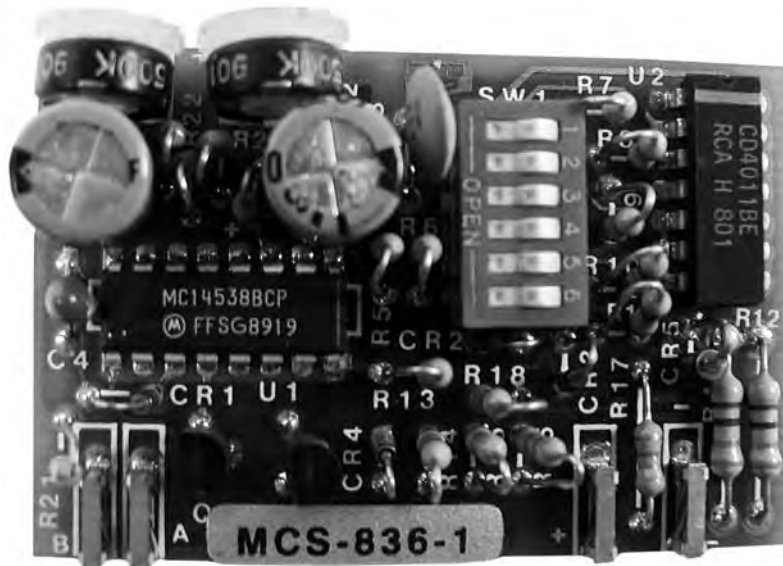


Warner Photoscanner MCS-836/836-1/836-2 Multi-Function Plug-In Timer Modules MCS-144, 149, 152, 159 Photoelectric Controls

