it opens the micro switch closes, in this way the dehumidifier switch on. (See the following diagram by way of example)
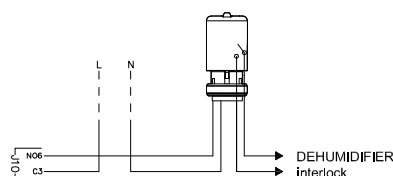


**WARNING!**

For graphic the common terminals of the sensors are shown schematically connected at the most convenient points.
When wiring, run all leads of the probes to the terminals of the adjustment device and make the common connections at that point.
This measure prevents electromagnetic disturbances which compromise correct signal transmission.
Avoid running the cables of the sensors and of the digital inputs together with the power cables.
It is advisable to use shielded cables for the connection of the sensors.
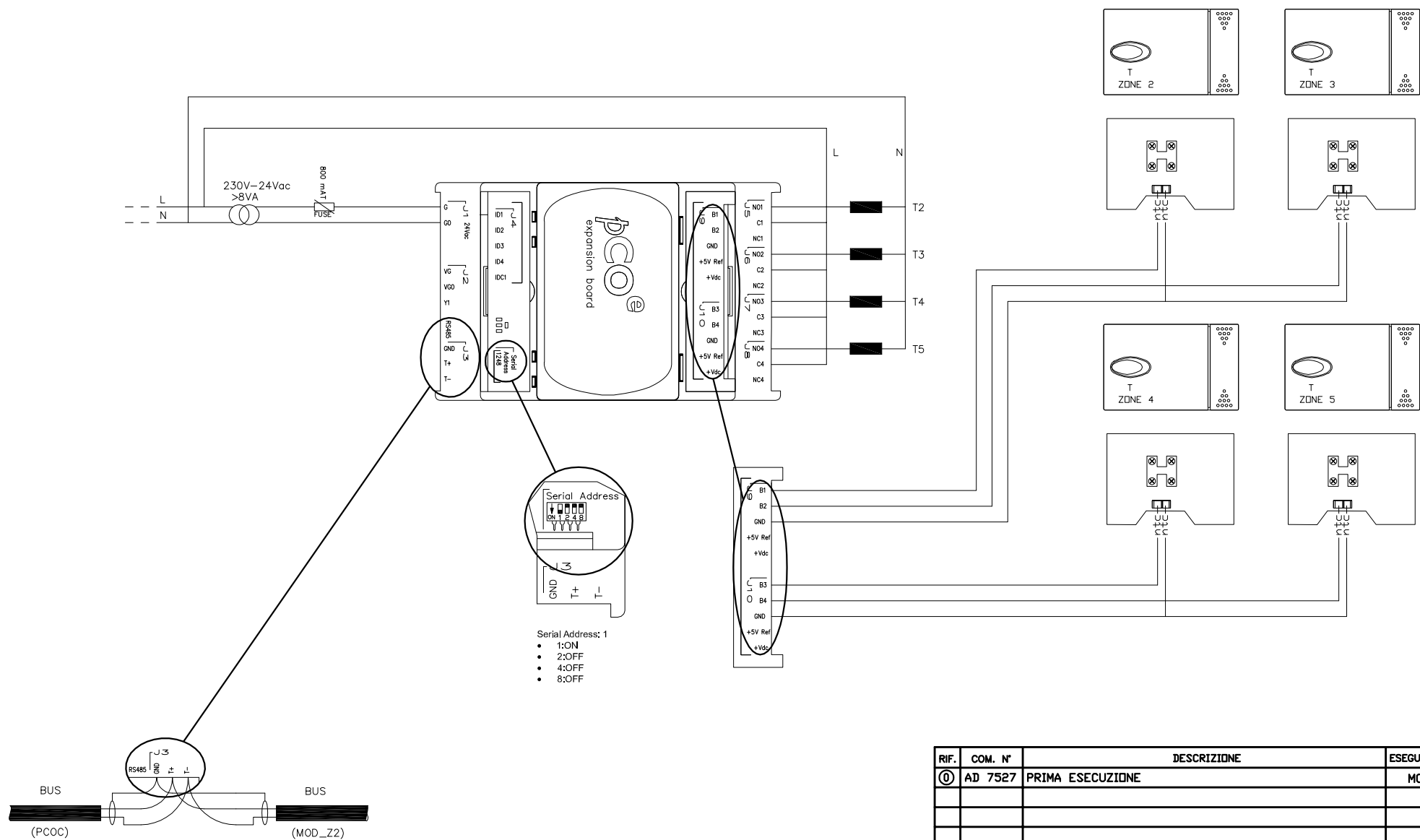
**IMPORTANT!**

