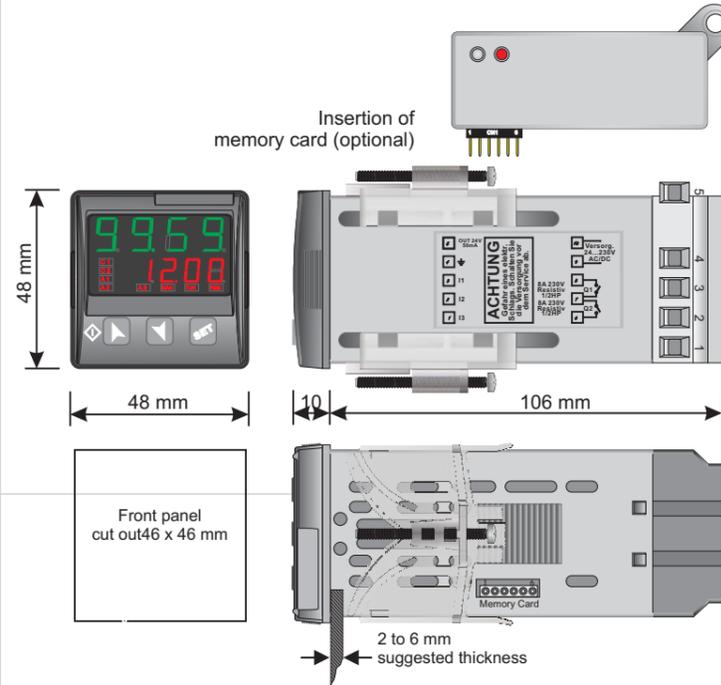


**MANUAL
TIMER TI484801**



Wachendorff Prozesstechnik GmbH & Co. KG
e-mail: support@wachendorff.de
Version 2.1

SIZE AND INSTALLATION



SETPOINT MODIFICATION	
PRESS	DISPLAY
1	Visualizes SETPOINT 1 / 2
2	Modifies selector SET

LED	MEANING
	Report the activation of Q1
	Report the activation of Q2
	Report serial transmission by the TI484801

TECHNICAL DATA

Operating temperature 0-40°C, humidity 35...95uR%

Sealing IP65 (with gasket) on front panel, IP20 box and terminal blocks

Material PC ABS UL94V0 self-extinguishing

Digital Inputs 3PNP/NPN configurable as analogue for potentiometers.(max 28 Vdc in PNP mode)

Outputs 2 relays 8A resistive charge
OUT 24V 30mA(24Vac),40mA(24 Vdc),60mA (110...230Vac)

Back-UP Rechargeable battery, approx. 60days autonomy

Power Supply 24...230Vac/Vdc +/-15% 50/60Hz / 2W

INTRODUCTION

Thanks for choosing a Wachendorff device.
The timer TI484801 can be set in 5 different modes; Timer-ON, Timer-OFF, Pause-Work, Oscillator, PWM (time-proportioned output), all options with independent settings of ON-OFF time.
3 universal digital inputs are available (NPN/PNP/Potential free contact) for external commands like Start, Stop and Reset; one input is also analogue in order to allow the modification of working times by an external potentiometer.
5 different time bases (hundredths, tenths, seconds, minutes, hours).
Counting can be incremental or decremental.