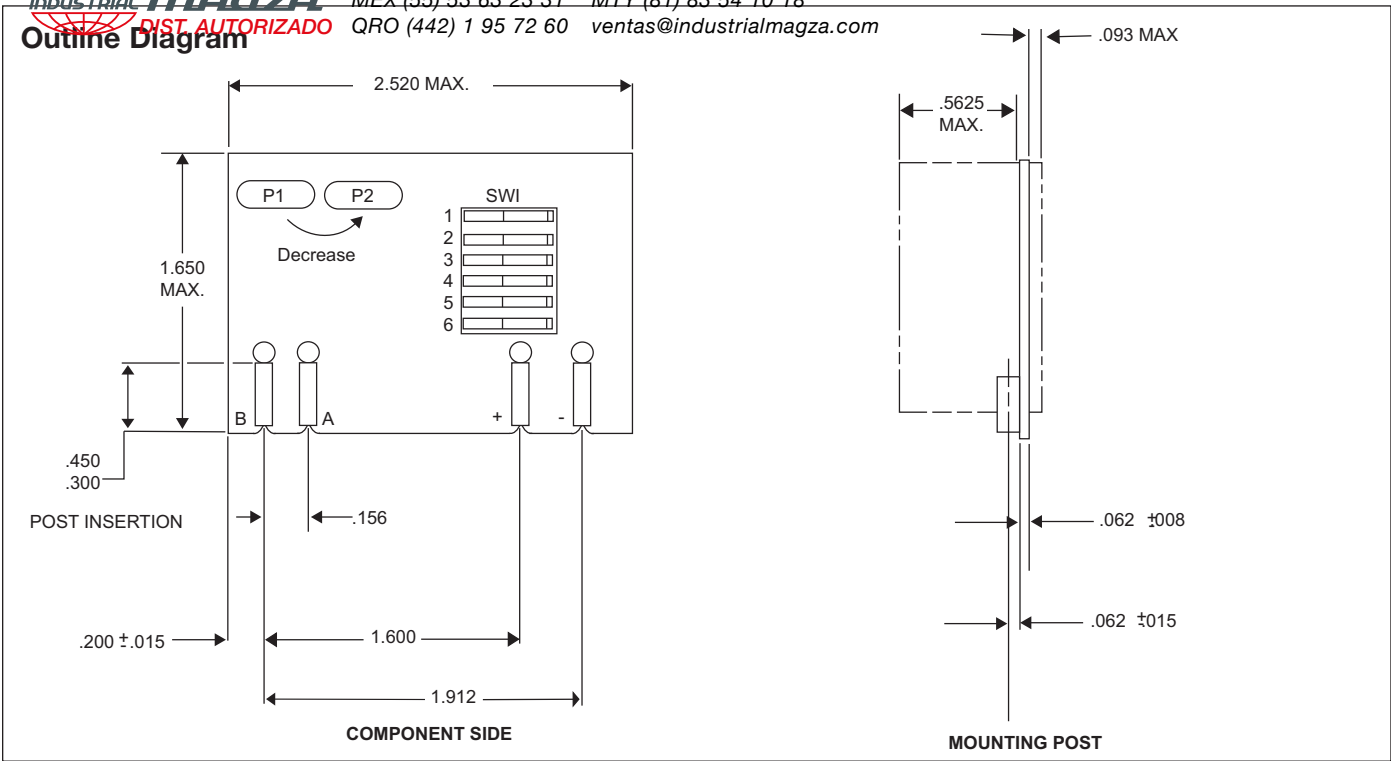
P-241-78

Service & Installation Instructions



An Altra Industrial Motion Company

Outline Diagram



Specifications

Mounting: Plug-in, mates directly with connector on photoelectric amplifier board.

Timing Controls: Potentiometers, adjustable

Weight: 1 oz.

Ambient Temperature: 0 - 125°F. (-18 — +52°C)

Light or Dark Operation: Selectable

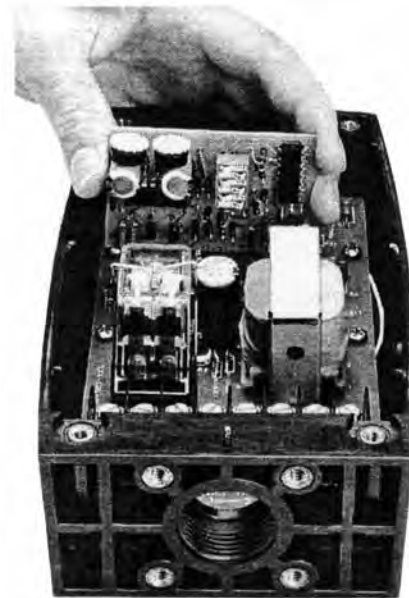
Timing Ranges: MCS-836: 0.4 to 15 seconds
 MCS-836-1: 1 to 30 seconds
 MCS-836-2: 0.02 to 0.5 seconds

Minimum Input Pulse: 20 milliseconds for delay pull, delay drop, and dual delay. 50 microseconds for one-shot and delayed one-shot

Minimum Reset Time: 1 millisecond for all functions

Electrical:	Pin No.	Function
	+	+24 VDC Input
	-	Return (ground)
	A	Timer Input
	B	Timer Output

Part Numbers:	MCS-836:	7400-448-024
	MCS-836-1:	7400-448-029
	MCS-836-2:	7400-448-030



Operations

The timer module is an optional plug-in device which modifies the basic on-off photoelectric control operation. These functions are necessary for special timing applications. Dark-to-Light and Light-to-Dark transitions may be used to trigger any function, as selected.

Delay Pull: This function provides a delayed response for pull-in (energize) of the output device. The time delay is adjustable from 0.4 to 15 seconds.

Delay Drop: Immediate pull-in (energize) of the output device and a time delay for drop-out (de-energize).

Dual Delay: Independently set time delays for both pull-in (energize) and drop-out (de-energize) of the output module.

One-Shot: Provides a one-shot output. The output device is energized by a transition of the input state, and holds for a preset time independent of the photoelectric input.

One-Shot Drop: Reverse action of the one-shot function, the output device is energized and drops out on the input transition of the photoelectric control.

Delayed One-Shot: Time delay prior to a one-shot output. Delay on one-shot timing is independently adjustable.

Delayed One-Shot Drop: Delay prior to a one-shot drop similar to the one-shot drop but with a time delay. Both delay and one-shot are independently adjustable.

Installation

1. Select the desired timing functions.
2. Set appropriate switches to "ON" from table below.
3. Place Light-Dark Selector Switch in the desired position.
4. Insert timer module on pins in photoelectric control, (NOTE: Power must be off.)
5. Adjust potentiometers for desired timing range.

