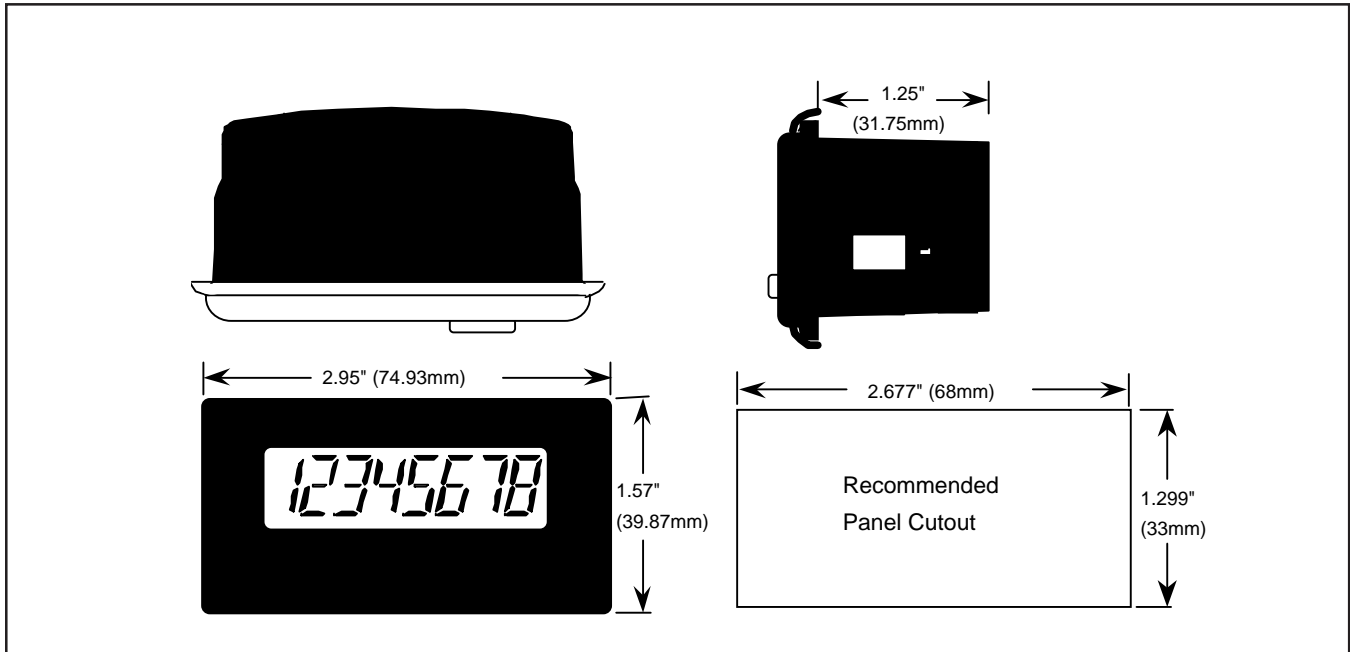


Courier Models: 53300-400 Totalizer
 53300-401 Totalizer, Extended Temperature Range
 53302-400 Totalizer with Backlight



POWER

Internal Battery: 3V, Lithium.
 Life expectancy: 5 years +.
 Replacement Part: 36367-202.

BACKLIGHT

10-30 VDC @ 30 mA max.
 (Derate operating temperature 1°C/Volt above 17VDC.)
 Reverse polarity protected.

PHYSICAL

Operating Temperature: -20° to 70°C.
 Storage Temperature: -20° to 70°C.
 Operating Humidity: 60% Non-condensing.
 Weight: 2.2 oz. net.
 Display Size: .43" high.
 Front Panel Rating: NEMA 4X when mounted with gasket provided.
 Case Material: Cyclac X-17.

TOTALIZER

Type: UP counting.
 Digits: 8

COUNT ACCURACY

100% when operated within specifications.

DC COMMON (Terminal 1)

COUNT INPUTS

Input B (Terminal 2) Low speed input designed for contact closures to DC common.

Speed: 0 to 20 Hz.
 Min Low Time: 10 milliseconds.

Min High Time: 40 milliseconds.

Impedance: 101K ohm.

Voltage Thresholds: Low 0 to 0.4 VDC.
 High 2.0 to 28 VDC.
 Max High 28 VDC.

Input A (Terminal 3) High speed input requiring a voltage source such as a current sourcing sensor or a current sinking sensor used with the provided pull up resistors.

Speed: 0 to 10 kHz.