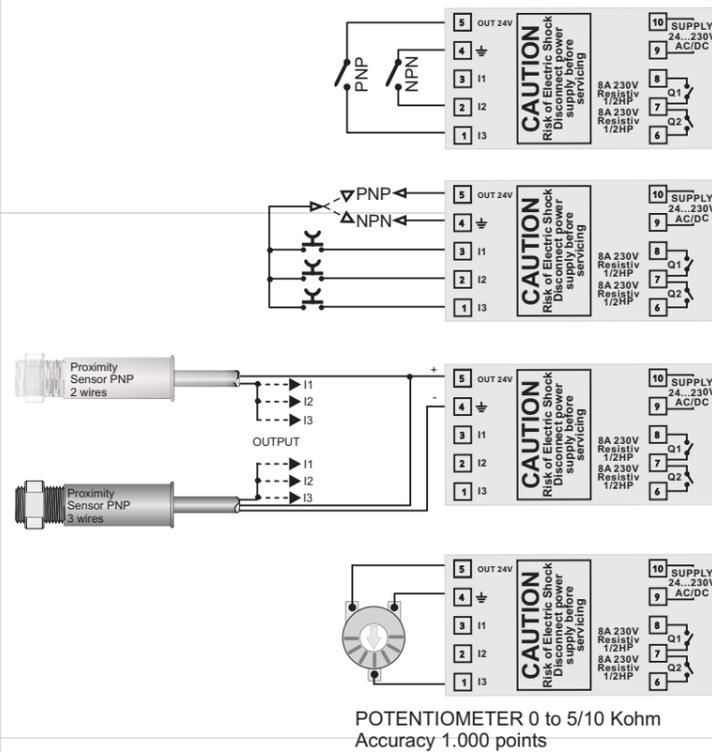
Read carefully the safety guidelines and programming instructions contained in this manual before using/connecting the device.

Disconnect power supply before proceeding to hardware settings or electrical wirings.

Only qualified personnel should be allowed to use the device and/or service it and in accordance to technical data and environmental conditions listed in this manual.

Do not dispose electric tools together with household waste materials in observance of European Directive 2002/96/CE

WIRING DIAGRAM



Potentiometer:
To modify Set1 or Set2 by external potentiometer follow the steps below:
1- use potentiometers 0 to 5/10kohm
2- connect cursor to pin 13; a wrong connection may damage the potentiometer and lead to lock of the device.
3- accuracy on input is max 1000 points, therefore set the parameters "Upper limit" and "Lower limit" with a max difference of 1000 units.
(Ex.: LoS1 to 50,0 and uPS1 to 150,0 to modify time value related to Set1 between 50 and 150 seconds with steps of one tenth). Greater differences would make unstable the less significant digit.
4- To calibrate the scale of potentiometer enter the configuration mode and select: Hin.3 as Pot
Fin.3 as Set1 or Set2
P.tAr as Enable
Exit configuration mode and place potentiometer at minimum level and press key, then place potentiometer at max level and press premer key: the device automatically exit the calibration procedure.
N.B.: A switch-off of the device would interrupt the calibration.

MEMORY CARD (optional)

Parameters and setpoint values can be copied from one device to another using the Memory card. **Attention: Pls. perform an update of the memory card first.**

There are two methods:

> **With the device connected to the power supply** insert the memory card **when the controller is off.**

On activation display 1 shows and display 2 shows (Only if the values stored on Mmemory Card are correct)

By pressing the key display 2 shows Confirm using the key .

The device loads the new data and starts again.

> **With the controller disconnected from the power supply:**

The memory card is equipped with an internal battery with a life of about 1000 uses. Insert the memory card and press the programming button.

When writing the parameters, the LED turns red and on completing the procedure it changes to green. It is possible to repeat the procedure.

▲ UPDATING MEMORY CARD.

To *update* the memory card values, follow the procedure described in the first method, setting display 2 to so as not to load the parameters on controller.

Enter configuration and **change at least one parameter.** Exit configuration. Changes are saved automatically.

LOADING DEFAULT VALUES

This procedure restores the factory settings of the instrument.

