

## Introduction

Your Veeder-Root brand Series C342 panel instrument is powered by an external 12 - 24 VDC supply, features an 6 digit LED display, and is housed in a ultra compact 1/32 DIN package.

This model has been configured at the factory to perform one of the following functions: Count Totalizer, Position Indicator, Time Totalizer (Hours:Minutes:Seconds), Time Totalizer (Hours, 1/100 resolution), Tachometer or a PLC message display. There are also several programmable features that let you select a sinking or sourcing input, a count input filtering speed, and whether or not to enable the front panel reset.

The following pages of the manual will provide information on proper panel mounting of the device, terminal layout and wiring instructions, directions on how to access and set the field programmable features, as well as an overview of the basic operating functions of the unit. Also included are the key product specification, warranty procedures and ordering information should you require additional units.

### Models Covered in this Manual

**C342-0464 Totalizer:** Accumulates and displays counted pulses. Total can be reset via front panel button (may be disabled) or remote reset terminals. Model available with factory programmed setting of Setpoint, Prescale Value, and/or Decimal Position.

**C342 -8562 Position Indicator:** The instrument will count in a bi-directional mode based on the quadrature input from an encoder. Display range is -99999 to 99999.

**C342-1464 Time Totalizer:** Accumulates time in the format Hours:Minutes:Seconds. Can be reset via front panel button (may be disabled) or remote reset terminals. Model available with factory programmed preset output.

### Features

- Available models include count and time totalization, rate metering, position indication and a PLC message display
- Bright 6 digit LED display provides easy to read process values
- Compact 1/32 DIN bezel and 60mm behind the panel depth save panel space
- Powered by 12 - 24 VDC, with nonvolatile RAM for retention of process value and settings
- Field programmable for NPN or PNP signals and for hi-speed (7.5 kHz) or low speed (30 Hz) filtering
- Factory programmable features: Setpoint, Scale Value, Decimal Position, Text Message
- IEC IP65 rated front panel for use in washdown environments



### C342-2464 Time Totalizer:

Accumulates time in hours with 1/100 resolution. Can be reset via front panel button (may be disabled) or remote reset terminals. Model available with factory programmed preset output.

**C342-3464 Tachometer:** Pulses are sampled for a 6 second period then displayed as a rate value in units per minute. A Display Hold input can freeze the current reading. Model available with factory programmed setting of Setpoint, and/or Decimal Position.

**C342-4562 Message Display:** The instrument will display alphanumeric messages based on a digital input from a PLC. Please refer to separate instruction sheet which provides specific information on how to interface to a PLC. Model available with factory programmed Text Message.

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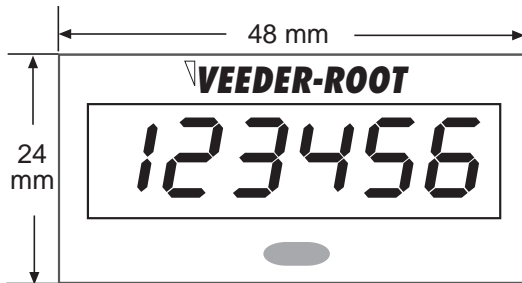
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**Technical Manual**  
**702085-0001**

**Veeder-Root brand**  
**Series C342**  
**DC Powered**  
**LED Display**

## INSTALLATION

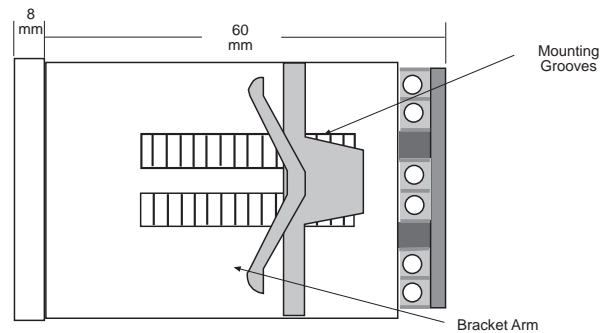
### Dimensions



Recommended Panel Cutout: 22mm ( $\pm 0.3$ mm) X 45mm ( $\pm 0.6$ mm)

## Panel Mounting

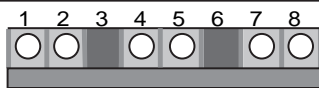
Make the recommended panel cutout. Place the included gasket over the rear of the unit and place the unit in the panel cutout. Slide the panel mount bracket into place over the unit's rear allowing the bracket tabs to engage the grooves on the case. Continue to push forward until the bracket arm fits snugly against the panel.