Min Low Time: 80 microseconds.

Min High Time: 20 microseconds.

(The above times are with a 0 to 5.0 V swing.)

Input Impedance: 2k Ω above 5 VDC.

Voltage Thresholds: Low 0 to 1.2 VDC.
 High 2.0 to 28 VDC.
 Max High 28 VDC.

RESET INPUT (Terminal 4) designed for contact closures to DC common.

Min. Low: 0.25 to 1 sec. (reset is maintained).

The required pulse width varies with count speed, scale factor and number of digits displayed.

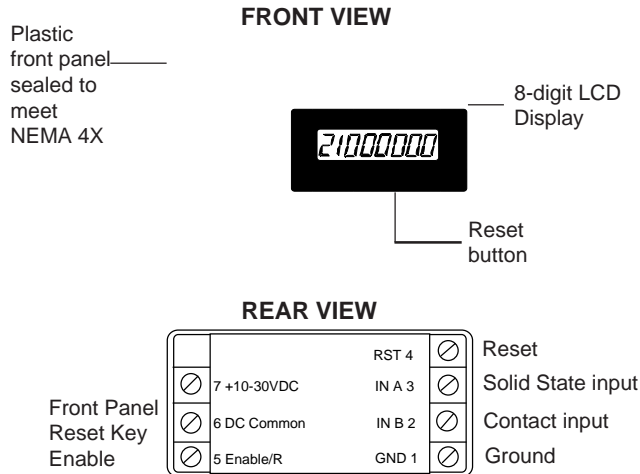
Voltage Thresholds: Low 0 to 0.4 VDC.
 High 2.0 to 28 VDC.

FRONT PANEL RESET ENABLE (Terminal 5)

Operation: Level sensitive (maintained).

INTRODUCTION

Your 5330X-400 is an UP counting totalizer with a high-contrast eight-digit LCD display. The front-panel reset key can be disabled. A remote-reset terminal is provided.



APPLICATIONS

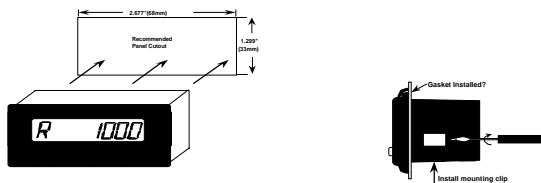
This totalizer is intended for simple totalizing applications. One count input pulse per item is necessary. The only decisions to be made are:

1. Do you use the high or low speed input?
2. Do you want the front panel reset button active?

OPERATION

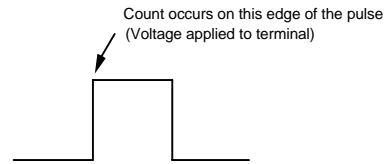
The totalizer display has lead-zero blanking. No decimal point is available.

MOUNTING



Count Inputs

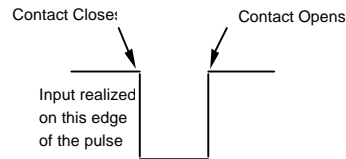
Separate contact and solid state count inputs are provided. The solid state input (terminal 3) requires a current-sourcing sensor and can count up to 10 kHz. Inputs into this terminal are counted on the positive-going edge.



Terminal 3 is pulled down to common. When a sensor output supplies voltage to this terminal, one count is registered on the display. The sourcing signal must supply at least +1.0VDC but no more than +28VDC.

Note: When a sourcing signal is applied to terminal 3, a power assist feature of the Courier extends the life of the battery.

Terminal 2 is the low-speed, current-sinking count input designed to be used with a contact closure to ground. It has a maximum count speed of 20 Hz. Inputs into this terminal are counted on the negative-going edge.



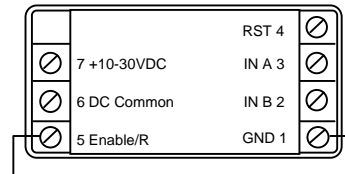
Terminal 2 is pulled up to +3VDC. When a contact closes, pulling the voltage down to .4 VDC or less, one count is registered.

RUNMODE

Screens

The totalizer screen is the only screen available on this model.

Front Panel Reset Enable



The front-panel reset button comes disabled from the factory. To enable the button, install a jumper wire from terminal 5 to ground, terminal 1.

Note: The reset terminal on the rear panel is still active when the front reset button is disabled.

PROGRAMMODE

There is no program mode for this model.

WIRING RECOMMENDATIONS

Following these suggestions will increase noise immunity and extend the life of the product.