PRESS	DISPLAY	DO
1	SET for 3 seconds	On display 1 appears with 1st digit blinking, while display 2 shows PASS
2	or	Modify blinking digit and pass to the next one pressing
3	to confirm	Device loads default values
		Switch the device off and restart it

PRESS	DISPLAY	DO
1	SET for 3 seconds	On display 1 appears with 1st digit blinking, while display 2 shows PASS
2	or	Modify blinking digit and pass to the next one pressing
3	to confirm	Display shows first parameter of configuration table Func
4	or	Scroll parameters
5	+ or	Increase or decrease visualized value pressing and an arrow key
		Enter the new data that will be saved when releasing keys
6	+ or	End configuration, controller exits from configuration

LIST OF PARAMETERS

Func	P-01 Timer Function	Timer functions	Default
	Timer On	Activates output at count end	Default
	Timer Off	Deactivates output at count end	
	Pause/Work	T1 and T2 start in sequency	
	Oscillator	T1 and T2 start in sequency repeatedly	
	PWM	Percentage output activation on fixed time base	

BACKUP MEMORY CONFIGURATION

PaNE	P-02 Power-off Memory	Power-off memory	Default
	Disable	Disabled	Default
	Only Timer	Only timer value in memory	
	Timer / State	Timer value and START/STOP status in memory	

INPUT CONFIGURATION

HiIn1	P-03 Hardware Input 1	Input 1 configuration	Default
	NPN	NPN	
	PNP	PNP	Default
	TTL	TTL	

HiIn2	P-04 Hardware Input 2	Input 2 configuration	Default
	NPN	NPN	
	PNP	PNP	Default
	TTL	TTL	

HiIn3	P-05 Hardware Input 3	Input 3 configuration	Default
	PNP	PNP	Default
	TTL	TTL	
	Pot.	Potentiometer	

HiIn1	P-06 Active State Input 1	Input 1 activation	Default
	High Level	High level	
	Low Level	Low level	
	Rising edge	Transitory in rising	Default

HiIn2	P-07 Active State Input 2	Input 2 activation	Default
	High Level	High level	
	Low Level	Low level	
	Rising edge	Transitory in rising	Default

HiIn3	P-08 Active State Input 3	Input 3 activation	Default
	High Level	High level	
	Low Level	Low level	
	Rising edge	Transitory in rising	Default

FiIn1	P-09 Function Input 1	Input 1 function	Default
	Disable	Disabled	Default
	Start / Stop	Start / Stop	
	Start / Stop-Reset	Start / Stop-Reset	
	Reset-Start / Stop	Reset-Start / Stop	
	Reset / Start / Stop	Reset / Start / Stop	

FiIn2	P-10 Function Input 2	Input 2 function	Default
	Disable	Disabled	Default
	Reset	Reset	

FiIn3	P-11 Function Input 3	Input 3 function	Default
	Disable	Disabled	Default
	Wait	Wait (count lock)	
	Hold	Hold (locks display but count continues)	
	Potent. To SET1	Modify SET1 by potentiometer	
	Potent. To SET2	Modify SET2 by potentiometer	

FtUp	P-12 Function Key UP	Function of	Default
	Disable	Disabled	Default
	Start / Stop	Start / Stop	
	Start / Stop-Reset	Start / Stop-Reset	
	Reset-Start / Stop	Reset-Start / Stop	
	Reset / Start / Stop	Reset / Start / Stop	
	Reset	Reset	
	Wait	Wait (count lock)	
	Hold	Hold (locks display but count continues)	

OUTPUT CONFIGURATION

Out1	P-13 Output Q1 Setup	Output Q1 selection	Default
	Disable	Disabled	Default
	Out Timer 1 n.o.	Timer output 1 n.o.	
	Out Timer 1 n.c.	Timer output 1 n.c.	
	Out Timer 2 n.o.	Timer output 2 n.o.	
	Out Timer 2 n.c.	Timer output 2 n.c.	
	Start	Start	
	Stop	Stop	

Out2	P-14 Output Q2 Setup	Output Q2 selection	Default
	Disable	Disabled	Default
	Out Timer 1 n.o.	Timer output 1 n.o.	
	Out Timer 1 n.c.	Timer output 1 n.c.	
	Out Timer 2 n.o.	Timer output 2 n.o.	
	Out Timer 2 n.c.	Timer output 2 n.c.	
	Start	Start	
	Stop	Stop	

