

Altech Corp.®

Serving the Automation & Control Industry since 1984



ISO 9001
QMI-SAI Global



Altech Smart Relay & Digital Multi-Timer

Altech® Smart Relay



Standards and Certifications

- UL 508
- IEC 61000-3-2
- IEC 61000-4-2-1~11

Features

- Supports upto 48 I/Os (32 digital inputs & 16 digital outputs)
- DST Feature Available
- Backlit LCD Screen for display & modification of pre-selected parameters of functional blocks, viewing I/O status and programming on the device
- PC software for programming, online & offline simulation, documentation & printing
- Designed for use in automation for commercial & Industrial sectors
- Modbus Communication

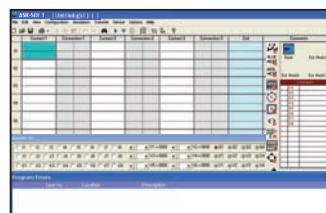
Programming Features

- 250 lines of ladder programming
- 16 soft text messages, Time Switches, Compare Counters, Timers, Counters & 12 analog functions

Function Blocks

Timers:	16 (ON Delay, Interval, Cyclic ON-OFF, OFF Delay)
Counters:	16 (Up/Down, Retentive selectable)
Time Switches:	16 (Weekly / Daily)
Compare Counters:	16
Analog Functions:	12 (DC Model)
Soft Text Messages:	16 (Priority Driven)
Auxiliary Relays:	32

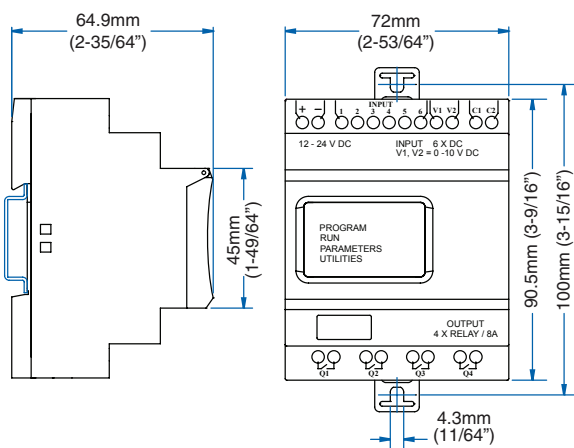
FREE SOFTWARE DOWNLOAD



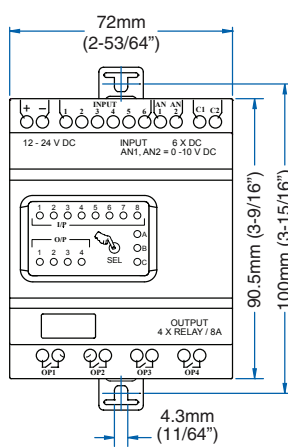
AltechCorp.com/SmartRelay



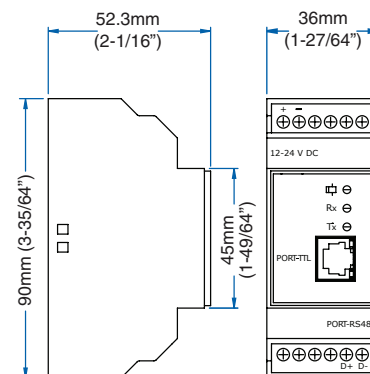
Mounting Dimensions



**Programmable Smart Relay
Base Module**



**Programmable Smart Relay
Expansion Module**



**Programmable Smart Relay
Communication Module**

Altech Smart Relay

Technical Specifications

I/O Extensions (Max.)	3	
Utilization Category	AC-15	Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A
	DC-13	Rated Voltage (Ue): 24/125/250 V, Current (Ie): 2.0/0.22/0.1 A
Power Reserve (For Clock Only)	150h at -10°C to +55°C	
Operating Temperature	-10°C to +55°C	
Storage Temperature	-25°C to +70°C	
Humidity (Non Condensing)	95% (Rh)	
Enclosure	Flame Retardant UL 94-V0	
Mounting	Base / DIN Rail	
Degree of Protection	IP 20 for Terminals, IP 40 for Enclosure	



Base Module



Expansion Module

Base Module

Cat. No.	ASR-B120AC	ASR-B24DC
Supply Voltage (-20% to + 10%)	110-240 VAC (50/60Hz)	12-24 VDC
Power Consumption	5W	5W
Max. Supply current	36 mA	360 mA
Digital Inputs	8	6
Digital Input Range	(0-40VAC) OFF, (80-265VAC) ON	(0-4VDC) OFF, (8-26.4VDC) ON
Analog Inputs	N/A	2 (can be used as Digital Inputs)
Analog Input Range	N/A	0 to 10 VDC
Digital Relay Output	4 NO (8A@240V AC, 5A@30V DC)	4 NO (8A@240V AC, 5A@30V DC)
Weight	0.51 lb. (230 g)	0.51 lb. (230 g)

Expansion Module

Cat. No.	ASR-E120AC	ASR-E24DC
Digital Inputs	8	6
Digital Input Range	(0-40VAC) OFF, (80-265VAC) ON	(0-4VDC) OFF, (8-26.4VDC) ON
Analog Inputs	N/A	2 (can be used as Digital Inputs)
Analog Input Range	N/A	0 to 10 VDC
Digital Relay Output	4 NO (8A@240V AC, 5A@30V DC)	4 NO (8A@240V AC, 5A@30V DC)
Weight	0.5 lb. (225 g)	0.5 lb. (225 g)

RS485 Communication Module (including communication cable)