T/H temperature and humidity sensors: before closing the T/H probes, check that jumpers DP1 - DP2 are positioned as in the figure.

This operation enables output "out H" of the probe with signal 4/20 mA for correct measurement of humidity.
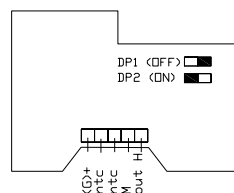


| | |
|---|---|
| **out H** | = humididty output (0/1 Vdc o 4/20 mA) |
| **M** | = reference for both power supply and outputs |
| **+ (G)** | = power supply (12/24 V AC or 9/30 V DC) |
| **ntc** | = NTC resistive output |
| **DP1** | = OFF |
| **DP2** | = ON |

| DENOMINAZIONE | | |
|---|---|---|
| ELECT DIAGRAM PCOC 06_07T/1H | | |
| CODICE | FOGLIO | NOTE |
| E60001060 | 2/6 | PCOC board |

230V-24Vac
>8VA

800 mAT
FUSE

L
N

pCO expansion board

G
G0 — J1 24Vdc

ID1
ID2 — J4
ID3
ID4
IDC1 — J2

VG
VG0 — J2
Y1

RS485 — J3
GND
T+
T-

Serial Address
1 2 4 8

L    N

B1
B2 — J5
GND
+5V Ref
+Vdc
B3 — J10
B4
GND
+5V Ref
+Vdc

NO1
C1
NC1
NO2 — J6
C2
NC2
NO3 — J7
C3
NC3
NO4 — J8
C4
NC4

T2

T3

T4

T5

ZONE 2

ZONE 3

ZONE 4

ZONE 5

Serial Address
ON 1 2 4 8

J3
GND
T+
T-

Serial Address: 1
- 1:ON
- 2:OFF
- 4:OFF
- 8:OFF

B1
B2
GND
+5V Ref
+Vdc
B3 — J10
B4
GND
+5V Ref
+Vdc

RS485 — J3
GND
T+
T-

BUS

BUS

(PCOC)

(MOD_Z2)

**NOTE:**

For the BUS connection Use a shielded pair cable twisted like BELDEN 8762 (max 500 m). Connecting chain, in-out mode, between the boards according to the polarity.

| RIF. | COM. N° | DESCRIZIONE | ESEGUITO | DATA |
|------|---------|-------------|----------|------|
| ⓪ | AD 7527 | PRIMA ESECUZIONE | MC | 19.03.15 |
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DENOMINAZIONE
ELECT DIAGRAM PCOC 06_07T/1H

| CODICE | FOGLIO | NOTE |
|--------|--------|------|
| E60001060 | 3/6 | MOD_Z1 board |

# Key for electric diagram 6. 7T/1H for EXPANSION board MOD_Z1

*To configure the PCOE module as expansion MOD_Z1 set 1 as the serial address, see diagram on how to set the DIP switches*