DISPLAY CONFIGURATION

Type	P-15 Type of Timer	Count mode	Default
	Incremental	Incremental	Default
	Decremental	Decremental	

SETPOINT CONFIGURATION

Format	P-16 Format Set 1	Count format	Default
	Second	Seconds, Cents	
	Second	Seconds, Tenths	Default
	Second	Seconds	
	Minute	Minutes, Seconds	
	Hour	Hour, Minutes	
	Hour	Hour	

Display	P-18 Display Set 1	Set 1 visualization	Default
	Disable	Disabled	
	Visualized	Visualized	
	Modifiable	Visualized and modifiable	Default

Display	P-19 Display Set 2	Set 2 visualization	Default
	Disable	Disabled	Default
	Visualized	Visualized	
	Modifiable	Visualized and modifiable	

Limit	P-20 Lower limit Set 1	Set 1 lower limit	0.0
			0.0

Limit	P-21 Upper limit Set 1	Set 1 upper limit	99.9
			99.9

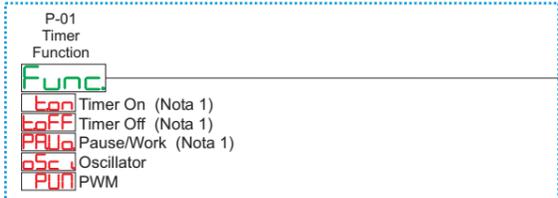
Limit	P-22 Lower limit Set 2	Set 2 lower limit	0.0
			0.0

Limit	P-23 Upper limit Set 2	Set 2 upper limit	99.9
			99.9

Enable	P-24 Potent. tarature	Potentiometer calibration procedure	Default
	Disable	Disabled	Default
	Enable	Enabled	

TI484801 "TIMER"

