



# REVO-TCM Temperature Controller

## GENERAL DESCRIPTION



- PID Temperature controller
- Automatic Tuning of PID parameters with Self Tune or Pretune procedure
- Manual setting when requested of PID parameters
- Three pallets of PID parameters can be enabled at programmed PV value
- Dual Display to read PV,Set Point ,Load current and all parameters
- Universal input for Thermocouple ,RTD and linear input
- Four configurable outputs as Relay,SSR,and 4:20mA
- Heating and Cooling controller with possibility to select the type of cooling for fan, water and oil
- RS485 communication from 19200 to 57600 Bauds Modbus RTU protocol
- The controller can be configured from front push button or via RS485 comm. or via USB port on front controller using CD Automation programming cable
- Auto/Manual with Bumpless Transfer facility
- Screw terminals as standard, RJ45 as an option
- DIN rail mounting
- Dimensions Width: 36 Height: 121 Depth: 86
- RJ45 and connectors for multiple controller system
- New Design
- Side by side back panel DIN RAIL mounting
- Side by side front panel mounting
- Traditional screw Terminals for wiring
- Multiple plugin wiring with connectors

## Temperature controller features

### TECHNICAL SPECIFICATION TC MODULE

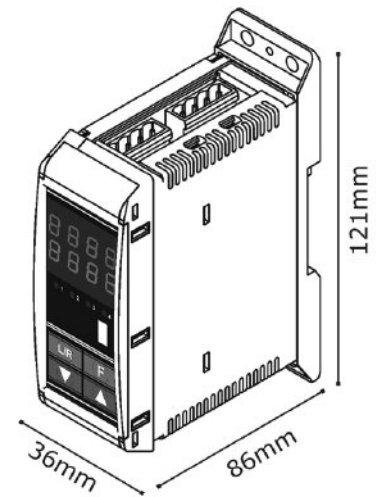
Features:	
Control Types	Full PID with Pre.tune, Manual tuning or ON-Off controll. Heat only or Heat & Cool.
Soft start	This feature allows lower cycle time and lower SP value during the process start-up phase
Auto/Manual	Selectable with bumpless transfer. Immediate OFF feature available as standard
Output configuration	Up to 4 output. Two control output max. (Heat & Cool), three alarm output max.
Process Alarm type	Process high, process low, SP deviation, band.
Heater Break Alarm	Low current and thyristor in short circuit
Inputs:	
Thermocouple	J, K, R, S, T, L
RTD	3 wire PT100
Linear	4/20mA, 0-10V, 0-60mV, 0/20mA, 2-10V
Accuracy	+/- 0,2% of the Span +/- 1 digit
Heater Current	0/50mA from external current transformer
Outputs and Options:	
Cooling relay alarm	SPDT relay 2A resistve at 240Vac* (500000 operations)
SSR control output	Drive capability:output 1 =10Vdc20mA max
Communications	RS 485 two wire Modbus RTU protocol 9600 to 57600 Baud.
Usage Conditions	
Temperature and humidity	0-40° C (-20/+80°C storage), 20/95% of non-condensing relative humidity
Voltage Power supply	20-50VAc or DC power 6W
Standars	CE cULus (pending)

### TECHNICAL SPECIFICATION TERMINAL UNIT MODULE

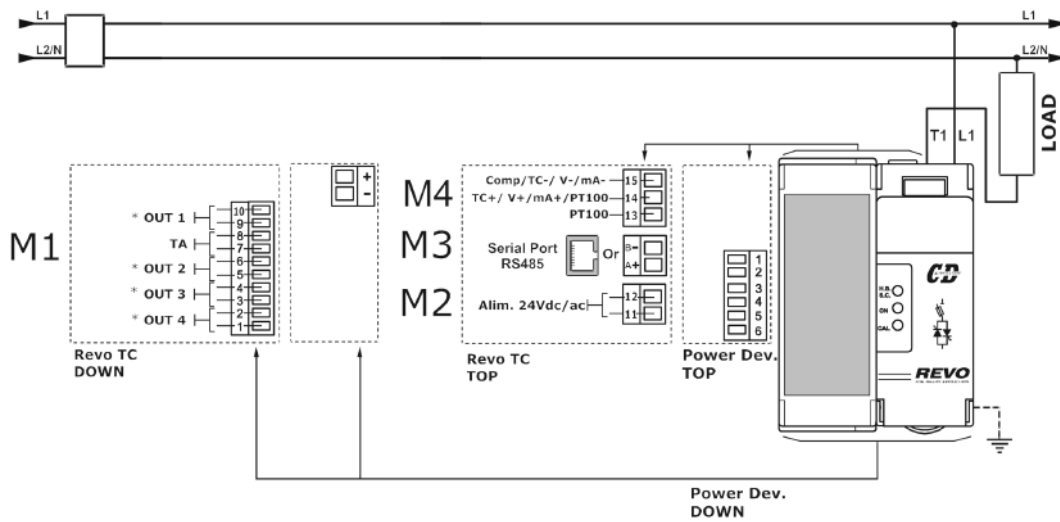
Operating temperature	0-40°C
Voltage Power supply	20-50VAc or DC power 6W
Relay output	3 SPDT Relay 2A resistive at 240Vac (> 500.000 operations)
Linkable REVO Terminal unit	1 up to 14 REVO TC
Installation and Protection	Din Rail mounting up to 45A, IP20

