

DIRIS A

Power Measurement Devices



The new DIRIS A Power Measurement Devices offer extended functionality and enable you to...

Reduce costs. All industries are faced with the need to minimize operating and maintenance costs. In this kind of environment, the measurement system is a key component, enabling energy quality and costs to be monitored.

Reduce production losses. The measurement system is at the heart of any solution designed to prevent electrical incidents, or even production downtime, which often generate significant financial losses or material wastes.

Improve efficiency. The measurement system is a key factor in identifying malfunctions within the installation, which can then lead to improved energy efficiency. The DIRIS line of products allow you to detect where you consume the most and adapt your energy consumption.

Enhance performance. The accuracy class of the measurement units is essential in reducing energy consumption.

Enjoy unparalleled ease of use. Equipped with a large backlit screen, DIRIS A units display a number of key power system values, while remaining easy to view. The direct access keys (four to six depending on the model) enable optimum use of the available functions.

DIRIS units are easy to install. The Easy Config software can be used to quickly and easily create, edit and save configurations.

All units are equipped with an integrated test function that can be utilized to detect incorrect wiring and to automatically correct CT installation errors.

Features

Metering

Energy consumed by each building or manufacturing line, in order to distribute and optimize energy costs (multi-utility management)

Measuring

All electrical or analog values to verify that your facilities are working properly. DIRIS measurement units can measure and display more than 200 parameters with a very high-level of accuracy.

- Class 0.5 ANSI C12.20
- Class 0.5S IEC 62053-22

Monitoring

Electrical networks via alarm management, secure monitoring of distribution parameters and remote control of electrical apparatus. DIRIS meters allow you to analyze the quality of your network and to avoid the installation deterioration.

Analyzing

Energy quality via a detailed breakdown of harmonics identifying troughs, outages, overvoltages and overcurrents on the network.

Applications

- Industrial monitoring
- Energy monitoring in building automation systems
- Renewable energy
- Energy management
- Commercial sub-metering
- Cost allocation



Agency approvals: UL file # E257746, CE 2011/65/EU, 2014/35/EU LVD, 2014/30/EU EMC

DIRIS A Multifunction Meters

The DIRIS A10 is a modular DIN rail mountable multifunction meter for measuring electrical values in low voltage networks. It allows all electrical parameters to be displayed and utilized for communication and/or output functions.

The DIRIS A20 is a panel-mounted unit which gives you access to all the measurements required for successfully carrying out energy efficiency projects and ensuring the electrical distribution is monitored.

Features

- Easy to use solution for industry, infrastructure and data centers
- Integrated temperature sensor (on A10)
- Detects wiring errors

Listings

- Compliant with ANSI C12.20 and IEC 61557-12
- Conformity to standards IEC 61557-12, IEC 62053-22 class 0.5S, IEC 62053-23 class 2, UL 61010 File E257746 and ANSI C12.20

Advantages

Easy to use

A10: Five direct-access pushbuttons enable all measurements to be clearly viewed on its backlit LCD display. Unit is DIN rail mountable.

A20: Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, DIRIS A20 multifunction meters directly display a number of multi-measurement and metering values: +kWh, +kvarh, I, U, V, F, P, Q, S, PF, etc. Designed for panel mounting.

Integrated temperature sensor (on A10)

Allows variations in temperature to be detected.

Detects wiring errors

An integrated test function can be utilized to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with ANSI C12.20 and IEC 61557-12

IEC 61557-12 is a high-level standard for all Performance Monitoring Devices (PMDs) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.)

DIRIS A Multifunction Meters				
Part Number	Description	Operating Voltage	Frequency	Price
4825U010	DIN rail mount multifunction meter with backlit LCD display. Without RS485.	110-277 VAC	50/60 Hz	\$361.00
4825U011	DIN rail mount multifunction meter with backlit LCD display. With RS485.	110-277 VAC	50/60 Hz	\$419.00
4825U200	Panel mount multifunction meter with backlit LCD display.	110-240 VAC 120-250 VDC	50/60 Hz	\$499.00