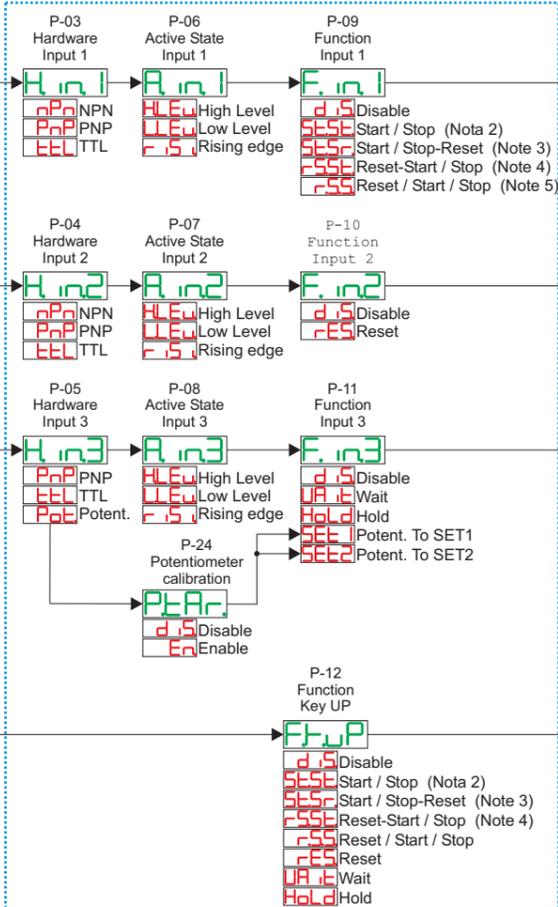
FUNCTION CONFIGURATION



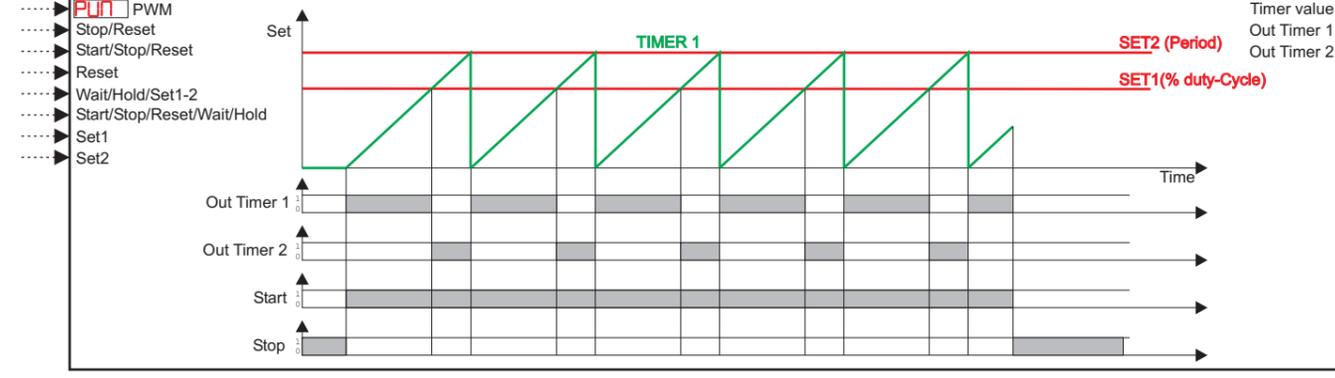
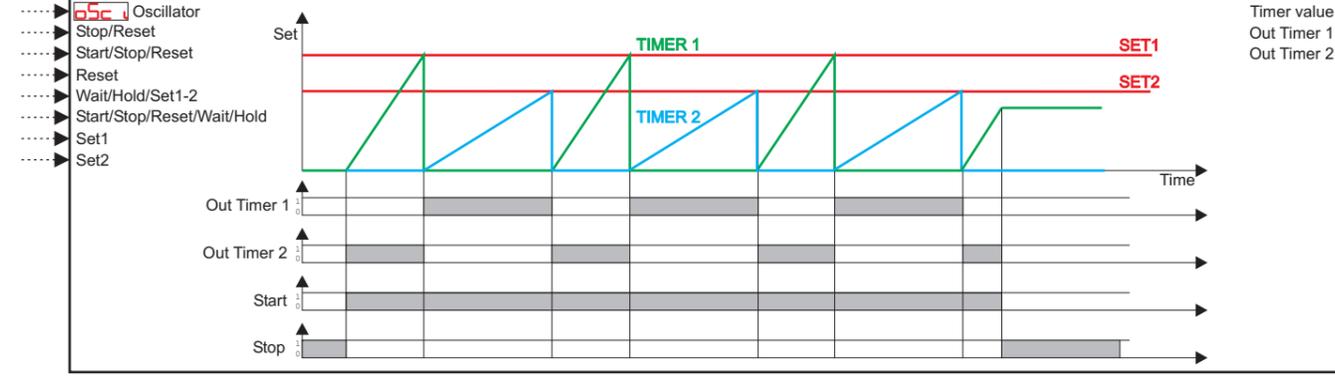
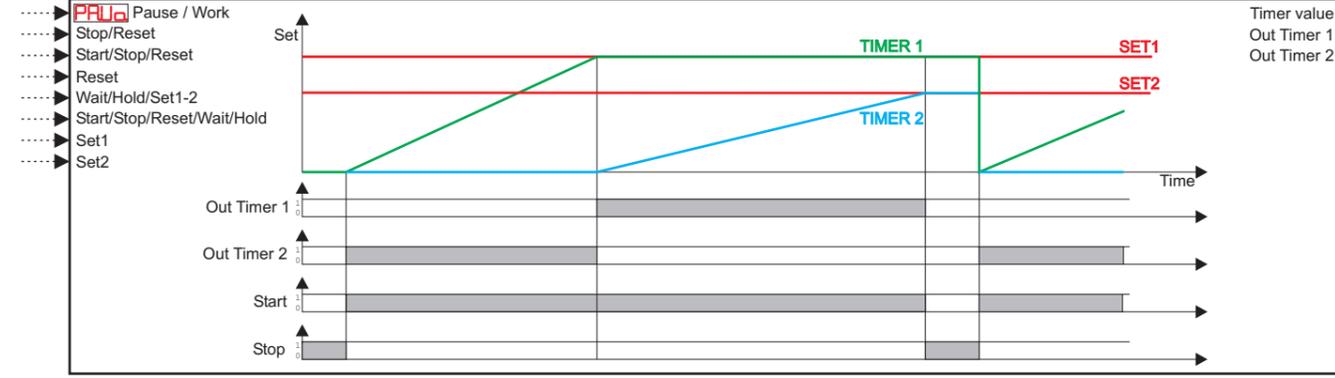