Input	TTL Level
Output	RS-485 protocol (two wires, D+, D-)
Number of Nodes	32 standard unit loads
Isolation Voltage	2000 Vrms
Baud Rate	300, 600, 1200, 2400, 4800, 9600
Operating temperature	-10°C to +55°C
Storage temperature	-20°C to +70°C
LED Indicators	Red LED's for Tx & Rx. Green LED for Power indication
Weight	0.19 lb. (84 g)



Communication Cable

Cat. No.	ASR-C485-120AC	ASR-C485-24DC
Supply Voltage	110-240 VAC	12-24 VDC
Weight	0.18 lb. (80 g)	0.19 lb. (84 g)

Accessories



Cat. No.	ASR-MC	ASR-USB	ASR-RS232
	Memory Card	USB Cable	Serial RS232 Cable
Weight	0.18 lb. (80 g)	0.22 lb. (100 g)	0.24 lb. (110 g)

Connection Diagrams

SUPPLY, INPUT & OUTPUT CONNECTIONS

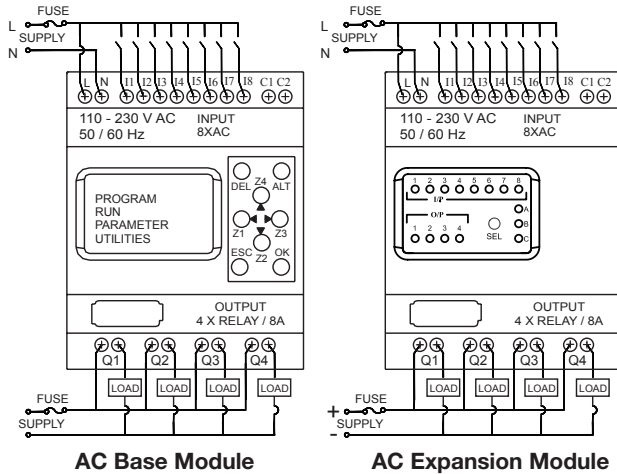


Fig. 1

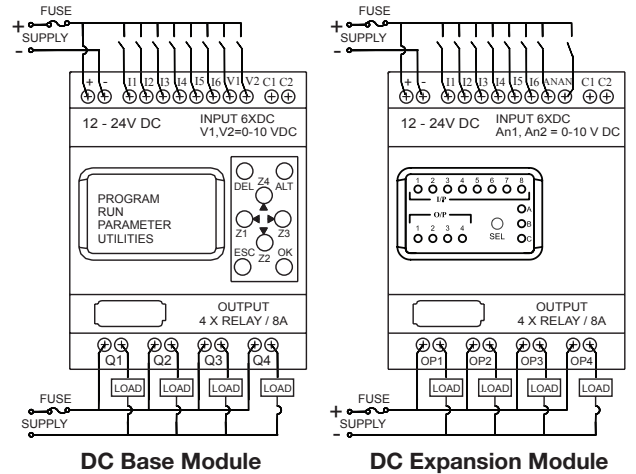


Fig. 2

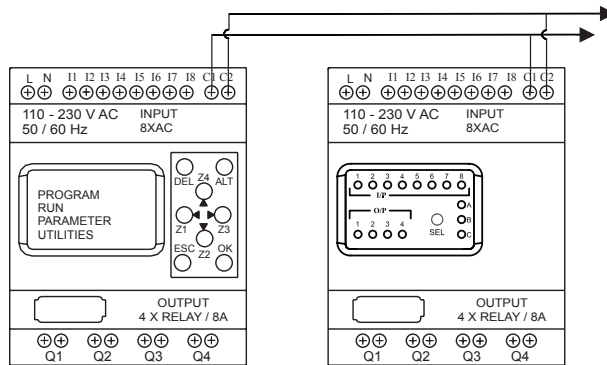


Fig. 3

Connection Between Base Module & Expansion

Same for both AC & DC

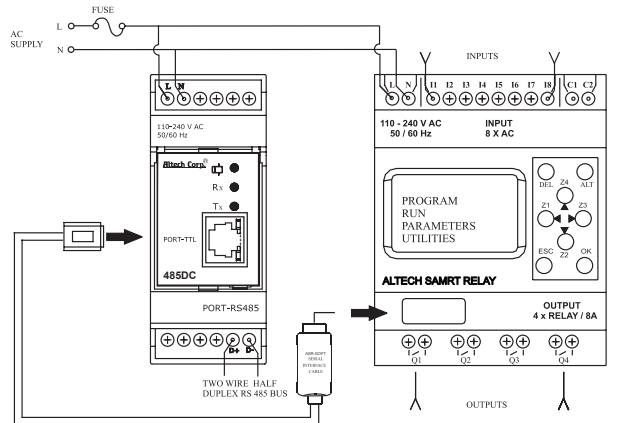


Fig. 4

Connection Between Base Module & Communication Module

Power Supply Wiring

1. Although the Altech Smart Relay has been designed to withstand the negative effects of any electrical noise that might be present its power supply. It may be necessary to insert an isolation transformer between the supply and line terminals of the Altech Smart Relay.
2. While using the DC Altech Smart Relay, run the 24 VDC Input line separate from 100 ~240V AC power lines.

Wiring of Input/Output

1. Separate input and output lines.
2. When the output lines are running close to power supply or input lines, use shielded wires and ground them.

Universal Digital Multi-Timer

Altech's AMT-Series of Universal Digital Multi-Timers comprises 4 models featuring 8 or 18 timer functions to offer highest flexibility in controlling operations. The time range is adjustable from 0.1s to 999h. An LCD display shows current run time information.

