AT-110

Electronic Reset Timer

A-LINE
MONITORING RELAYS

■ Application Examples

- Safety control on elevator door closure.
- Control of access booms in multi-storey car parks.
- Automatic starting of stand-by system.
- Off delay timer in conveyor and numerous other applications.
- Pile-up detection on canning or bottling lines.
- Gap detection on canning or bottling lines.
- Energy savings in large corridors through delayed switching off of lights (hallway timer).
- Under-speed or slip detection on conveyor belts.
- Extending of high-speed impulses.
- Delayed release after sensor or limit switch operation.
- Watchdog timer for PLCs.

■ Features

- Failsafe feature.
- 4 programmable functions: Delayed ON or Interval (One shot), both with hold or pulse reset.
- 18 overlapping programmable time ranges from 0,2 seconds to 100 hours, achieved by:
  - 3 programmable time ranges: seconds, minutes, hours.
  - 6 programmable time scales for 3 time ranges.
- Time Setting on calibrated scale (10% to 100%)
- High repetitive accuracy.
- Direct interface with DC Three-wire PNP/NPN sensors, with reset inputs for either PNP or NPN in the same unit.
- High speed electronic reset.
- Power ON, Relay ON and Reset LEDs.
- Flashing Power ON LED when unit is timing (flash rate increases when relay is about to switch).
- Microprocessor technology incorporated.
- 5A SPDT or DPDT relay output.

ORDERING CODE

TYPE	MODEL	VOLTAGE	POWER SUPPLY	RELAY CONTACTS
AT	110	230	A	D

SEE PAGE 60 FOR ORDERING OPTIONS

■ Description of Operation

The **AT-110** is a fully programmable, microprocessor based Electronic Reset Timer. The unit has 18 overlapping programmable time ranges from 0.2 seconds to 100 hours. The unit interfaces readily with three-wire PNP and NPN proximity sensors, potential free contacts or limit switches, providing high-speed reset operation. The unit can be programmed to operate in any of the following modes:

1. Delayed ON Operation, Hold Reset: At power-up the relay is de-energised. Timing only commences on release of the reset input. After the set time expires, the relay energises. The relay remains energised until the timer is reset or the power supply is interrupted for at least 0,5 seconds.

2. Delayed ON Operation, Pulse Reset: At power-up the relay is de-energised. Timing only commences on activation of the reset-input. After the set time expires, the relay energises. The relay remains energised until the timer is reset or the power supply is interrupted for at least 0,5 seconds.

3. Interval Operation, Hold Reset: At power-up the relay is de-energised. On activation of the reset-input, the relay energises. Timing will only commence on the release of the reset-input. After the set time expires, the relay de-energises.

4. Interval Operation, Pulse Reset: At power-up the relay is de-energised. On activation of the reset-input, the relay energises and timing commences, irrespective of the duration of the reset contact closure. After the set time expires, the relay de-energises.
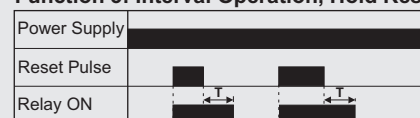
■ Operational Diagrams

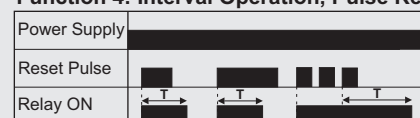**Function1: Delayed On Operation, Hold Reset.**

Function 2: Delayed On Operation, Pulse Reset.
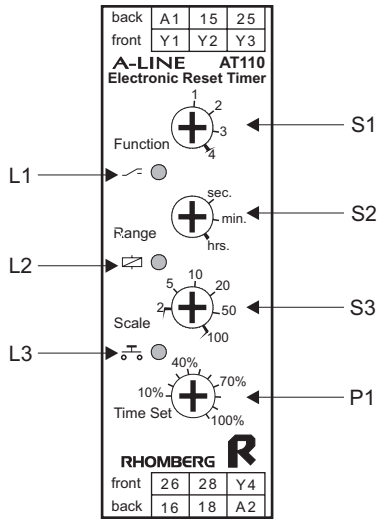

Function 3: Interval Operation, Hold Reset.

Function 4: Interval Operation, Pulse Reset.

T = Set time

Description of Controls

L1: The red **"Relay ON"** LED marked ⌁ illuminates when the relay is energised.