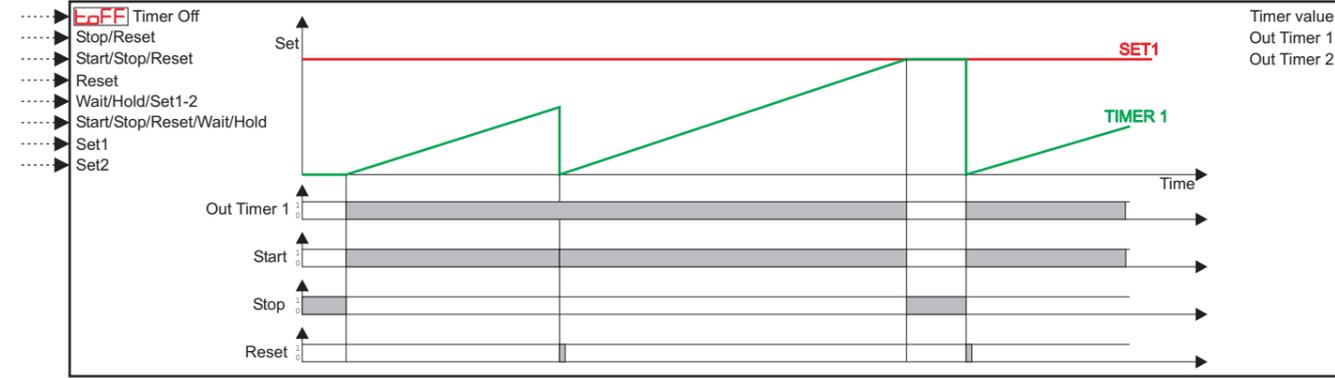
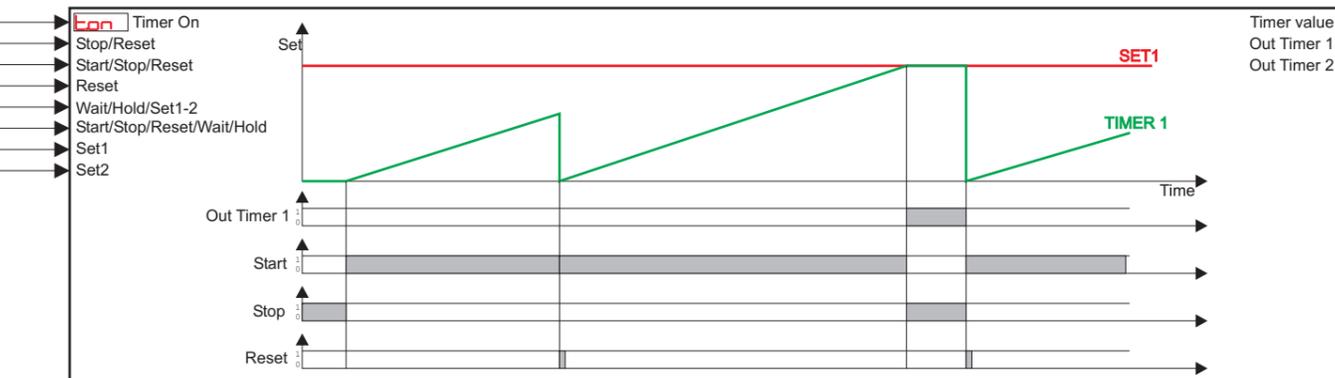
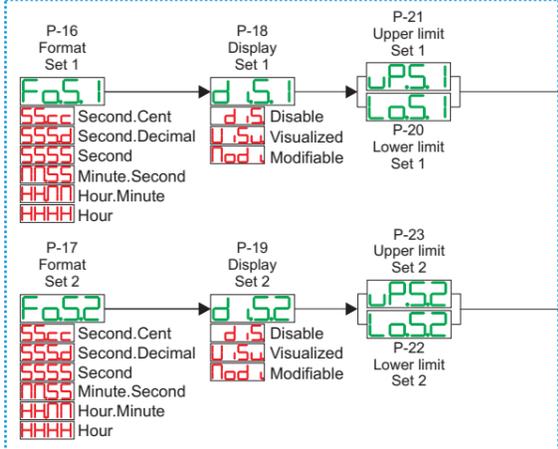
BACKUP MEMORY CONFIGURATION



