AT-200

Asymmetrical Recycling Timer

A–LINE
MONITORING RELAYS

ORDERING CODE

TYPE	MODEL	VOLTAGE	POWER SUPPLY	RELAY CONTACTS
AT	200	230	A	D

SEE PAGE 60 FOR ORDERING OPTIONS

■ Application Examples

- Refrigeration plants for freezing cycle and defrost cycle.
- Centre pivoting for watering cycle and moving cycle on irrigation systems.
- Systems purging on boiler control panels.
- Chemical dosing and mixing.
- Conveyor transfer control for manual packaging.
- Material handling control in cutting application.
- Periodic lubrication control on equipment.
- Periodic moisture cycle control in catering equipment.

■ Features

- Failsafe feature.
- Programmable for either OFF cycle first or ON cycle first.
- 12 overlapping programmable time ranges from 0,2 seconds to 4 hours.
- High repetitive accuracy.
- Power ON and Relay ON LEDs.
- Flashing Power ON LED when unit is timing (flash rate increases when relay is about to switch).
- Miroprocessor technology incorporated.
- 5A SPDT or DPDT relay output.
- Separate OFF/ON time range selection and time adjustments on calibrated scales, 0-100%.

■ Description of Operation

The **AT-200** is a fully programmable, microprocessor based asymmetrical timer. Two independently adjustable time intervals are provided in 12 overlapping time ranges within 0,2 seconds and 4 hours.

The time units (seconds or minutes) of T1 and T2 can be configured by the connection of external wire links. Time interval T1 is configured by linking/not linking terminals Y1 and Y3. Similarly interval T2 is configured with terminals Y2 and Y3. Without the terminals linked the selected range is in seconds, and with the terminals linked it is in minutes.

Terminals Y3 and Y4 are used to configure the unit to operate in one of the following modes:

1. Asymmetrical Recycling, First Cycle OFF Operation: If terminals Y3 & Y4 are not linked when power is applied to the unit, the relay will switch on and off repetitively, starting with the OFF cycle. The duration of the OFF cycle and the ON cycle can be adjusted independently. In this mode interval T1 is the OFF cycle and interval T2 the ON cycle.
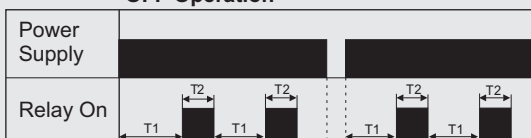
2. Asymmetrical Recycling, First Cycle ON Operation: If terminals Y3 & Y4 are linked when power is applied to the unit, the relay will switch on and off repetitively, starting with the ON cycle. The duration of the ON cycle and the OFF cycle can be adjusted independently. In this mode interval T1 is the ON cycle and interval T2 the OFF cycle.
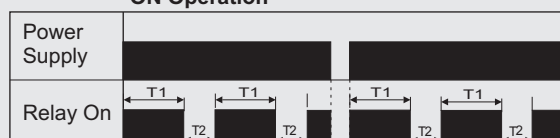
Note: *To change the configuration of any of the links, the power supply to the unit must be interrupted for at least 0,5 seconds.*

■ Operational Diagrams

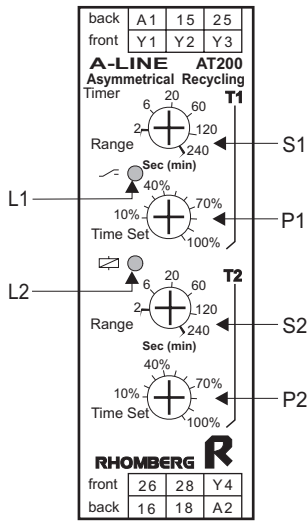**Function 1: Asymmetrical Recycling, First Cycle OFF Operation**

Function 2: Asymmetrical Recycling, First Cycle ON Operation

T1 = Time setting for first cycle
T2 = Time setting for second cycle

■ 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 unit. The LED flashes when the unit is timing. Before the relay switches (in the last 10% of the timed interval), the flash rate increases.