Functions

Multi-measurement

Currents

- Instantaneous: I1, I2, I3, In
- Maximum average: I1, I2, I3, In

Voltages & frequency

- Instantaneous: V1, V2, V3, U12, U23, U31, F

Power

- Instantaneous: 3P, ΣP , 3Q, ΣQ , 3S, ΣS
- Maximum average: ΣP , ΣQ , ΣS

Power factors

- Instantaneous: 3PF, ΣPF

Metering

- Active energy: +kWh
- Reactive energy: +kvarh
- Hours
- Harmonic analysis

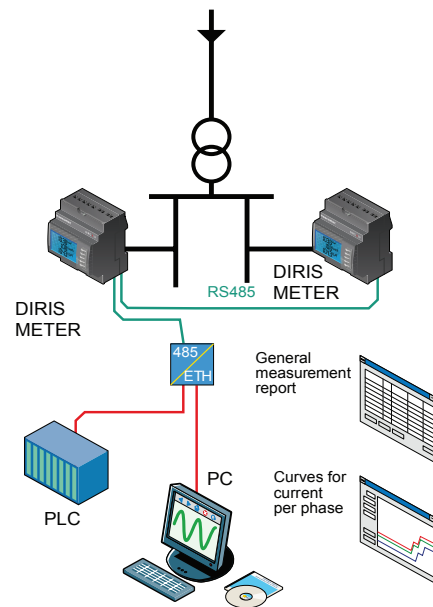
Harmonic analysis

Total Harmonic Distortion (level 51)

- Currents: thd1, thd I2, thd I3
- Phase-to-neutral voltage: thd V1, thd V2, thd V3
- Phase-to-phase voltage: thd U12, thd U23, thd U31



Principle Diagram



Dual tariff function (A10)

Selection of one out two billing tariffs

Events

Alarms on all electrical values

Communications

RS485 with MODBUS protocol

Input

- Tariff selection (A10)
- Remote device status

Output

- Remote command of device
- Alarm output
- Pulse output

DIRIS A10

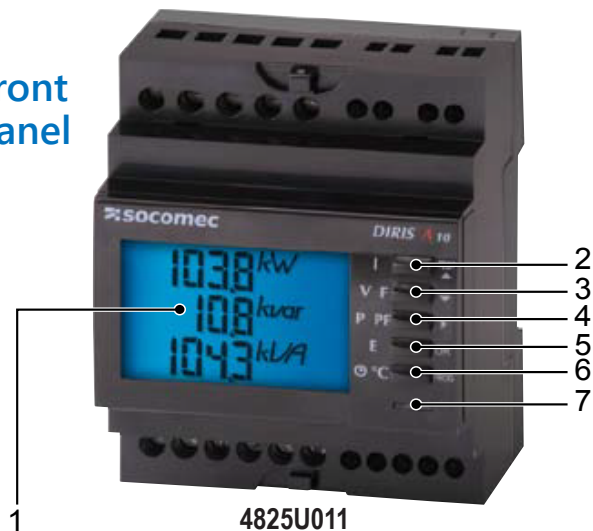
Multifunction Meter

Electrical Characteristics



Current Measurement (TRMS)	
Via CT primary	9,999A
Via CT secondary	5A
Measurement range	0-11 kA
Input consumption	0.6 VA
Measurement updating period	1s
Accuracy	0.2%
Permanent overload	6A
Intermittent overload	10 In for 1s
Voltage Measurement (TRMS)	
Direct measurement between phases	50-500 VAC
Direct measurement between phase and neutral	28-289 VAC
Input consumption	≤ 0.1VA
Measurement updating period	1s
Accuracy	0.2%
Permanent overload	800VAC
Power Measurement	
Measurement updating period	1s
Accuracy	0.5%
Power Factor Measurement	
Measurement updating period	1s
Accuracy	0.5%
Frequency Measurement	
Measurement range	45-65 Hz
Measurement updating period	1s
Accuracy	0.1%
Energy Accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Metrological LED (EA+)	
Pulse weight	10,000 pulses/kWh
Color	Red
Auxiliary Power Supply	
Alternating voltage	110-277 VAC
AC tolerance	±15%
Frequency	50/60 Hz
Consumption	<3VA
Digital Output (Pulse or Alarm)	
Number	1
Type	20/30 VDC; 0.5 A, 10VA
Max. number of operations	≤10 ⁸
Input (tariff)	
Number	1
Tariff Pricing Tiers (T1, T2)	0 VAC:T1 / 100-277 VAC:T2
Communication	
Link	RS485
Type	2-3 half duplex wires
Protocol	MODBUS RTU
MODBUS speed	2400-38400 baud
Operating Conditions	
Operating temperature	+14 to +131° F / -10 to +55° C
Storage temperature	-4 to +158° F / -20 to +70° C
Relative humidity	85%