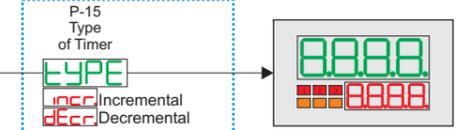
INPUT CONFIGURATION



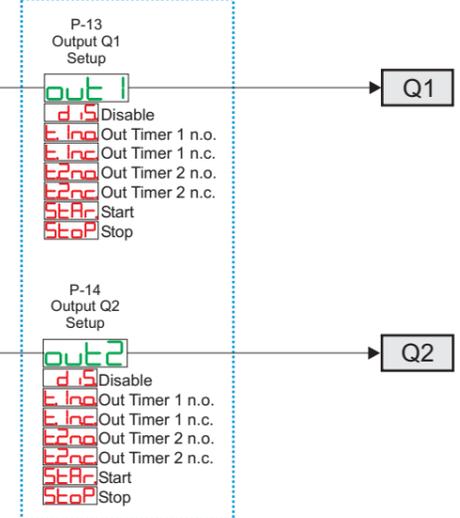
SETPOINT CONFIGURATION



DISPLAY CONFIGURATION



OUTPUT CONFIGURATION



INPUT TYPE	NPN INPUT	PNP INPUT	TTL INPUT
H	< 4,7 v	> 5,7 v (I1, I2) > 12,4 v (I3)	> 2,5 v
L	> 5,7 v	< 4,7 v (I1, I2) < 10,2 v (I3)	< 2,0 v

TABLE of ERROR MESSAGES

- E-01** ERROR WRITING EEPROM Memory (Nota 1)
- E-02** ERROR READING EEPROM Memory (Nota 1)
- E-03** Incorrect parameters (Nota 1)
- E-04** Incorrect calibration data (Nota 1)
- E-05** Incorrect status data (Nota 1)
- E-06** Incorrect BACKUP registers (Nota 2)

Note 1:
Switch the device off and restart it; if error is still notified, contact technical service

Note 2:
Discharged battery; keep the device connected to power supply in order to recharge the battery.

Note 1: In this timer functioning, if P-06 Active State Input 1 = Rising Edge or P-09 Function Input 1 = Disable, at count end (reaching setpoint), timer will switch automatically to STOP.

Note 2: This function not reset timer value, and so it requires an input for the reset.

Note 3: This function reset timer at STOP.

Note 4: This function reset timer at START.

Note 5: This function è attiva solo se P-06 Active State Input 1 = Rising Edge

Δ In PWM mode, the only option available on parameters 16 **FAS1** and 17 **FAS2** for format of SET1 and SET2 is **5555** (seconds). Low and upper limits for SET1 (related to percentage of work or Duty Cycle) are allowed in the range 0 ... 100 (%).