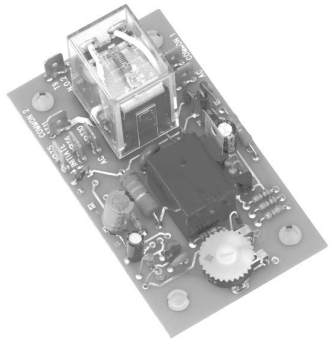
Timer - Delay-on-Break

ORB Series



The ORB Series' open PCB construction offers the user good economy without sacrificing performance and reliability. The output relay is available in isolated, 10A, DPDT or SPDT forms. The time delay may be ordered as factory fixed, onboard knob, or external adjustment. All connections are 0.25 in. (6.35 mm) male quick connect terminals.

Operation (Delay-on-Break):
Input voltage must be applied before and during timing. Upon closure of the initiate switch, the output relay energizes. The time delay begins when the initiate switch is opened (trailing edge triggered). The output remains energized during timing. At the end of the time delay, the output de-energizes. The output will energize if the initiate switch is closed when input voltage is applied.
Reset: Reclosing the initiate switch during timing resets the time delay. Loss of input voltage resets the time delay and output.

For more information see:
Appendix A, pages 156-164 for function descriptions and diagrams.
Appendix B, page 165, Figure 11 for dimensional drawing.

Features:

- Low cost open PCB construction
- 10A, DPDT or SPDT output contacts
- Line voltage initiation
- Delays from 0.05s - 300s in 5 ranges
- ±2% repeat accuracy
- ±10% factory calibration

Approvals:

Auxiliary Products:

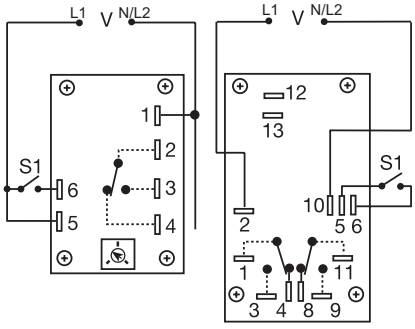
- **External adjust potentiometer:**
  P/N: P1004-12
  P/N: P1004-12-X
- **Female quick connect:**
  P/N: P1015-64 (AWG 14/16)
- **Quick connect to screw adaptor:**
  P/N: P1015-18
- **Versa-knob:** P/N: P0700-7

Available Models:

ORB120A160
ORB120A25
ORB24A15D
ORB24A21D
ORB24A25

If desired part number is not listed, please call us to see if it is technically possible to build.

Connection:



Relay contacts are isolated.
R_T is used when external adjustment is ordered.

R_T Selection Chart					
Desired Time Delay* Seconds					R_T
1	2	3	4	5	Megohm
0.05	0.5	0.6	1.2	3.0	0.0
0.5	5.0	10	20	50	0.5
1.0	10	20	40	100	1.0
1.5	15	30	60	150	1.5
2.0	20	40	80	200	2.0
2.5	25	50	100	250	2.5
3.0	30	60	120	300	3.0

* When selecting an external R_T add at least 20% for tolerance of unit and the R_T.

Order Table:

ORB **X** **X** **X** **X**

Input Voltage
- 24A - 24VAC
- 120A - 120VAC
- 230A - 230VAC

Adjustment
- 1 - Fixed
- 2 - Onboard knob
- 3 - External adjust

Time Delay*
- 1 - 0.05 - 3s
- 2 - 0.5 - 30s
- 3 - 0.6 - 60s
- 4 - 1.2 - 120s
- 5 - 3 - 300s

*If fixed delay is selected, insert delay (**0.05 - 300**) in seconds.

Output Form
- Blank - SPDT
- D - DPDT

Specifications

Time Delay
Type ..... Analog circuitry
Range ..... 0.05 - 300s in 5 adjustable ranges or fixed
Repeat Accuracy ..... ±2% or 20ms, whichever is greater
Tolerance (Factory Calibration) ..... Adjustable: guaranteed range
Fixed: ±10%
Reset Time ..... ≤ 50ms
Initiate Time ..... ≤ 70ms
Time Delay vs Temp. & Voltage ..... ≤ ±10%

Input
Voltage ..... 24, 120, or 230VAC
Tolerance 24VAC ..... -15% - 20%
120 & 230VAC ..... -20% - 10%
AC Line Frequency ..... 50/60 Hz
Power Consumption 2.25W

Output
Type ..... Electromechanical relay
Form ..... Isolated, SPDT or DPDT
Rating ..... 10A resistive @ 120/240VAC & 28VDC;
1/3 hp @ 120/240VAC
Life ..... Mechanical - $1x10^7$; Electrical - $1x10^6$

Protection
Isolation Voltage ..... ≥1500V RMS input to output

Mechanical
Mounting ..... Surface mount with four #6 (M3.5 x 0.6) screws
Termination ..... 0.25 in. (6.35 mm) male quick connect terminals

Environmental
Operating / Storage Temperature ..... -20° to 65°C / -30°to 85°C
Weight ..... ≈ 2.7 oz (77 g)