Features

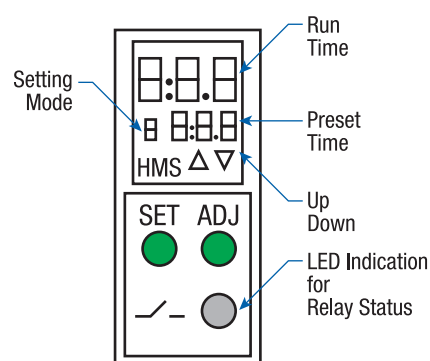
- Multifunctional Timer (8 or 18 Functions)
- Universal Voltage 24~265 VAC/ DC
- Wide Time Range: 0.1s ~ 999h
- 3 Digit LCD Display for Preset Time and Run Time
- DIN Rail Mounted
- 17.5mm Width

Digital Timers

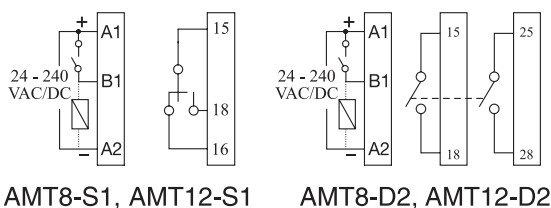
Cat. No.	AMT8-S1	AMT8-D2	AMT12-S1	AMT12-D2
Output Contacts	1 C/O	2 NO	1 C/O	2 NO
No. of Timer Functions	8	8	18	18
Functions / [setting mode]	1) ON Delay [A]		1) ON Delay [0]	
	2) Cyclic OFF/ ON [b]		2) Cyclic OFF/ ON [1]	
	3) Cyclic ON/ OFF [c]		3) Cyclic ON/ OFF [2]	
	4) Signal ON/ OFF [d]		4) Impulse on Energizing [3]	
	5) Signal OFF Delay [E]		5) Accumulative Delay on Signal [4]	
	6) Interval [F]		6) Accumulative Delay on Inverted Signal [5]	
	7) Signal OFF/ ON [G]		7) Accumulative Impulse on Signal [6]	
	8) One Shot Output [H]		8) Signal ON Delay [7]	
			9) Inverted Signal ON Delay [8]	
			10) Signal OFF Delay [9]	
			11) Impulse ON/ OFF [a]	
			12) Signal OFF/ ON [b]	
			13) Leading Edge Impulse 1 [c]	
			14) Leading Edge Impulse 2 [d]	
			15) Trailing Edge Impulse 1 [E]	
			16) Trailing Edge Impulse 2 [F]	
			17) Delayed Impulse [G]	
			18) Inverted Signal ON Delay 2 [H]	

Specifications

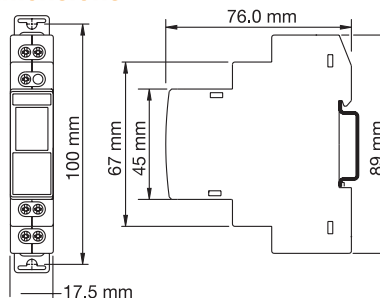
Supply Voltage	24 - 265 VAC/ DC (50, 60Hz)
Power Consumption	10 VA max.
Timing Range	0.1s ~ 999h
Reset Time	200ms max.
Repeat Accuracy	+/-0.5%
Output Contact Rating	8A @ 240 VAC/ 24 VDC (resistive)
Electrical Life	10,000 switching cycles
Mechanical Life	2,000,000 switching cycles
AC-15 Rating	Rated Voltage (Ue): 125/ 240V, Rated Current (Ie): 3/1.5A
DC-13 Rating	Rated Voltage (Ue): 125/ 250V, Rated Current (Ie): 2/0.22/0.1A
Operating Temperature	-10°C ~ +55°C (+14°F ~ 131°F)
Storage Temperature	-20°C ~ +65°C (-4°F ~ 149°F)
Weight	85g (0.14lb.)
Protection Enclosure	IP30
Protection Terminals	IP20
Torque	0.40 Nm (3.5 lb.in.)
Terminal Wire Size	0.3-2.5 mm ² (22-14 AWG)



Connection Diagrams



Dimensions

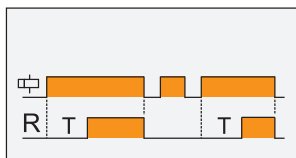


Scan this QR code for more information.

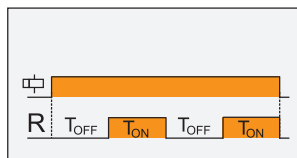


AMT8 (8 Functions)

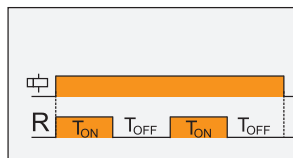
ON DELAY [A]



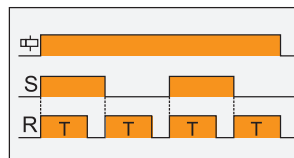
CYCLIC OFF/ON, (Sym, Asym) [B]



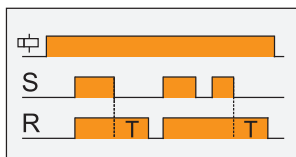
CYCLIC ON/OFF, (Sym, Asym) [C]



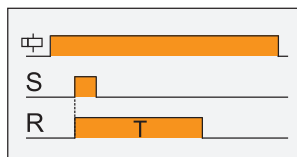
SIGNAL ON/OFF [D]



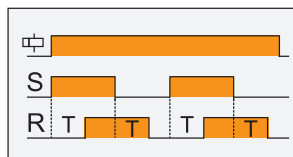
SIGNAL OFF DELAY [E]



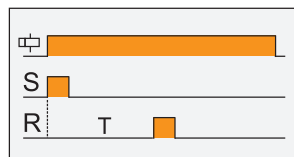
INTERVAL [F]



SIGNAL OFF / ON [G]

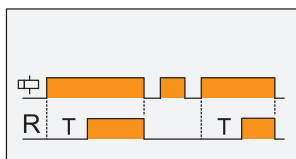


ONE SHOT OUTPUT [H]