Cable: The connection between the count source and the totalizer should be made with a two-conductor shielded cable. The shield should be connected to earth ground at one end only. The connecting cable should not be run in conduits with cables switching high inductive loads.

Relay Coil Suppression: If a relay contact is used as a count source, the relay coil should be suppressed. This can be accomplished with an RC network for AC coils or a diode for DC coils. The Durant RC suppressor (38091-400) may be used.

Mounting: The totalizer should not be mounted near a solenoid or other inductive devices. Enough ventilation should be supplied to keep the totalizer operating within the temperature specifications.

BATTERY SAFETY

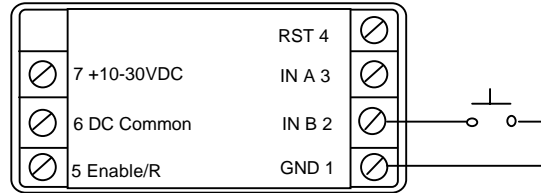
The lithium battery that powers your device contains inflammable materials such as lithium organic solvent, and other chemical ingredients. Explosion or fire may result if the battery is not handled correctly. To avoid an accident follow these guidelines:

- * Do not stack or jumble up batteries.
- * Do not heat batteries above 95°C.
- * Do not disassemble batteries.
- * Do not recharge lithium batteries.
- * Do not apply pressure to, or deform batteries.
- * Do not solder to batteries.
- * Do not dispose of batteries in fire.
- * Insert battery with correct polarity.

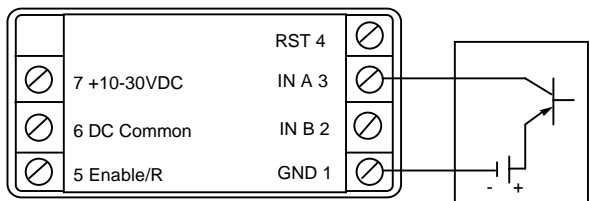
Terminal	Function	Operation
1	Ground	
2	Input B Count Input	Use with Contact Closure to Ground Maximum 20 Hz Count Speed
3	Input A Count Input	Use with Current Sourcing Sensor Maximum 10 kHz Count Speed
4	Reset	Connect to Ground to Reset Totalizer. This is a maintained or Level Sensitive Reset
5	Reset Key Enable	Connect to Ground to Enable Reset Key
6	Backlight Common	
7	Backlight Power	Connect to Power to Light Display

WIRING DIAGRAMS

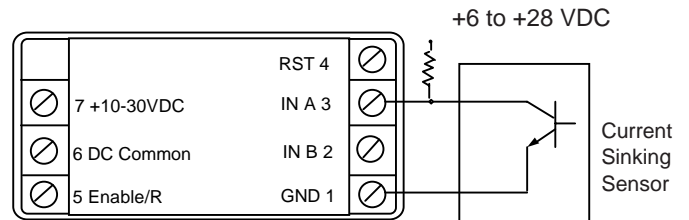
CONTACT CLOSURE COUNT INPUT



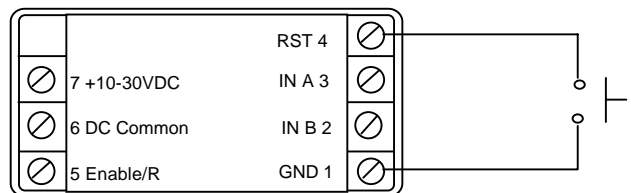
SOLID STATE COUNT INPUT CURRENT SOURCING SENSOR



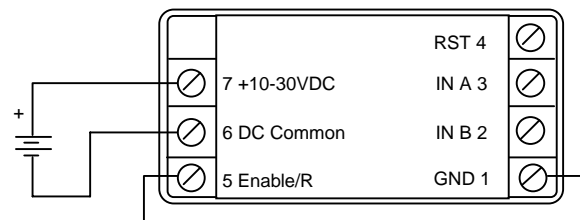
SOLID STATE INPUT CURRENT SINKING SENSOR



REMOTERESET



FRONT PANEL RESET ENABLE & BACKLIGHT WIRING



REPLACEMENT PARTS

36367-202 Battery
 46066-210 Gasket
 53300-241 Mounting Clip
 28772-200 Mounting Screw

COURIER SERIES ACCESSORIES

ES9513-RS Rotary Contactor
 49750-400 Power Supply (+15VDC)
 38091-400 Count Source RC Suppressor

