⚠ Read this document carefully before using this device. The guarantee will be expired by device demages if you don't attend to the directions in the user manual. Also we don't accept any compensations for personal injury, material damage or capital disadvantages.

ENDA ETM2432 DIGITAL TIMER

Thank you for choosing **ENDA ETM2432** digital timer.

▶ 77 x 35mm sized.
▶ Dual contact output for timing control.
▶ External start, reset, and gate inputs.
▶ Hours - minutes and minutes - seconds indications can be selected.
▶ Scale 0:01 .... 99:59 minutes and 0:01 .... 99:59 hours
▶ Time increasing and decrement steps can be adjusted.
▶ Counting in downward direction.
▶ Start and stop process can be controlled by front panel.
▶ 8 different warning tones.
▶ Upper and lower limits can be adjusted to setpoint value.

CE   R⊗HS Compliant

Order Code : ETM2432 - ☐☐☐☐☐☐
                                               1

1 - Supply Voltage
   230VAC...230V AC
   24............24V AC/DC
   12............12V AC/DC
   SM............9-30V DC / 7-24V AC

CONNECTION DIAGRAM

⚠ **ENDA ETM2432** is intended for installation within control panels. Make sure that the device is used only for intended purpose. The shielding must be grounded on the instrument side. During an installation, all of the cables that are connected to the device must be free of electrical power. The device must be protected against inadmissible humidity, vibrations, severe soiling. Make sure that the operation temperature is not exceeded. All input and output lines that are not connected to the supply network must be laid out as shielded and twisted cables. These cables should not be close to the power cables or components. The installation and electrical connections must be carried out by a qualified staff and must be according to the relevant locally applicable regulations.

ENDA INDUSTRIAL ELECTRONICS   SN: XXXXXXXXX
ETM2432-230VAC DIGITAL TIMER
CE   8 680407 711703
230V AC +10% -20% 50/60Hz
250V AC 8A RESISTIVE LOAD
OUT1 OUT2 GATE RESET START +12V
1 2 3 4 5 6 7 8 9 10 11 12

ENDA INDUSTRIAL ELECTRONICS   SN: XXXXXXXXX
ETM2432-24 DIGITAL TIMER
CE   8 680407 711710
24V AC/DC +10% -20% 50/60Hz
250V AC 8A RESISTIVE LOAD
OUT1 OUT2 GATE RESET START +12V
1 2 3 4 5 6 7 8 9 10 11 12

□ **Equipment is protected throughout by DOUBLE INSULATION**

⊖ **Holding screw 0.4-0.5Nm.**

NOTE :
SUPPLY:

184-253V AC 50/60Hz 5VA   7 ←Phase
                                              8 ←Neutral

Fuse F 100 mA 250V AC

Switch

230V AC Supply

⚠ **Fuse should be connected.**

Cable size: 1,5mm²

Note: 1) Mains supply cords shall meet the requirements of 60227 or IEC 60245
2) In accordance with the safety regulations, the power supply swich shall bring the identification of the relevant instrument and it should be easily accessible by the operator.

up to date: 21032019, modification reserved and can be change any time previous notice !

TECHNICAL SPECIFICATIONS

ENVIRONMENTAL CONDITIONS

Ambient/Storage temperature	0 ... +50 / °C -25... +70°C
Relative Humidity	Max. humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
Protection Class	According to EN60529; Front panel: IP65 Rear panel : IP20
Height	Max. 2000m

⚠ **Do not use the device in locations subject to corrosive and flammable gasses.**

ELECTRICAL CHARACTERISTICS

Supply	230V AC ±%10, 50/60Hz or 12/24V AC/DC ±%10, 50/60Hz or 9-30V DC/7-24V AC, 50/60Hz
Power Consumption	Max. 7VA
Wiring	2.5mm² screw-terminal
Scale	Selectable 99:59 min. or hour.
Sensitivity	1 second.
Time Accuracy	±%1
Indicator	4 digits, 12.5mm, 7 segment red LED
EMC	EN 61326-1: 2013 (Performance criterion B is satisfied for EN 61000-4-3)
Safety Requirements	EN 61010-1: 2010 (Pollution degree 2, overvoltage category II)

OUTPUT

Out	2 Relays: 250V AC, 8A (for resistive load), NO and NC control output.
Life Expectancy for Relay	30.000.000 Switching for no-load operation; 300.000 switching for 8A resistive load at 250VAC.