L2: The green **"Power ON"** LED marked ⇄ illuminates when power is supplied to the timer. The LED flashes when the unit is timing. Before the relay switches, the flash rate increases.

L3: The red **"Reset"** LED illuminates whenever the reset input is activated, i.e. the reset contact is closed.

S1: The **Timing Function** is set on S1.
Position1:   Delayed ON Operation, Hold Reset.
Position2:   Delayed ON Operation, Pulse Reset.
Position3:   Interval Operation, Hold Reset.
Position4:   Interval Operation, Pulse Reset.

S2: The **Time Range** is set on S2.
Sec: Seconds
Min: Minutes
Hrs: Hours

S3: The **Time Scale** is set on S3. The time scales are 2, 5, 10, 20, 50 & 100.

P1: The **Time Setting** is adjusted on P1. The time setting can be adjusted from 10% to 100% of the selected time.

EXAMPLES OF TIME SETTINGS

Required Time	Time Scale (S3)	Time Range (S2)	Time Setting (P1)
8 seconds	10	Sec	80%
25 minutes	50	Min	50%
4,5 hours	5	Hrs	90%

Wiring and Connection

Relay Contacts-DPDT

CONTACT 1	Normally Open	15 + 18
	Normally Closed	15 + 16
CONTACT 2	Normally Open	25 + 28
	Normally Closed	25 + 26

Power Supply

Phase/Positive	A1
Neutral/Negative	A2

Reset Input

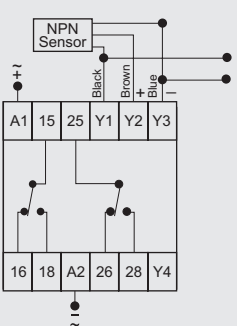| Potential free contact	Y1 + Y3
NPN AC sensor Black wire Brown wire, + Blue wire, -	Y1 Y2 Y3
PNP DC sensor Black wire Brown wire, + Blue wire, -	Y4 Y2 Y3

Relay Contacts-SPDT

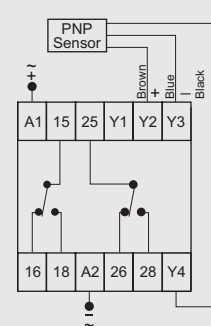| Normally Open	15 + 18
Normally Closed	15 + 16

AT110 SPDT
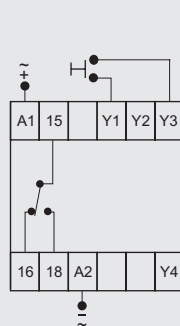
APPLICATION 1
Reset with a potential free contact or switch.

AT110 DPDT

APPLICATION 2
Reset with a DC sensor (NPN) in parallel with a potential free contact.

AT110 DPDT

APPLICATION 3
Reset with a DC sensor (PNP).

Note: *For extended wiring, screened wire is recommended to eliminate erratic switching due to electromagnetic interference. The screen should be connected to Y3*

Technical Specifications

POWER SUPPLY

Type	Voltage	Tolerance	Consumption
AC Transformer (2kV galvanic isolation)	12, 24, 115, 230 (220-240), 400 (380-415), 525V	±15%	2VA (approx.)
DC	48, 60, 110V	±15%	30mA (approx.)
AC/DC	12/24V	±15%	100mA (approx.)

RELAY

Relay Options (250, 5A)	SPDT	DPDT

HOUSING

Voltage	250V and below	Above 250V
Housing Width	22,5mm	45mm

TIME RANGES (STANDARD)

Time Scale Selection	Time Settings: 10 to 100%	Time Range Selection: Seconds, minutes, hours
2	0,2 to 2	Sec, min or hrs
5	0,5 to 5	Sec, min or hrs
10	1 to 10	Sec, min or hrs
20	2 to 20	Sec, min or hrs
50	5 to 50	Sec, min or hrs
100	10 to 100	Sec, min or hrs

RESET INPUT

Input type	NPN Sensor PNP Sensor Potential free contact
Minimum Pulse width	4mS
Open circuit Voltage	<5, 6V

DC OUTPUT

Voltage tolerance	10-24V
Source Current	10mA

DC OUTPUT

Setting Accuracy	5%
Repeatability	0,5%

Additional information in Section J, page 131.