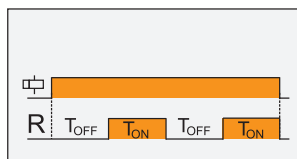


AMT12 (18 Functions)

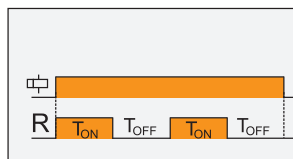
ON DELAY [Q]



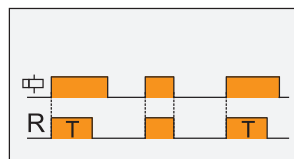
CYCLIC OFF/ON, (Sym, Asym) [1]



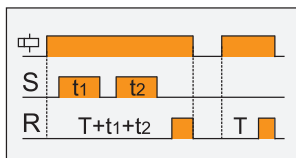
CYCLIC ON/OFF, (Sym, Asym) [2]



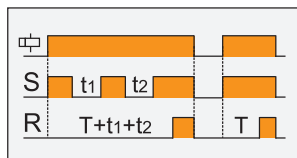
IMPULSE ON ENERGIZING [3]



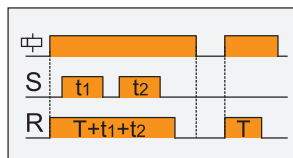
ACCUMULATIVE DELAY ON SIGNAL [4]



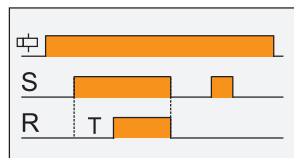
ACCUMULATIVE DELAY ON INVERTED SIGNAL [5]



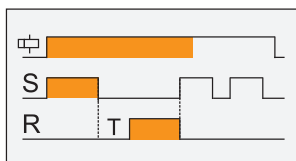
ACCUMULATIVE IMPULSE ON SIGNAL [6]



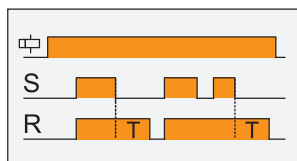
SIGNAL ON DELAY [7]



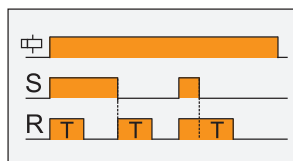
INVERTED SIGNAL ON DELAY [8]



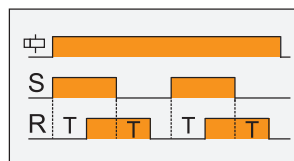
SIGNAL OFF DELAY [9]



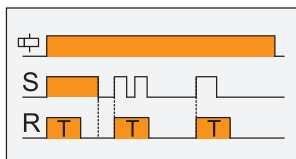
IMPULSE ON/OFF [A]



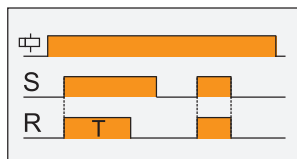
SIGNAL OFF/ON [B]



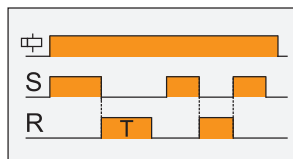
LEADING EDGE IMPULSE1 [C]



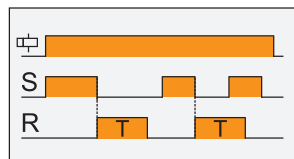
LEADING EDGE IMPULSE2 [D]



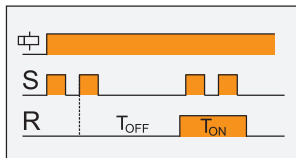
TRAILING EDGE IMPULSE1 [E]



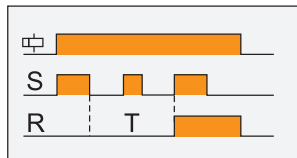
TRAILING EDGE IMPULSE2 [F]



DELAYED IMPULSE [G]



INVERTED SIGNAL ON DELAY-TYPE 2 [H]



□ Supply Voltage
 S Signal B1
 R Relay Output
 T Set Time
 T_{ON} Set ON Time
 T_{OFF} Set OFF Time

Universal Multi-Timer

Altech's Universal Multi-Timers comprises 2 models featuring 2 or 10 timing functions to offer highest flexibility in controlling operations. The time range is adjustable from 0.1s to 100h. Dials on the front make it easy to use.

Altech Corp.®

Features

- Multifunctional Timer (10 Functions)
- Asymmetric Timer (2 Functions)
- Universal Voltage 12-265V AC/ DC
- Wide Time Range: 0.1s ~ 100h
- LED Indicator for Power and Relay Status
- DIN Rail Mounted
- 17.5mm Width



Digital Timers

CAT. NO.

AMT10-S1

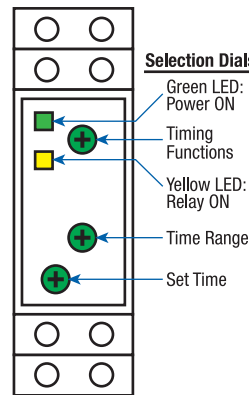
AMTAS-S1

Output Contacts	1 C/O	1 C/O
No. of Timer Functions	10	2
Functions	1) Signal ON Delay [stn]	1) Assymetric ON/ OFF [anf]
	2) Cyclic ON/ OFF [cnf]	2) Assymetric OFF/ ON [afn]
	3) Cyclic OFF/ ON [cfn]	
	4) Signal OFF Delay [sf]	
	5) Signal OFF/ ON [sfn]	
	6) Accumulative Delay on Signal [san]	
	7) Impulse ON/ OFF [inf]	
	8) Leading Edge Impulse [iL]	
	9) Trailing Edge Impulse [it]	
	10) Leading Edge Bi-stable [sbi]	