S1: The **time range of the first time interval (T1)** is set on **S1.** Time ranges are 2, 6, 20, 60, 120 & 240. The range selected is timed in seconds with no link to Y1, or minutes with Y1 linked to Y3.

S2: The **time range of the second time interval (T2)** is set on **S2.** Time ranges are 2, 6, 20, 60, 120 & 240. The range selected is timed in seconds with no link to Y2 or minutes if Y2 is linked Y3.

P1: The **time setting of the first time interval (T1)** is adjusted on **P1.** The time setting can be adjusted from 10% to 100% of the selected time.

P2: The **time setting of the second time interval (T2)** is adjusted on **P2.** The time setting can be adjusted from 10% to 100% of the selected time.
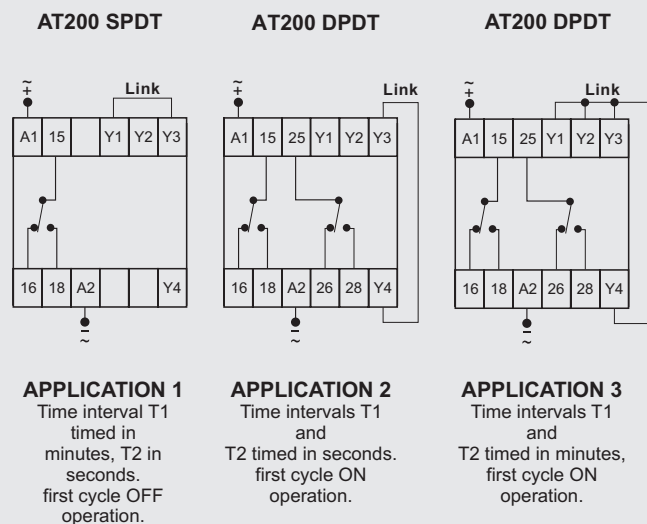
EXAMPLES OF TIME SETTINGS		
Required Time	**Time Range (S1 + S2)**	**Time Setting (P1 + P2)**
30 seconds	60 seconds	50%
45 minutes	60 minutes	75%

■ Wiring and Connection

Power Supply	
Phase/ Positive	A1
Neutral/ Negative	A2

Relay Contacts-SPDT	
Normally Open	15 + 18
Normally Closed	15 + 16

Relay Contacts-DPDT		
CONTACT 1	Normally open	15 + 18
	Normally closed	15 + 16
CONTACT 2	Normally open	25 + 28
	Normally closed	25 + 26

Link Options		
Time interval T1	Set Time in Seconds	Y1, Not linked
	Set Time in Minutes	Link Y1 & Y3
Time interval T2	Set Time in Seconds	Y2, Not linked
	Set Time in Minutes	Link Y2 & Y3
Interval T1 at Power up (First cycle)	Relay OFF	Y4, Not linked
	Relay ON	Link Y3 & Y4

AT200 SPDT

APPLICATION 1
Time interval T1 timed in minutes, T2 in seconds. first cycle OFF operation.

AT200 DPDT

APPLICATION 2
Time intervals T1 and T2 timed in seconds. first cycle ON operation.

AT200 DPDT

APPLICATION 3
Time intervals T1 and T2 timed in minutes, first cycle ON operation.

■ 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.) 6VA (approx.)
AC Reactive	250 (90-250)V	-	100mA
DC Supply	48, 60, 110V	±15%	30mA
AC/ DC	12/24V	±15%	100mA

RELAY		
Relay Options (250V, 5A)	SPDT	DPDT

HOUSING		
Voltage	250V and below	Above 250V
Housing Width	22.5mm	45mm

TIME SPECIFICATION	
Setting Accuracy	5%
Repeatability	0.5%

TIME RANGES (STANDARD)		
Time Range Selection	**Time Setting: 10 to 100%**	**Time Unit Selection: (Link Dependent)**
2	0,2 to 2	Sec or min
6	0,6 to 6	Sec or min
20	2 to 20	Sec or min
60	6 to 60	Sec or min
120	12 to 120	Sec or min
240	24 to 240	Sec or min

Additional information in Section J, page 131.

Electronic Timers