Devices requiring external power for correct operation

48770-401, -402 Inductive Proximity Sensor (8mm, 12mm, 18mm)
 48771-400 Diffuse-Reflective Photoelectric Sensor
 48771-401 Retro-Reflective Photoelectric Sensor
 48771-402 Thru-Beam Photoelectric Sensor
 Emitter
 48771-404 Thru-Beam Photoelectric Sensor Receiver
 (Thru-beam emitter and receiver must be used together)
 38150-XXX Standard Duty, Single Channel Shaft Encoder (XXX denotes pulses per revolution. Example: 38150-060 for 60 pulses/rev)
 48370-XXX Heavy Duty, Single Channel Shaft Encoder (XXX denotes pulses per revolution. Example: 48370-060 for 60 pulses/rev)

OTHER COURIER SERIES PRODUCTS

53300-401 Add/Subtract Totalizer (Solid State Inputs)
 53300-402 Add/Subtract Totalizer (Contact Inputs)
 53300-403 Quadrature Indicator/Totalizer
 53300-404 Ratemeter
 53300-405 Ratemeter/Totalizer
 53302-401 Add/Subtract Totalizer w/Backlight (Solid State Inputs)
 53302-402 Add/Subtract Totalizer w/Backlight (Contact Inputs)
 53302-403 Quadrature Indicator/Totalizer w/Backlight
 53302-404 Ratemeter w/Backlight
 53302-405 Totalizer/Ratemeter w/Backlight

WARRANTY: Eaton warrants all products against defects in material and workmanship for a period of one (1) year from the date of shipment to Buyer. This is a limited warranty limited to its terms. This warranty is void if the product has been altered, misused, taken apart or otherwise abused. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE EXCLUDED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE.

BUYERS' REMEDIES: Eaton's obligations and liabilities under the foregoing warranty are limited to repair or replacement of the product without charge. To receive the required Return Goods Authorization number (RGA), contact your local Durant distributor or call 1-800-540-9242 to get a list of distributors in your area. A charge is made for repairing after the expiration of the warranty. IN NO EVENT SHALL EATON BE LIABLE FOR CLAIMS BASED UPON BREACH OF EXPRESS OR IMPLIED WARRANTY OR NEGLIGENCE OR ANY OTHER DAMAGES WHETHER DIRECT, IMMEDIATE, FORESEEABLE, CONSEQUENTIAL OR SPECIAL OR FOR ANY EXPENSES INCURRED BY REASON OF THE USE OR MISUSE, SALE OR FABRICATION OF PRODUCTS WHICH DO OR DO NOT CONFORM TO THE TERMS AND CONDITIONS OF THIS CONTRACT.

INDEMNIFICATION: Buyer agrees to hold Eaton harmless from, defend, and indemnify Eaton against damages, claims and expenses arising out of subsequent sales of Durant products or products containing components manufactured by Eaton and based upon personal injuries, deaths, property damage, lost profits, and other matters for which Buyer, its employees or sub-contractors are or may be to any extent liable, including without limitation penalties imposed by the Consumer Product Safety Act (P.L.92-573) and liability imposed upon any person pursuant to the Magnuson-Moss Warranty Act (P.L.93.637), as now in effect or as amended hereafter. The warranties

and remedies provided for herein are available to Buyer and shall not extend to any other person.

COMPLIANCE WITH OSHA: Eaton offers no warranty and makes no representation that its products comply with the provisions or standards of the Occupational Safety and Health Act of 1970, or any regulations issued thereunder. In no event shall Eaton be liable for any loss, damages, fines, penalty or expense arising under said ACT.

This manual constitutes proprietary information of Eaton Corp., and is furnished for the customers' use in operating the Courier. Reproduction of this material for purposes other than the support of the Ambassador Series Control or related products is prohibited without the prior written consent of Eaton Corp., Watertown, WI.

In the construction of the Control described herein, the full intent of the specifications will be met. Eaton Corp., however reserves the right to make, from time to time and without proper written notice, such departures from the detail specifications as may be required to permit improvements in the design of the product.

The information included herein is believed to be accurate and reliable, however no responsibility is assumed by Eaton Corp., for its use; nor for any infringements of patents or other rights of third parties which may result from its use.

This equipment is capable of generating radio frequency energy. If not installed and used in accordance with the instructions, this unit may interfere with radio communications.

Durant
 901 South 12th Street
 Watertown, WI 53094
 800-540-9242 • 920-261-4070
 FAX 920-261-9097