### ENVIRONMENTAL CONDITIONS

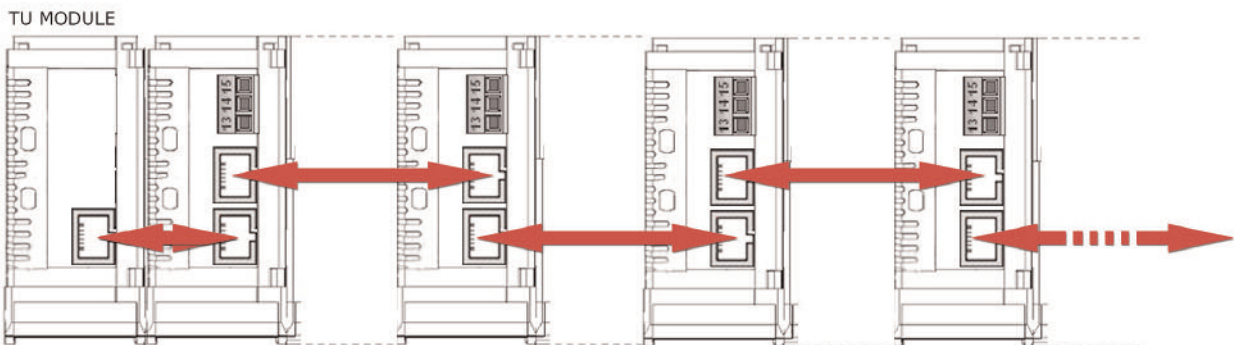
Frontal Protection mode IP65	housing and terminals ip20
Operating temperature for full specified accuracy	0 : 50° C
Operating temperature	-10 to 55° C
humidity 75% yearly average	no condensation
Electromagnetic compatibility	complies with EN 61 326-1
Flamability	Self extinguishing



## SCREW TERMINAL WIRING



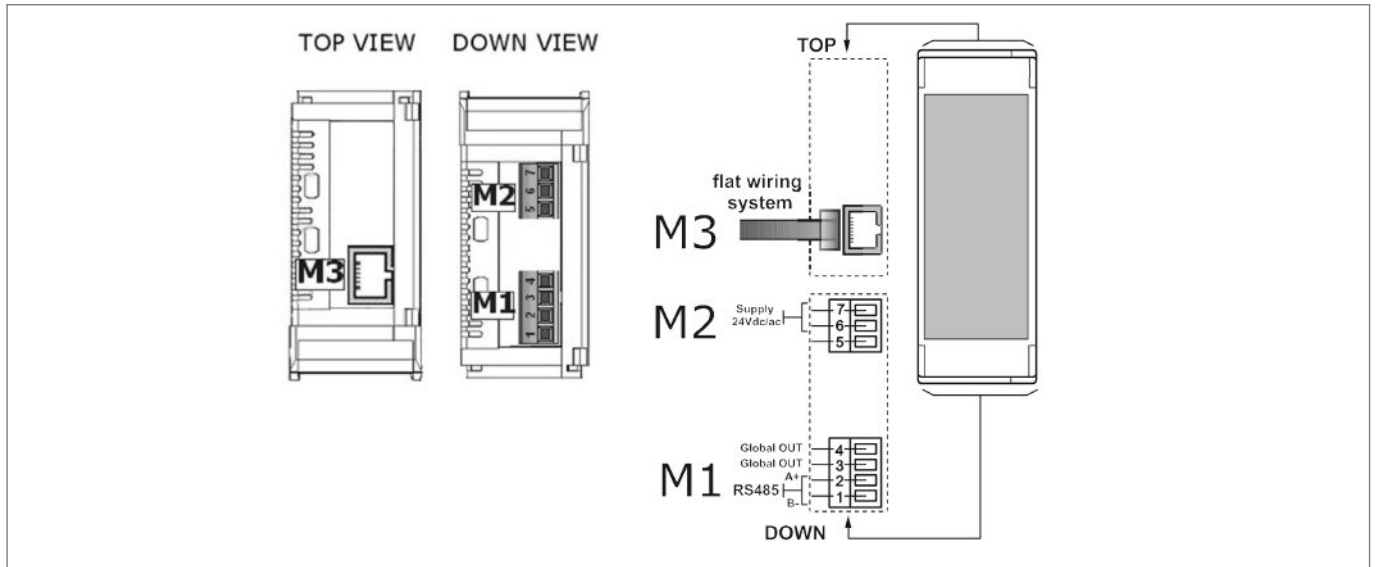
## PLUGIN WIRING WITH CONNECTORS



- This solution allows to save wiring on each controller for auxiliary voltage, RS485 communication and Heater Break Alarm.
- TU Module allows to transfer the plugin connection into screw terminal and provide with an internal transformer the 24v auxiliary voltage for controller max.  
code TU-MODULE (dimension like controller)

## TU MODULE BASIC

Revo TU is a termination unit that provides the power supply and RS485 comms (modbus RTU) for up to max 10 REVO TC units.