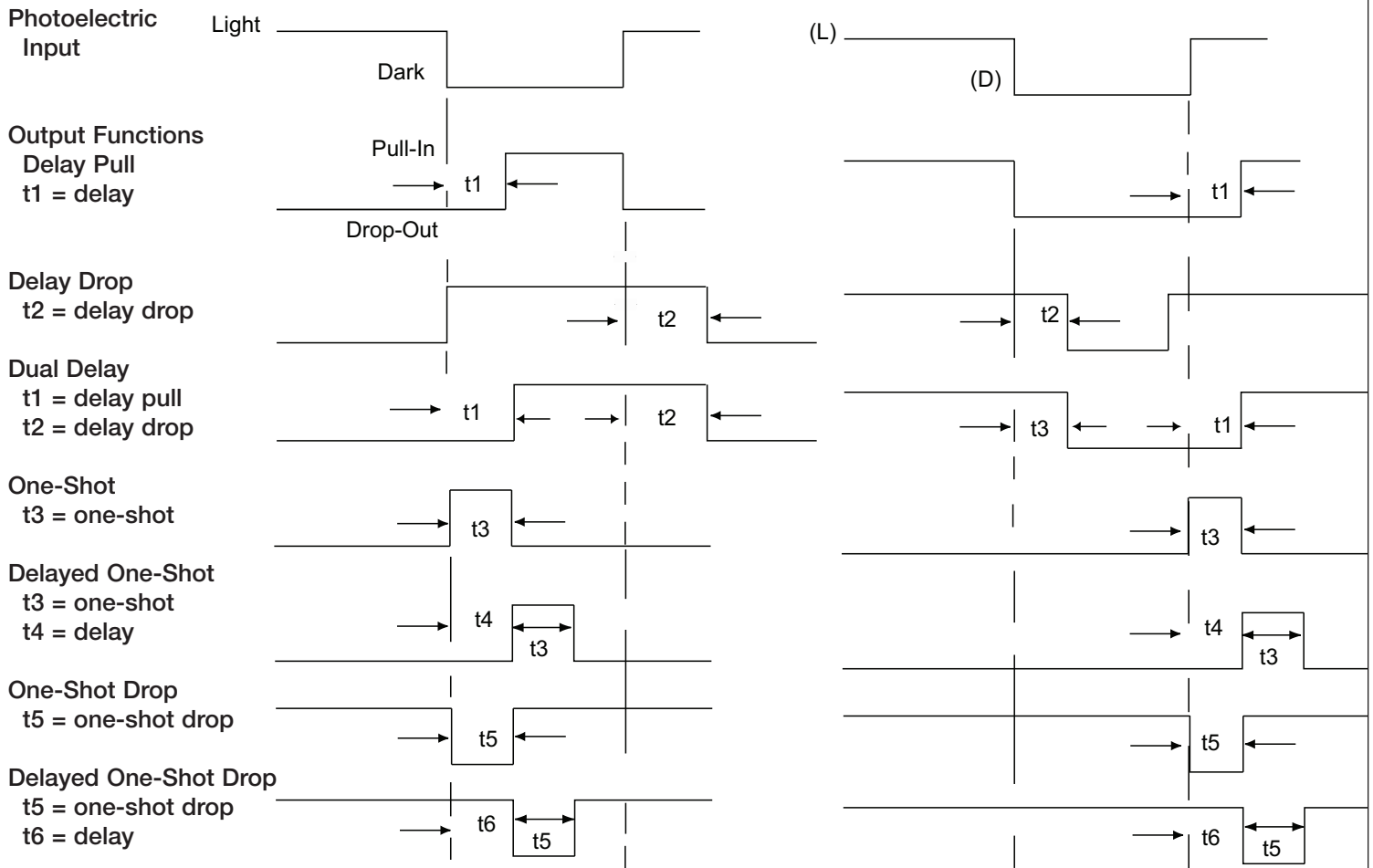
Function	Dark Operate Mode Switches "On"	Pin Selec- tion L/D	Potentiometer(s) Adjust	Light Operate Mode Switches "On"	Pin Selec- tion L/D	Potentiometer(s) Adjust
Normal Operation	Unplug Timer Use Jumper 7420-702-001	D	—	Unplug Timer Use Jumper 7420-702-001	L	—
Delay Pull	5	D	P-1	5	L	P-1
Delay Drop	3,5	L*	P-1	3,5	D*	P-1
Dual Delay	None	D	P-1 pull, P-2 drop	None	L	P-1 pull, P-2 drop
One-Shot	1, 2, 5, 6	D	P-1	1, 2, 5, 6	L	P-1
Delayed One-Shot	1, 2, 4, 6	D	P-1 delay, P-2 O.S.	1, 2, 4, 6	L	P-1 delay, P-2 O.S.
One-Shot Drop	1, 2, 3, 5, 6	D	P-1	1, 2, 3, 5, 6	L	P-1
Delayed One-Shot Drop	1, 2, 3, 4, 6	D	P-1 delay, P-2 O.S.	1, 2, 3, 4, 6	L	P-1 delay, P-2 O.S.
<p>*NOTE: For proper operation of delay drop, note that the light-dark switch must be reversed for proper operation in the light & dark modes.</p>						
<p>Special Functions</p>						
Motion Detection	2,4	D	P-2	2, 3, 4	L	P-2
Retriggerable or integrating one-shot						