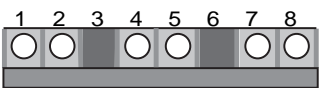
## REAR TERMINAL CONNECTIONS

### Wiring

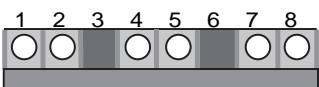
Insert wire into the appropriate openings as pictured in the drawing below. Turn the screws, located on the rear of the terminal block to tighten the clamp and secure the wire.



**Signal Input (from switch):** Contact closure signals are accumulated for count and tachometer versions. For timer versions the timer runs when contact is closed. See "Programming to select low speed, NPN mode."

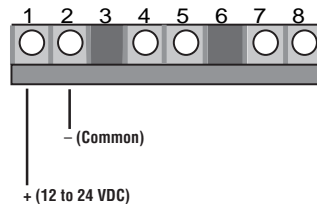


**Signal Input (transistor):** Signal pulses are accumulated for count and tachometer versions. For timer versions, timer runs when signal is present. See "Programming" for selection of PNP or NPN signal

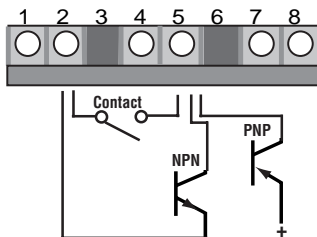


**Quadrature Input (Encoder):** For bi-directional counting connect corresponding encoder outputs to channel A & B input terminals. The encoder shield wire should be connected to earth ground at the counter.

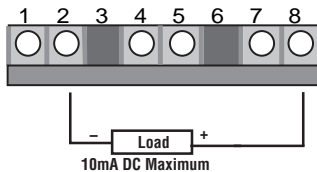
Note: Counting relative to the encoder shaft rotation can be reversed by swapping Channel A and Channel B connections



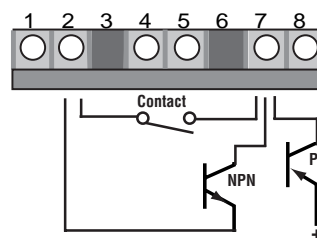
**Power Wiring:** Connect to 12 - 24 VDC (+20%/-10%) voltage source. Power requirement is 5 mA, Maximum



**Remote Reset:** the displayed value will be reset. Signal input is ignored when the Reset is active. **For tachometer versions,** this input is not used.



**Solid State Output:** When the factory programmed preset value is reached a PNP output will be triggered. The output will stay active until a reset signal is received.

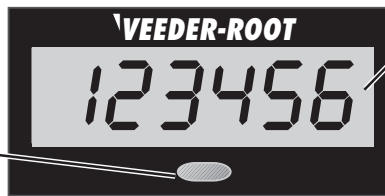


**Gate Input:** all incoming signals will be ignored and the present display value will be held. **For Position Indicator versions,** this input is not used.

## OPERATION

### Front Panel Reset

On Time or Count models, used to reset the Process Value Display. May be disabled through the keylock input. Also used to perform Programming mode functions



### Process Value Display

Displays the count, time or rate value based upon the model

**Your C342 has been configured at the factory to perform one of the following functions:**

**C342-0562 Totalizer:** The instrument will accumulate and display the pulses received on the count input terminals (2 & 4). Count capacity is 8 digits: **123456** The total can be reset via the remote reset terminals (2 & 5) or the front panel.

**C342 -8562 Position Indicator:** The instrument will count in a bi-directional mode based on the quadrature input from an encoder (terminals 2,5 & 7). Display range is -99999 to 99999.

**C342-1562 Time Totalizer #1:** The instrument will accumulate time when the input signal (terminals 2 & 4) is active. The time will be displayed in the format: **99:59:59** Hours:Minutes:Seconds and can be reset via the remote reset terminals (2 & 5) or the front panel.

**C342-2562 Time Totalizer #2:** The instrument will accumulate time when the input signal (terminals 2 & 4) are active. The time will be displayed in hours with 1/100 resolution **999999** and can be reset via the remote input terminals (2 & 5) or the front panel.

**C342-3562 Tachometer:** Pulses received on the input terminals (2 & 3) are sampled for a 6 second period then displayed as a rate value in units per minute: **999990** A Display Hold function (terminals 2 & 7) will freeze the current reading.

**C342-4562 Message Display:** The instrument will display alphameric messages based on a digital input from a PLC Please refer to separate instruction sheet which provides specific information on how to interface to a PLC.