START INPUT

Input Type	Mechanical contact (Minimum = 50ms)

RESET INPUT

Input Type	Mechanical contact (Minimum = 50ms)

GATE INPUT

Input Type	Mechanical contact (Minimum = 50ms)

HOUSING

Housing Type	Suitable for flush-panel mounting according to DIN 43 700.
Dimensions	W77xH35xD71mm
Weight	Approx. 198g (After packing)
Enclosure Materials	Self extinguishing plastics

⚠ **While cleaning the device, solvents (thinner, benzine, acid etc.) or corrosive materials must not be used.**

DIMENSIONS

77mm
35mm

Depth
60mm   5mm

For removing mounting clamps:
- Push the flush-mounting clamp in direction **1** as shown in the figure below.Then, pull out the clamp in direction **2** .

Flush mounting clamp

Flush mounting clamp   Panel

2

Rubber Packing

Panel Cut-out
71,5mm
29,5mm

Flush mounting clamp
2
1

Note: 1) Panel thickness should be maximum 7mm.
2) If there is not 60mm free space at the back side of the device,it would be difficult to remove it from the panel.
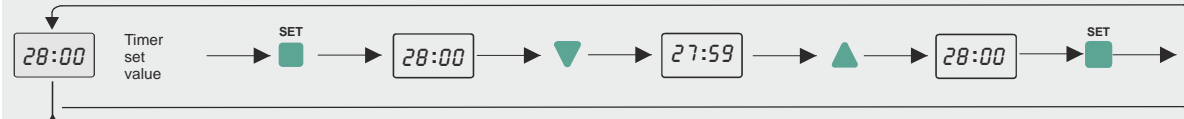
OUT1 LED : Specifies the output OUT1.
OUT2 LED : Specifies the output OUT2.
HOUR LED : Selected time unit is **HOUR**.
MIN LED : Selected time unit is **MINUTE**.

ENDA DIGITAL TIMER ETM2432

SET Timer value can be set in Running Mode , Parameter values can be set in Programming Mode and newly assigned parameter values can be saved . After parameter values are changed , new values are saved to memory and Running Mode is returned either by pressing **SET** button or by waiting 10 seconds.

▲ Timer is started by pressing ▲ button for 1 second , when 5tr.2 is selected (Except,either parameter or time set value changing) . Menu parameters can be accessed in Programming Mode. Parameter set values can be increased. Timer set value can be increased in Time Config Mode. Timer set value increases gradually accelerated by pressing continuously.

▼ Timer and audible warning are stopped by pressing ▼ button for 1 second. when 5tr.2 is selected (Except,either parameter or time set value changing) . Menu parameters can be accessed in Programming mode. Parameter set values can be decreased. Timer set value can be decreased in Time Config Mode. Timer set value decreases gradually accelerated by pressing continuously.

TIME CONFIG MODE

28:00 Timer set value → **SET** → 28:00 → ▼ → 27:59 → ▲ → 28:00 → **SET** →

Revision number:
In Running Mode, if the **SET** , ▲ and ▼ keys are pressed together, revision number appears on display. (In order to show the revision number, 5tr.t parameter must be set to 5tr.1 in ConF menu).

Running Mode switches to Time Config Mode by pressing **SET** button. Display indicates configuration mode is opened by flashing. Desired timer set value can be set by pressing ▼▲ buttons. After desired timer value set, new timer set value is saved to memory and Running Mode is returned either by pressing **SET** button or by waiting 10 seconds.

Programing Menu is opened and ConF parameter is seen by pressing **SET** and ▲ buttons at same time. Switching between menu parameters is done by pressing **SET** button. While one of menu parameter is seen, sub-menu parameter is opened when pressing ▼ button.

In order to change sub-menu parameters value, press ▼▲ buttons while holding **SET** button down.When **SET** button is released , all changes will be saved to memory and related sub-menu parameter is returned. Programming Menu is returned from sub-menu parameters by pressing ▼▲ buttons at same time. In the sub-menu , all changes will be saved to memory and Running Mode is returned from sub-menu if no key is pressed for 10 seconds. In programming menu , all changes can be saved to memory and Running Mode can be returned from programming menu either by pressing **SET** ▲ buttons at same time or if no key is pressed for 10 seconds.