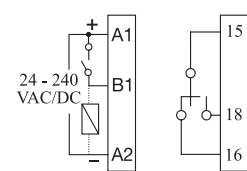
Specifications

Supply Voltage	12 - 265 VAC/ DC (50, 60Hz)
Power Consumption	2 VA max.
Timing Range	0.1s ~ 100h
Reset Time	200ms max.
Repeat Accuracy	+1.0%
Output Contact Rating	8A @ 240V AC / 5A @ 240V DC (resistive)
Electrical Life	10,000 switching cycles
Mechanical Life	1,000,000 switching cycles
AC-15 Rating	Voltage (Ue): 125/ 240V, Current (Ie): 3/1.5A
DC-13 Rating	Voltage (Ue): 125/ 250V, Current (Ie): 2/0.22/0.1A
Operating Temperature	-10°C ~ +60°C (+14°F ~ 131°F)
Storage Temperature	-15°C ~ +70°C (-4°F ~ 149°F)
Weight	70g (0.14lb.)
Protection Enclosure	IP30
Protection Terminals	IP20
Torque	0.60 Nm (6 lb.in.)
Terminal Wire Size	0.3-2.5 mm ² (18-10 AWG)

DISPLAY FUNCTIONS

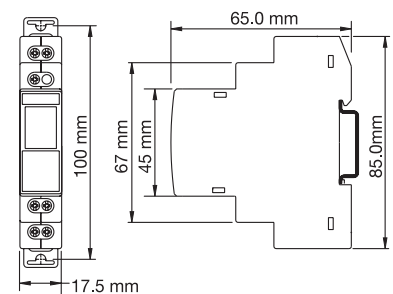


CONNECTION DIAGRAMS



AMT10-S1, AMTAS-S1

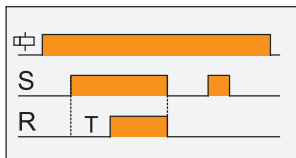
DIMENSIONS



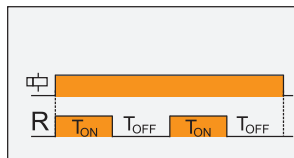
Timing Diagrams

AMT10-S1 (10 Functions) and AMTAS-S1 (2 Functions, bordered with dotted line below)

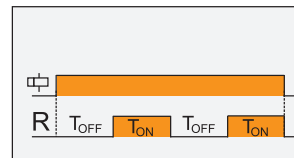
SIGNAL ON DELAY [stn]



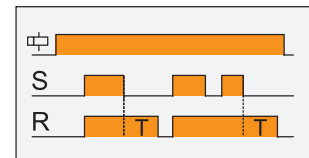
CYCLIC ON/OFF (Sym, Asym) [cnf]



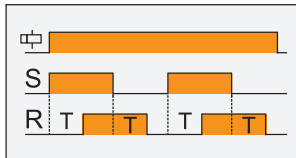
CYCLIC OFF/ON (Sym, Asym) [cfn]



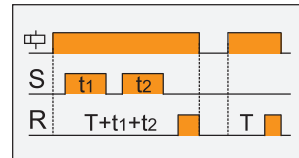
SIGNAL OFF DELAY [sf]



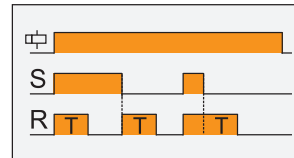
SIGNAL OFF/ON [sfn]



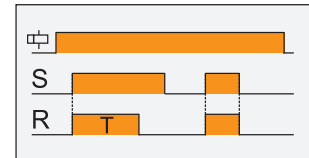
ACCUMULATIVE DELAY ON SIGNAL [san]



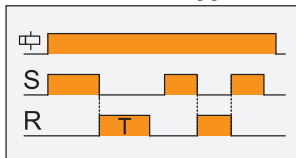
IMPULSE ON/OFF [inf]



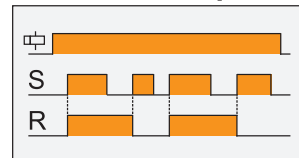
LEADING EDGE IMPULSE [iL]



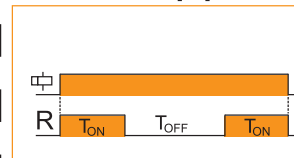
TRAILING EDGE IMPULSE1 [it]



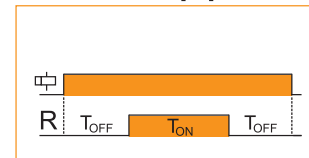
LEADING EDGE BISTABLE [sbi]



ASYMMETRIC ON/OFF [anf]



ASYMMETRIC OFF/ON [afn]



Programmable Panel-Mount Digital Multi-Timer

Altech's AMT33 Series of Programmable Panel-Mount Digital Multi-Timers comprises 2 models featuring 33 Timing Functions and 2 separate Outputs with selectable Timing modes for maximum flexibility in automation and control applications. Timing Range is adjustable from 0.1s to 999 days. A Digital 7-Segment shows current Run Time information and Input/Output states.



Features

- 33 Built-in Timing Functions
- Supply Voltage 110-240 VAC
- 7 Segment Digital LED Display
- 2 Separate Output Channels
- Individually selectable Timing Functions
- Wide Timing Range 0.1s - 999 days
- Compact Design
- Panel & DIN rail (11-pin socket) mount

CAT. NO.