## PROGRAMMING

### To access Input Configuration Parameters:

- Enter the Program Mode by holding the Front Panel Reset (FPR) key during power-up
  - Scroll through the 4 input configuration choices by brief press and release of the FPR key
  - When the desired choice appears, hold down the the FRP key for seconds to select it
  - Scroll between the two Front Panel Enable choices by brief press and release of the FPR key.
- Hold the FPR key for 2 seconds to select the desired choice and return to Operating Mode

**Note: The NPN/PNP selection applies to the Signal, Reset, and Hold inputs**

During Power-up

LO NPN

**Low Speed NPN Input:** Configures the unit to accept a sinking or dry contact input and sets a filtering speed of 30 Hz

LO PNP

**Low Speed PNP Input:** Configures the unit to accept a sourcing input and sets a filtering speed of 30 Hz

HI NPN

**High Speed NPN Input:** Configures the unit to accept a sinking or dry contact input of up to 7.5 kHz

**Note: This choice will not appear for Time Totalizer models**

HI PNP

**High Speed PNP Input:** Configures the unit to accept a sourcing input of up to 7.5 kHz

Hold for 2 seconds

loc

**Front Panel Reset Locked:** Pressing the front panel reset key during operation will not reset the accumulated count/time value

un loc

**Front Panel Reset Unlocked:** Pressing the front panel reset key during operation will cause the accumulated count/time value to be reset.

Hold for 2 seconds to return to Operating Mode

## SPECIFICATIONS

### Count /Time Input:

Count Input: NPN or PNP Signal field selectable  
 Count Speed: 30 Hz or 7.5 kHz max  
 Logic: Low < 0.7 VDC, High > 5 VDC  
 Minimum Pulse Width: 70 µsecond  
 Maximum Input: 30 VDC

### Quadrature Input (C342-8562 only):

Type: Line driver or square wave pulse (A leading B for up counting)  
 Count Speed: 2 kHz

### Physical:

Dimensions: 24mm x 48mm, 32mm deep  
 Mounting: Panel Mount (mounting bracket supplied)  
 22mm (± 0.3mm) x 45mm (± 0.6mm) panel cutout  
 Maximum Panel Thickness: 26mm  
 Connections: 6 screw terminals  
 Weight: Approximately 2.25 ounces  
 Front Panel Rating: IEC IP65

### Reset Input:

Type: NPN Signal, Contact Closure  
 Minimum Pulse Width: 15 ms

### Gate Input:

Type: NPN Signal, Contact Closure

### Output: (C342-0562, C342-1562, C342-2562):

Type: PNP transistor  
 Voltage/Curent: Supply less 2 Volt drop, 10 mA max

### Operation:

Power Supply: 12 - 24 VDC (+20%/-10%)  
 Power Consumption: <150 mA  
 Display Type: 6 digit LED  
 Display Height: 7.6 mm  
 Data Retention: Non volatile RAM > 10 years  
 Factory Programmable Settings: Setpoint, Prescale Value, Decimal Position, Text Message  
 Operating Temperature: -10°C to 50°C  
 Storage Temperature: -20°C to 60°C  
 Approvals: CE Mark

## ORDERING INFORMATION

Part #	Description
C342-0562	Count Totalizer
C342-0562-A	As above with factory programmed value*
C342-1562	Timer (H:M:S)
C342-1562-A	As above with factory programmed value*

Part #	Description
C342-2562	Timer (Hundreths of Hours)
C342-2562-A	As above with factory programmed value*
C342-3562	Tachometer
C342-4562	Message Display
C342-8562	Position Indicator

\* Possible Factory Programmable Settings: Setpoint, Prescale Value, Decimal Position, Text Message. Specifcy the setting and value when placing an order. (Ex: Setpoint = 4567)

## WARRANTY

Standard products manufactured by the Company are warranted to be free from defects in workmanship and material for a period of one year from the date of shipment, and products which are defective in workmanship or material will be repaired or replaced, at the option of the Company, at no charge to the Buyer. Final determination as to whether a product is actually defective rests with the Company. The obligation of the Company hereunder shall be limited solely to repair and replacement of products that fall within the foregoing limitations, and shall be conditioned upon receipt by the Company of written notice of any alleged defects or deficiency promptly after discovery within the warranty period, and in the case of components or units purchased by the Company, the obligation of the Company shall not exceed the settlement that the Company is able to obtain from the supplier thereof. No products shall be returned to the Company without its

prior consent. Products which the Company consents to have returned shall be shipped F.O.B. the Company's factory. The Company cannot assume responsibility or accept invoices for unauthorized repairs to its components, even though defective. The life of the products of the Company depends, to a large extent, upon the type of usage thereof, and THE COMPANY MAKES NO WARRANTY AS TO FITNESS OF ITS PRODUCTS FOR SPECIFIC APPLICATIONS BY THE BUYER NOR AS TO PERIOD OF SERVICE UNLESS THE COMPANY SPECIFICALLY AGREES OTHERWISE IN WRITING AFTER THE PROPOSED USAGE HAS BEEN MADE KNOWN TO IT.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.



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