Timing Function Waveforms

Operating Mode

Dark Operate Mode

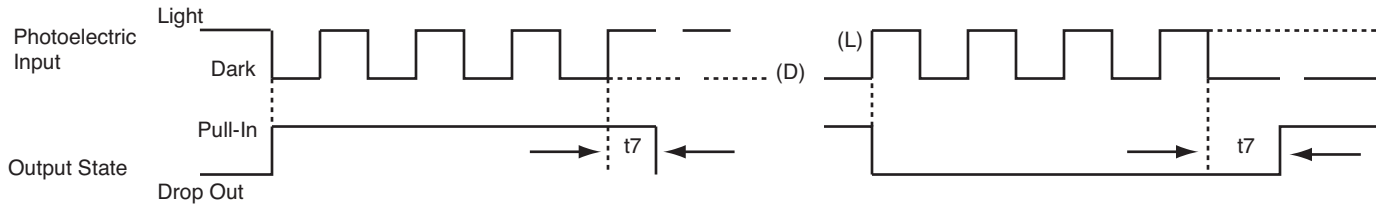
Light Operate (Beam Complete)



Special Function

Motion Detector (Retriggerable or integrating one-shot):

This function provides a state change of the output device when the input signal to the photoelectric control is changing at a constant rate. When the input signal decreases in frequency or stops completely, the output will reverse states.



Note: Time t_7 must be longer than the light or dark transition time of the photoelectric input.

The response of the output module to the photoelectric input (beam complete or beam break) is dependent on the mode of operation selected for the photoelectric amplifier.

Note: The timing potentiometers are not calibrated and the minimum time may be less or the maximum time more than the specified timing ranges.

Warranty

Warner Electric LLC warrants that it will repair or replace (whichever it deems advisable) any product manufactured and sold by it which proves to be defective in material or workmanship within a period of one (1) year from the date of original purchase for consumer, commercial or industrial use.

This warranty extends only to the original purchaser and is not transferable or assignable without Warner Electric LLC's prior consent.

Warranty service can be obtained in the U.S.A. by returning any defective product, transportation charges prepaid, to the appropriate Warner Electric LLC factory. Additional warranty information may be obtained by writing the Customer Satisfaction Department, Warner Electric LLC, 449 Gardner Street, South Beloit, Illinois 61080, or by calling 815-389-3771.

A purchase receipt or other proof of original purchase will be required before warranty service is rendered. If found defective under the terms of this warranty, repair or replacement will be made, without charge, together with a refund for transportation costs. If found not to be defective, you will be notified and, with your consent, the item will be repaired or replaced and returned to you at your expense.

This warranty covers normal use and does not cover damage or defect which results from alteration, accident, neglect, or improper installation, operation, or maintenance.

Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

Warner Electric LLC's obligation under this warranty is limited to the repair or replacement of the defective product and in no event shall Warner Electric LLC be liable for consequential, indirect, or incidental damages of any kind incurred by reason of the manufacture, sale or use of any defective product. Warner Electric LLC neither assumes nor authorizes any other person to give any other warranty or to assume any other obligation or liability on its behalf.

WITH RESPECT TO CONSUMER USE OF THE PRODUCT, ANY IMPLIED WARRANTIES WHICH THE CONSUMER MAY HAVE ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL CONSUMER PURCHASE. WITH RESPECT TO COMMERCIAL AND INDUSTRIAL USES OF THE PRODUCT, THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Changes in Dimensions and Specifications

All dimensions and specifications shown in Warner Electric catalogs are subject to change without notice. Weights do not include weight of boxing for shipment. Certified prints will be furnished without charge on request to Warner Electric.



Warner Electric LLC
449 Gardner Street • South Beloit, IL 61080
815-389-3771 • Fax: 815-389-2582
www.warnerelectric.com
An Altra Industrial Motion Company