Mounting

AMT33-S2

Panel Mount

AMT33-S2-11

DIN / 11-pin Socket Mount

Specifications

Electrical

Supply Voltage	110-240VAC (-20% to +10%), 50/ 60Hz
Power Consumption	9 VA max.
Timing Range	0.1s - 999 days
Reset Time/ Initiation Time	max. 200ms/ 100ms
Timing Accuracy	+/- 0.01%

Input

Input Signal	High Range: 85-265VAC/ 100-265DC Low Range: 24-60V AC/DC
Signal Sensing Time	50ms max. (10ms for DC)
Signal Wait Period	100ms @ Power on/ signal based modes
Signal Isolation	2kV

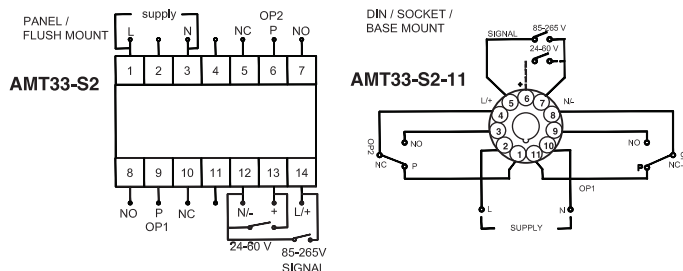
Output

Output Configuration	2 x SPDT (C/O)
Output Contact Rating	5A (NO), 3A (NC)
Electrical Life	10,000 switching cycles
Mechanical Life	500,000 switching cycles
AC-15 Rating	250VAC/ 2A, cosΦ=0.6, 85°C
DC-13 Rating	Rated Voltage (Ue): 24VDC, Rated Current (Ie): 2.0A

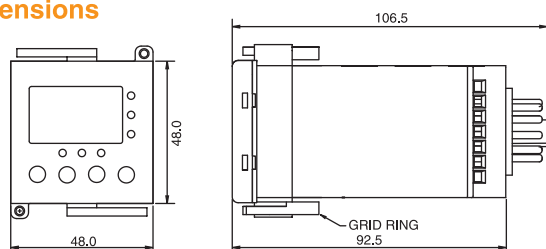
Material

Operating Temperature	-5°C - 55°C (23°F - 131°F)
Storage Temperature	-10°C - 60°C (14°F - 140°F)
Protection Enclosure	IP30 (Enclosure), IP20 (Terminals)
Torque Terminals	0.50 Nm (3.5lb.in.), M3 screw
Terminal Wire Size	0.12-2.0mm ² (26-14AWG)
Weight	160g (0.35lb)

Connection Diagrams



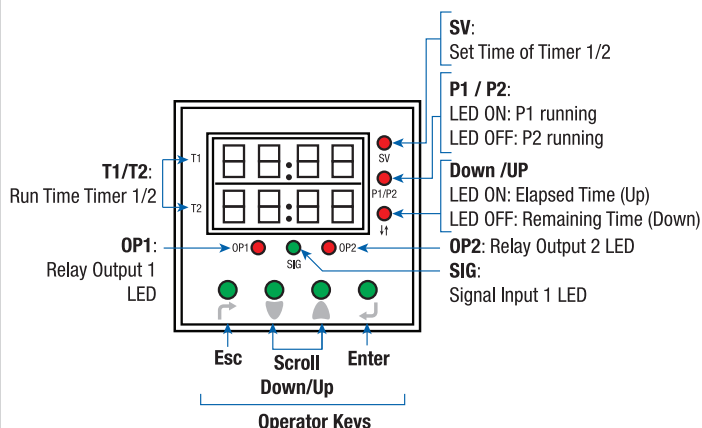
Dimensions



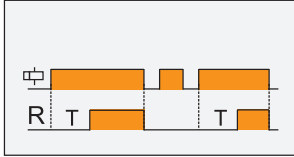
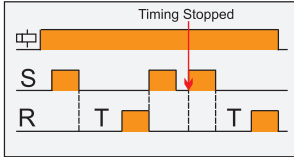
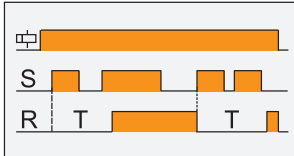
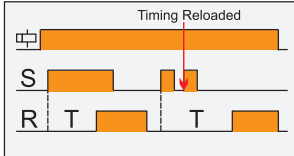
TIMING FUNCTIONS

MODE 00	ON Delay
MODE 01	ON Delay constant supply 2
MODE 02	ON Delay constant supply 3
MODE 03	ON Delay (Control Switch resettable)
MODE 04	Signal ON Delay
MODE 05	Inverted Signal ON Delay
MODE 06	Inverted Signal ON Delay 2
MODE 07	Signal OFF Delay
MODE 08	OFF Delay constant supply 2
MODE 09	Cyclic ON/ OFF
MODE 10	Cyclic OFF/ ON
MODE 11	Asymmetric Cycle Pulse Start
MODE 12	Asymmetric Recycle Pulse Start 2
MODE 13	Signal ON/ OFF Delay
MODE 14	Signal ON/ OFF Delay 2
MODE 15	Signal OFF/ ON
MODE 16	Impulse on Energizing
MODE 17	Impulse ON/ OFF
MODE 18	Accumulative Delay ON Signal
MODE 19	Accumulative Delay ON Inverted Signal
MODE 20	Accumulative Impulse ON Signal
MODE 21	Leading Edge Impulse 1
MODE 22	Leading Edge Impulse 2
MODE 23	Trailing Edge Impulse 1
MODE 24	Trailing Edge Impulse 2
MODE 25	Delayed Impulse 1
MODE 26	Delayed Impulse 2
MODE 27	Delayed Pulse constant supply, power based
MODE 28	Delayed Pulse (Remote Trigger)
MODE 29	Delayed Pulse constant supply 2
MODE 30	ON Pulse (Control Switch resettable)/ Watchdog Type
MODE 31	On Pulse (Supply Reset)
MODE 32	Leading Edge Bi-stable or Step Relay