Terminal Block M1

Terminal	Description
1	RS485 B -
2	RS485 A +
3	Global output
4	Global output

Terminal Block M2

Terminal	Description
5	Not Used
6	Supply 24Vdc/ac
7	Supply 24Vdc/ac

Terminal Block M3 for flat wiring system

## ORDERING CODES TCM

TCM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
TCM	T	C	M	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>4</b> Input	<b>7</b> Output 3		<b>9</b> Communication		<b>12</b> Auxiliary Voltage		<b>10</b> Wiring System		<b>11</b> Options		<b>13</b> Approvals		<b>14</b> Manual		<b>15</b> Version		
<b>Description code</b>	<b>Numeric code</b>	<b>Description code</b>	<b>Numeric code</b>	<b>Description code</b>	<b>Numeric code</b>	<b>Description code</b>	<b>Numeric code</b>	<b>Description code</b>	<b>Numeric code</b>	<b>Description code</b>	<b>Numeric code</b>	<b>Description code</b>	<b>Numeric code</b>	<b>Description code</b>	<b>Numeric code</b>	<b>Description code</b>	<b>Numeric code</b>
Termocouple	T	Relay output	R	None	00	Screw terminal	0	None	0	None	0	None	0	None	0	None	0
PT100 - RTD	N	Digital Input	1	Communication	M0	RJ45 (RS485 - 1 DI; need Tu Flat Module)	1	12-24V ac dc	4	cUL us (soon available)	L	Italian Manual	1	English Manual	2	German Manual	3
0-10V dc	V	0-10V dc Retransmission	V	Modbus RTU	M0	RJ45 (RS485 - 1 DO; need Tu Flat Module)	2	0-10V dc Retransmission	V	4-20 mA Retransmission	A	French Manual	4	0-10V dc	V	4-20 mA	A
4-20 mA	A	4-20 mA Retransmission	A					4-20 mA Retransmission	A					4-20 mA	A		
<b>5</b> Output 1 Main Control	<b>8</b> Output 4		<b>11</b> Options		<b>12</b> Auxiliary Voltage		<b>10</b> Wiring System		<b>11</b> Options		<b>13</b> Approvals		<b>14</b> Manual		<b>15</b> Version		
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SSR	S	None	0	None	0	None	0	None	0	None	0	None	0	None	0	None	0
Relay	R	Relay output	R	Communication	M0	Screw terminal	0	12-24V ac dc	4	cUL us (soon available)	L	Italian Manual	1	English Manual	2	German Manual	3
0-10V dc	V	Digital Input	1	Modbus RTU	M0	RJ45 (RS485 - 1 DI; need Tu Flat Module)	1	0-10V dc Retransmission	V	4-20 mA Retransmission	A	French Manual	4	0-10V dc	V	4-20 mA	A
4-20 mA	A	0-10V dc Retransmission	V			RJ45 (RS485 - 1 DO; need Tu Flat Module)	2	4-20 mA Retransmission	A					4-20 mA	A		
<b>6</b> Output 2 PID cooling or Alarm	<b>8</b> Output 4		<b>11</b> Options		<b>12</b> Auxiliary Voltage		<b>10</b> Wiring System		<b>11</b> Options		<b>13</b> Approvals		<b>14</b> Manual		<b>15</b> Version		
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None	0	None	0	None	0	None	0	None	0	None	0	None	0	None	0	None	0
SSR	R	Relay output	R	Communication	M0	Screw terminal	0	12-24V ac dc	4	cUL us (soon available)	L	Italian Manual	1	English Manual	2	German Manual	3
Relay	S	Digital Input	1	Modbus RTU	M0	RJ45 (RS485 - 1 DI; need Tu Flat Module)	1	0-10V dc Retransmission	V	4-20 mA Retransmission	A	French Manual	4	0-10V dc	V	4-20 mA	A
0-10V dc	V	0-10V dc Retransmission	V			RJ45 (RS485 - 1 DO; need Tu Flat Module)	2	4-20 mA Retransmission	A					4-20 mA	A		
4-20 mA	A	4-20 mA Retransmission	A					4-20 mA Retransmission	A					4-20 mA	A		