Programming Menu

ConF → **SET** → t.SEt → **SET** → P.SEC →
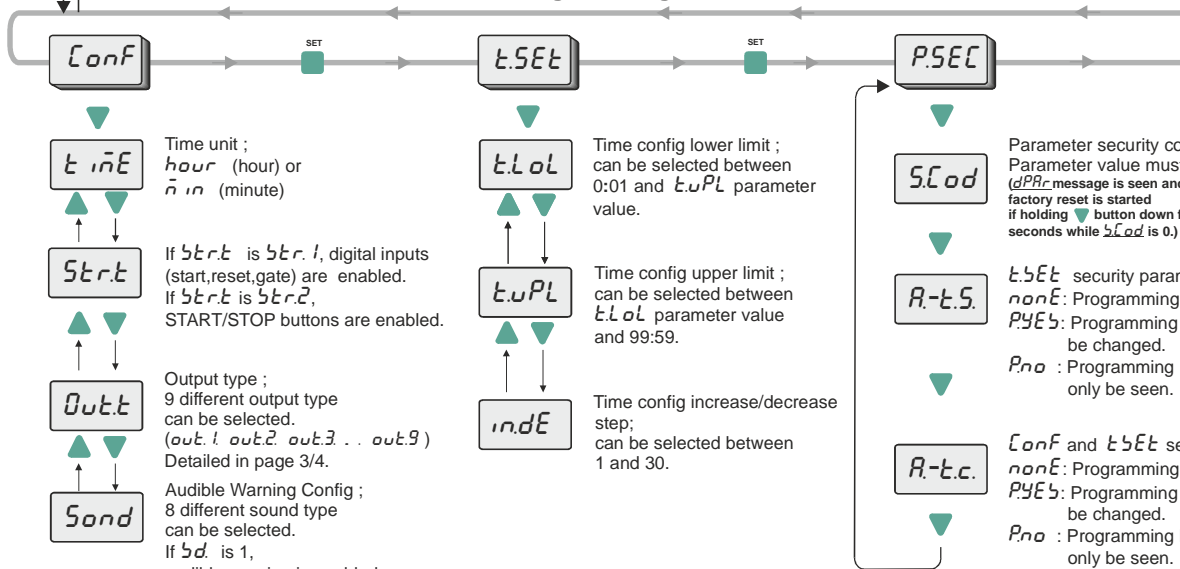
ConF
▼
t.inE — Time unit ; hour (hour) or min (minute)
▲▼
5tr.t — If 5tr.t is 5tr.1, digital inputs (start,reset,gate) are enabled. If 5tr.t is 5tr.2, START/STOP buttons are enabled.
▲▼
Out.t — Output type ; 9 different output type can be selected. (out.1 out.2 out.3 . . out.9) Detailed in page 3/4.
▲▼
Sond — Audible Warning Config ; 8 different sound type can be selected. If 5d. is 1, audible warning is enabled.

t.SEt
▼
t.LoL — Time config lower limit ; can be selected between 0:01 and t.uPL parameter value.
▲▼
t.uPL — Time config upper limit ; can be selected between t.LoL parameter value and 99:59.
▲▼
in.dE — Time config increase/decrease step; can be selected between 1 and 30.

P.SEC
▼
5.Cod — Parameter security code ; Parameter value must be 432. (dPAr message is seen and factory reset is started if holding ▼ button down for 4 seconds while 5Cod is 0.)
▼
A-t.S. — t.SEt security parameter ; nonE: Programming Menu invisible. PYE5: Programming Menu parameter can be changed. Pno : Programming Menu parameter can only be seen.
▼
A-t.c. — ConF and t.SEt security parameter ; nonE: Programming Menu invisible. PYE5: Programming Menu parameter can be changed. Pno : Programming Menu parameter can only be seen.

Parameter Configuration Diagram

t.inE — **SET** → hour — **SET** → ▼ → min — **SET** → ▲ → hour

In order to set related parameter to desired value , hold **SET** button down, when display is started to flash use ▲▼ buttons.
Value increases/decreases gradually accelerated by pressing ▲▼ buttons continuously.