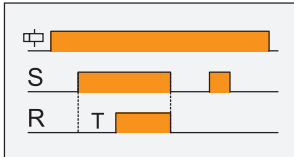
DISPLAY FUNCTIONS



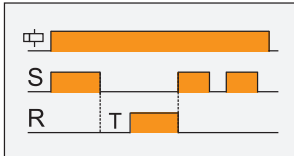
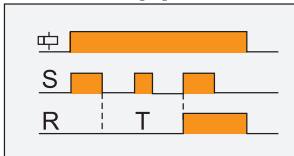
ON DELAY [00]

ON DELAY
CONSTANT SUPPLY TYPE 2 [01]ON DELAY
CONSTANT SUPPLY TYPE 3 [02]ON DELAY (CONTROL SWITCH
RESETTABLE) [03]

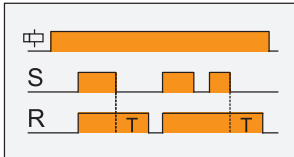
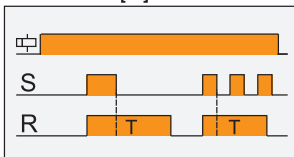
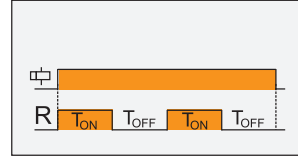
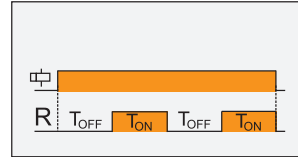
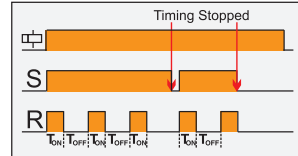
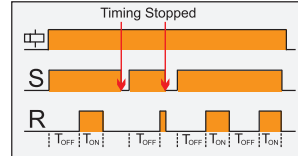
SIGNAL ON DELAY [04]



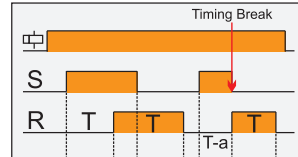
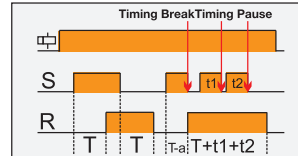
INVERTED SIGNAL ON DELAY [05]

INVERTED SIGNAL
ON DELAY-TYPE 2 [06]

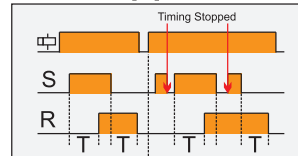
SIGNAL OFF DELAY [07]

OFF DELAY CONST.
SUPPLY TYPE 2 [08]CYCLIC ON/OFF
{ON start, (Sym, Asym)} [09]CYCLIC OFF/ON
{OFF Start, (Sym, Asym)} [10]ASYMMETRIC CYCLE PULSE
START [11]ASYMMETRIC RECYCLER
PULSE START TYPE 2 [12]

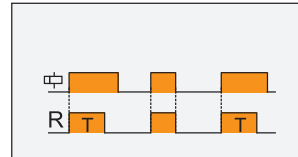
SIGNAL ON OFF DELAY [13]

SIGNAL ON OFF DELAY
TYPE 2 [14]

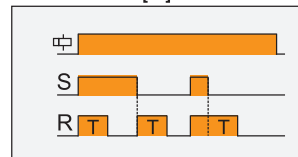
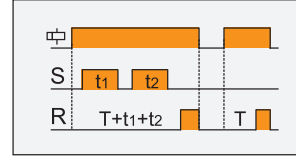
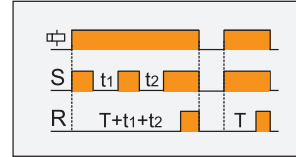
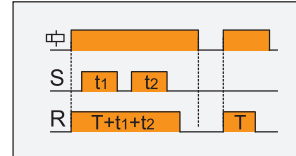
SIGNAL OFF/ON [15]



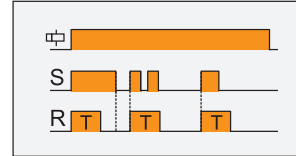
IMPULSE ON ENERGIZING [16]



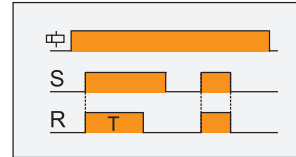
IMPULSE ON/OFF [17]

ACCUMULATIVE DELAY
ON SIGNAL [18]ACCUMULATIVE DELAY
ON INVERTED SIGNAL [19]ACCUMULATIVE IMPULSE
ON SIGNAL [20]

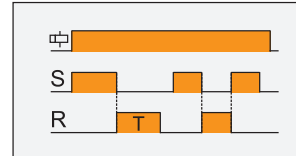
LEADING EDGE IMPULSE1 [21]



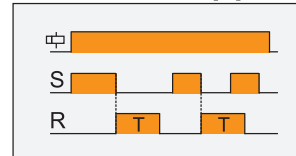
LEADING EDGE IMPULSE2 [22]



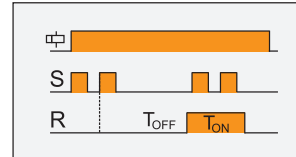
TRAILING EDGE IMPULSE1 [23]