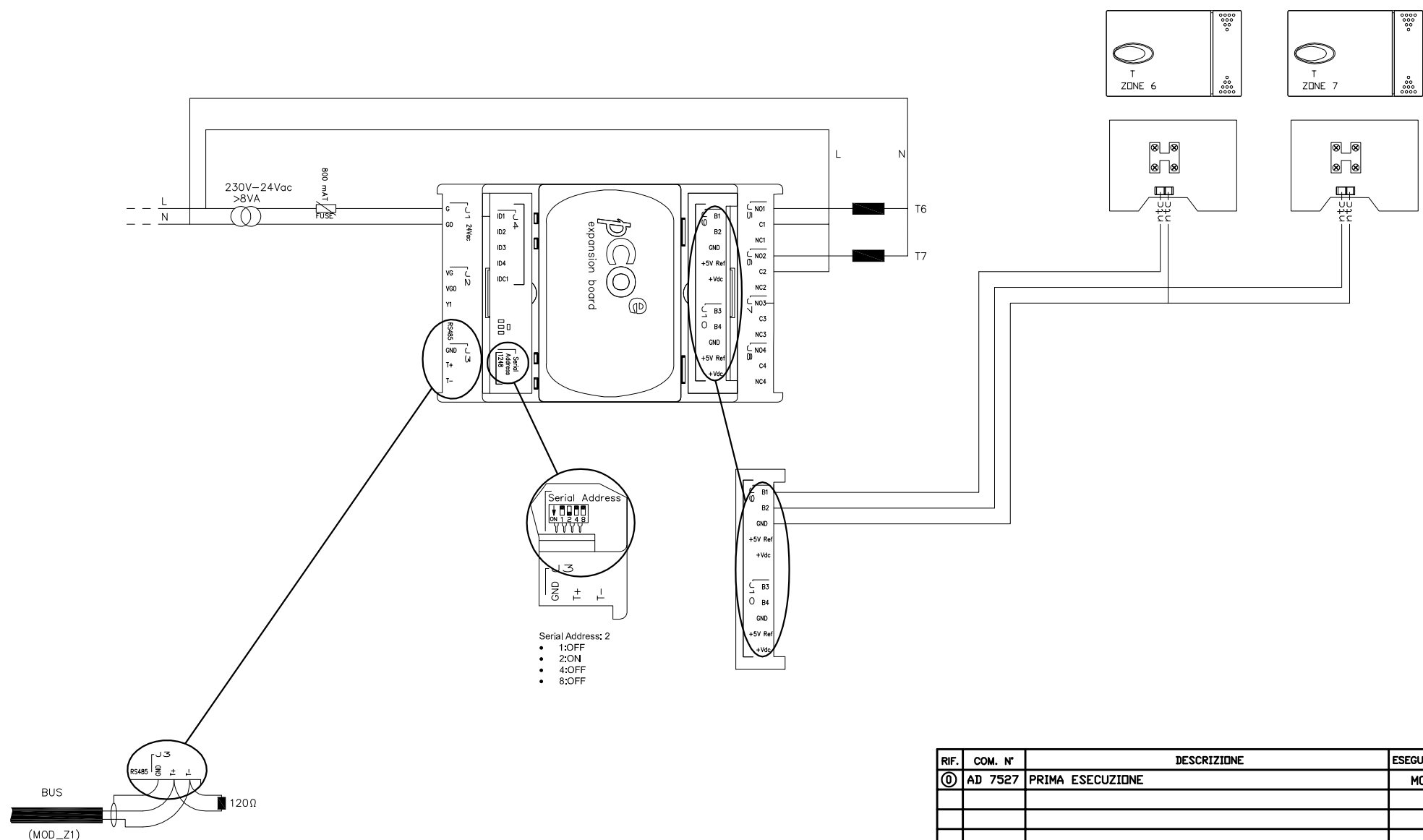| | | | |
|---|---|---|---|
| T | = Room temperature sensors | T2 | = Zone 2 electrothermic head |
| | | T3 | = Zone 3 electrothermic head |
| BUS | = Bus for the connection from PCOC to expansion board | T4 | = Zone 4 electrothermic head |
| | MOD_Z2 | T5 | = Zone 5 electrothermic head |