ENDA ETM2432 DIGITAL TIMER PARAMETERS

Parameter Name	Functional Specification	Min.	Max.	Unit	Factory Settings
CONFIGURATION PARAMETERS					
t.inE	Device time config	00:01	99:59	hr:min min:sec	min
5tr.t	Device input control parameter	5tr.1	5tr.2		5tr.1
Out.t	Device output control parameter	Out.1	out.9		Out.1
Sond	Device audible warning control parameter	5d.1	5d8		5d.1
TIMER CONFIGURATION PARAMETERS					
t.LoL	Time config lower limit define parameter	00:01	99:59		00:01
t.uPL	Time config upper limit define parameter	00:02	99:59		99:59
in.dE	Time config increase/decrease coefficient parameter				
SECURITY PARAMETERS					
5Cod	Security code parameter	0	9999		0
A-t.S.	Time config security parameter				PYE5
A-t.c.	Menu security parameter				PYE5

ENDA ETM 2432 DIGITAL TIMER OUTPUT TYPES

NOTE : Selected area indicates the moment of power-up, if the external "START" input is active.

Out.1

When device is powered, If START input is set OUT1 and OUT2 relays are turned on. When timer set value is expired , OUT1 and OUT2 relays are turned off. If RESET input is set before timer set value expires OUT1 and OUT2 relays are turned off and timer set value is renewed.

Out.2

When device is powered, If START input is set OUT1 and OUT2 relays are turned on. When timer set value is expired, OUT1 and OUT2 relays are turned off. If RESET input is set before timer set value is expired OUT1 and OUT2 relays are turned off and timer set value is renewed. If START input is set before timer set value is expired , relays remain turned-on and timer set value is renewed and timer starts counting down.

Out.3

When device is powered , If START input is set timer starts counting down. When timer set value is expired, OUT1 and OUT2 relays are turned on and timer set value is renewed. If START input is set again, OUT1 and OUT2 relays are turned off and timer starts counting down. f RESET input is set OUT1 and OUT2 relays are turned off and timer stops counting down.

Out.4

When device is powered, If START input is set OUT1 and OUT2 relays are turned on. When timer set value is expired, OUT1 and OUT2 relays are turned off , timer set value is renewed and timer starts counting down again.This process periodically continues. If RESET input is set OUT1 and OUT2 relays are turnef off and timer stops counting down.

Out.5

When device is powered, If START input is set OUT1 and OUT2 relays are turned on.When START input is reset timer starts to counting down. When timer set value is expired, OUT1 and OUT2 relays are turned off and timer set value is renewed. If START input is set while timer counts down, timer set value is renewed. When START input is reset timer starts to counting down. If RESET input is set OUT1 and OUT2 relays are turned off and timer stops counting down.

Out.6

When device is powered, If START input is set OUT1 and OUT2 relays are turned on and timer starts counting down. If START input is reset , timer value is renewed to timer set value and timer starts to counting down. If START input is set again , timer value is renewed to timer set value.When timer set value is expired, OUT1 and OUT2 relays are turned off and timer value is renewed to timer set value. If RESET input is set,OUT1 and OUT2 relays are turned off and timer value is renewed to timer set value.

Out.7

When device is powered, If START input is set OUT1 and OUT2 relays are turned on and timer starts counting down from timer set value .When timer set value is expired,OUT1 and OUT2 relays are turned off.If START input is reset after an timer set value is expired,timer value is renewed to timer set value.If START input is reset while timer counts down ,OUT1 and OUT2 relays are turned off. If RESET input is set while START input is set , OUT1 and OUT2 relays are turned off and timer value is renewed to timer set value.If RESET input is reset while START input is set , OUT1 and OUT2 relays are turned on and timer starts counting down

Out.8

When device is powered, If START input is set OUT1 relay is turned on and timer starts counting down from timer set value.When timer set value is expired, OUT2 relay is turned on.If START input is reset when timer set value is expried, timer value is renewed to timer set value . If START input is reset while timer counts down OUT1 and OUT2 relays are turned off. If RESET input is set while START input is set , OUT1 and OUT2 relays are turned off and timer value is renewed to timer set value. If RESET input is reset while START input is set , OUT1 relay is turned on and timer starts counting down.

Out.9

When device is powered, If START input is set , timer starts counting down. When timer set value is expired, OUT1 and OUT2 relays are turned on. If START input reset when timer set value is expired, OUT1 and OUT2 relays are turned off and timer value is renewed to timer set value.If START input is reset while timer counts down , timer value is renewed to timer set value. If RESET input is set while START input is set , timer value is renewed to timer set value. If RESET input is reset while START input is set , timer value is renewed to timer set value.and starts counting down.

GATE USAGE

When device is powered, If GATE input is set ,timer set value is seen on display and timer stops counting down. If GATE input is reset , timer continue where it remains. If RESET input is set while GATE input is reset, OUT1 and OUT2 relays are turned off and timer value is renewed to timer set value.