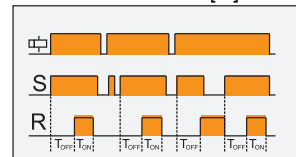
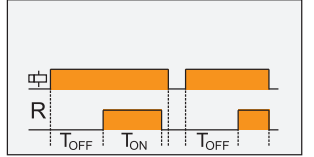
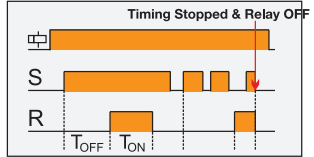
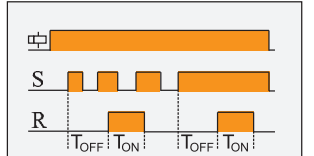
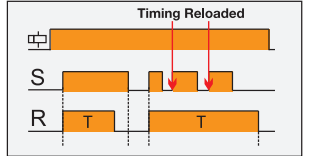
TRAILING EDGE IMPULSE2 [24]



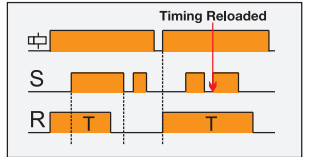
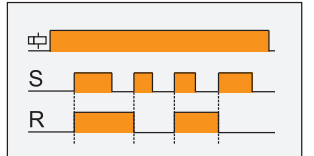
DELAYED IMPULSE [25]



DELAYED IMPULSE TYPE 2 [26]

DELAYED PULSE (CONSTANT
SUPPLY) POWER BASED [27]DELAYED PULSE
(REMOTE TRIG.) [28]DELAYED PULSE
(CONST. SUPPLY TYPE 1) [29]ON PULSE (CONTROL SWITCH
RESETTABLE) / WATCH DOG TYPE [30]

ON PULSE (SUPPLY RESET) [31]

LEADING EDGE BI-STABLE OR
STEP RELAY [32]

☐ Supply Voltage
 S Signal B1
 R Relay Output
 T Set Time
 T_{ON} Set ON Time
 T_{OFF} Set OFF Time

Digital Time Switch

Altech's ATS Series of Digital Time Switches comprises 6 models featuring Precise Time Programming for Daily/ Weekly (ATS-C) or Pulse (ATS-P) switching. An LCD displays shows current Timing and Function information.



Features

- 25 ON/ OFF Programs (16 ON Programs for Pulse version)
- LCD Display for Time and Program Information
- Various Supply voltages
- Keypad Lockable
- 12/ 24h time format
- Settable Daylight Savings Time
- Simple Manual Override
- DIN Rail Mount

CAT. NO.

	Chrono Version	Pulse Version
Supply Voltage	ATS-C120	ATS-P120
12V DC	ATS-C12	ATS-P12
24V DC	ATS-C24	ATS-P24

Power Consumption	4 VA max.	4 VA max.
Programs	25 ON/ OFF Programs	16 Pulse Programs
Minimum Switching Time	1min	1s
Programmable Pulse duration	—	1-59s

DESCRIPTION

The standard timings version (**ATS-C**) and Pulse version (**ATS-P**) essentially differ in their programmed ON/OFF duration.

Chrono Version

The **ATS-C** Series allows daily/ weekly switching times with a minimum duration of 1min. 25 ON/ OFF programs can be configured. Application examples are Lighting applications, illuminated advertising displays, HVAC and Pump applications.

Pulse Version

The Pulse version, **ATS-P** series, allows pulse operations to be scheduled with duration 1-59s. Application Examples are scheduling Sirens, bells, etc.

Operating Modes

AUTO	Program ON	Program On
ON AUTO	Instant ON until next Auto event	—
AUTO OFF	Instant OFF until next Auto event	—
ON	Continuous ON	Continuous ON
OFF	Continuous OFF	Continuous OFF

Specifications

Functional

Display	3 Line Text LCD
Clock Resolution	1 minute
Clock Mode	12h (AM/ PM) or 24h
Clock Accuracy	+/- 2s above operating temperature
LED Indicator	ON: relay activated, OFF: relay deactivated

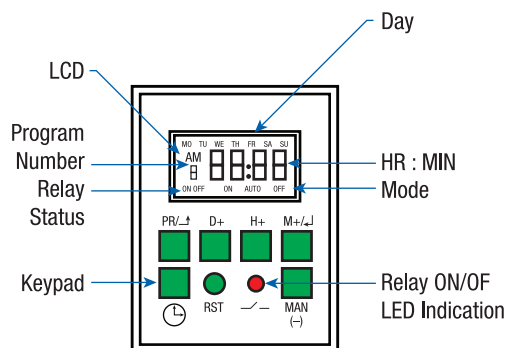
Output

Output Configuration	1 x SPDT (C/O)
Output Contact Rating	16A (NO), 5A (NC) @ 240VAC/ 24VDC (resistive) 6A @ 250VAC, cosΦ=0.6 (inductive)
Electrical Life	30,000 switching cycles
AC-15 Rating	250VAC/ 6.0A, cosΦ=0.6, 85°C
DC-13 Rating	Rated Voltage (Ue): 24VDC, Rated Current (Ie): 2.0A

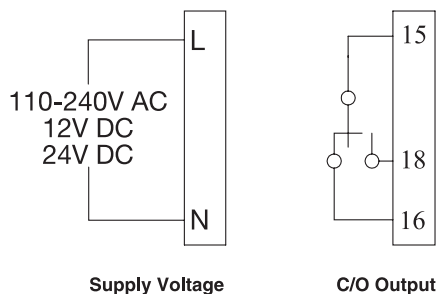
Material

Operating Temperature	-10°C - 55°C (14°F - 131°F)
Storage Temperature	-10°C - 60°C (14°F - 140°F)
Protection Enclosure	IP40 (Enclosure), IP20 (Terminals)
Housing	UL94-V0
Torque Terminals	0.54 Nm (3.5lb.in.), M2.5 screw
Terminal Wire Size	0.2-3.3mm ² (24-12AWG)
Weight	110g (0.24lb.)

DISPLAY FUNCTIONS



Connection Diagrams



Dimensions