**NOTES:**
- Output J5, J6, J7, J8 - Contact rating 8 A - 250 V AC - cos$\phi$ = 1
- For regulator input and output connections, use cables with a section that is proportional to the load (1.5 mm2)

**WARNING!**
For simplicity the common terminals of the sensors are shown schematically connected at the most convenient points.
When wiring, run all leads of the probes to the terminals of the device and make the common connections at that point.
This measure prevents electromagnetic disturbances which compromise correct signal transmission.

Avoid running the cables of the probes and of the digital inputs together with the power cables.
It is advisable to use shielded cables for the connection of the sensors.

**230V-24Vac >8VA**

**800 mAT FUSE**

pCO® expansion board

ZONE 6

ZONE 7

L N

T6

T7

**Serial Address**

ON 1 2 4 8

Serial Address: 2
- 1:OFF
- 2:ON
- 4:OFF
- 8:OFF

BUS

(MOD_Z1)

120Ω

**NOTE:**

For the BUS connection Use a shielded pair cable twisted like BELDEN 8762 (max 500 m). Connecting chain, in-out mode, between the boards according to the polarity. Then the BUS must be connected to the expansion module MOD_M3P, if provided, otherwise the MOD_Z2 board occupies the last position on the supervision serial line and it must be connected to a line closing resistance, with a value of 120Ω - 1/4W

| RIF. | COM. N° | DESCRIZIONE | ESEGUITO | DATA |
|------|---------|-------------|----------|------|
| ⓪ | AD 7527 | PRIMA ESECUZIONE | MC | 19.03.15 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**EMMETI** S.P.A

A termini di legge e' vietato riprodurre o comunicare a terzi il contenuto del presente disegno. Proprieta' riservata.

| DENOMINAZIONE | | | |
|---|---|---|---|
| ELECT DIAGRAM PCOC 06_07T/1H | | | |
| CODICE | | FOGLIO | NOTE |
| E60001060 | | 5/6 | MOD_Z2 board |

# Key for electric diagram 6. 7T/1H for EXPANSION board MOD_Z2

*To configure the PCOE module as expansion MOD_Z2 set 2 as the serial address, see diagram on how to set the DIP switches*

T       = Room temperature sensors

BUS   = Bus for connections from expansion board MOD_Z1

T6      = Zone 6 electrothermic head
T7      = Zone 7 electrothermic head

## NOTES:
- Output J5, J6, J7, J8 - Contact rating 8 A - 250 V AC - cosϕ = 1
- For regulator input and output connections, use cables with a section that is proportional to the load (1.5 mm2)

## WARNING!
For simplicity the common terminals of the sensors are shown schematically connected at the most convenient points.
When wiring, run all leads of the probes to the terminals of the device and make the common connections at that point.
This measure prevents electromagnetic disturbances which compromise correct signal transmission.

Avoid running the cables of the probes and of the digital inputs together with the power cables.
It is advisable to use shielded cables for the connection of the sensors.

## GENERAL NOTES ON THE POWER SUPPLY
It is possible to power all of the boards (PCOC, MOD_Z1, MOD_Z2) with a single transformer providing a power supply of 24 Vac +10/-15% 50/60 Hz and a power of at least 30 VA. Alternatively, it is possible to use a transformer that provides a power supply of 28Vdc +10/-20% and a power of at least 23 W. Use the same polarity (G, G0) for the power supply for all the boards.

The power supply for PCOC and PCOE controls must be separate from the power supply of the 0-10V servomotor(s)

| DENOMINAZIONE | | |
|---|---|---|
| ELECT DIAGRAM PCOC 06_07T/1H | | |
| CODICE | FOGLIO | NOTE |
| E60001060 | 6/6 | MOD_Z2 board |