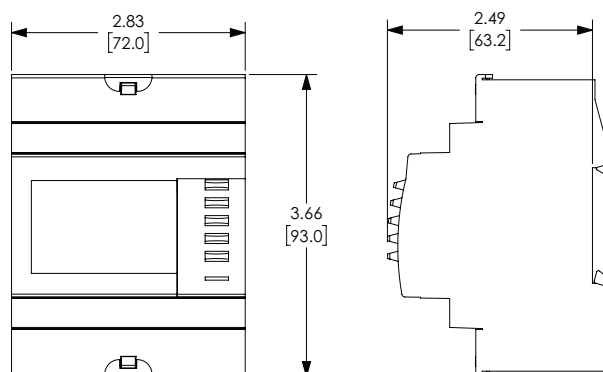
Front panel



1. Backlit LCD display.
2. Direct access key for currents (instant and maximum), current THD and test function.
3. Direct access key for voltages, frequency and voltage THD.
4. Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies.
6. Pushbutton for hour meter, temperature and programming menu access.
7. Metrological LED (energy metering indication).

Case dimensions

Inches [mm]



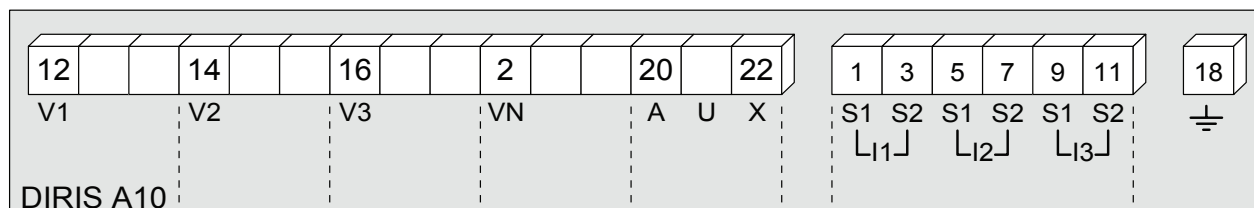
Physical characteristics	
Type	Modular
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD display, blue background
Character size and type	4 characters, black, 8mm (0.31 in.)
Voltage and current connection cross-section	AWG 12 (4 mm ²)
Connection cross-section for AUX supply, input, output and comms	AWG 14 (2.5 mm ²)
Weight	7.23 oz/205g (4825 U010) 7.58 oz./215g (4825 U011)

DIRIS A10

Multifunction Meter



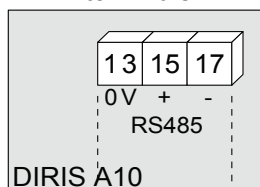
Terminals



AUX: Auxiliary power supply U_S
V1, V2, V3 & VN: voltage inputs

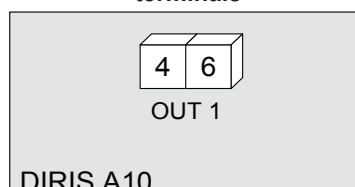
S1-S2: Current inputs

Communication terminals



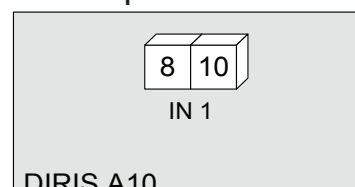
RS485 link

Pulse or alarm output terminals



4-6: Output

Input terminals



8-10: Input

DIRIS A10

Multifunction Meter



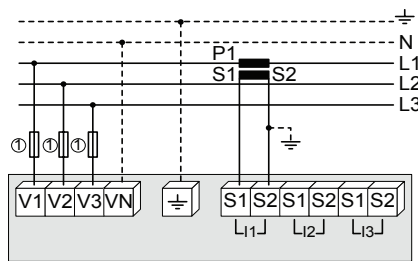
Connection

CAUTION:

- For IT grounding systems, it is recommended that the CT secondary is not connected to ground.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out using AutomationDirect's KN-2JM10 shorting jumpers and KN-KBD10 terminal blocks.
- It is recommended that the grounding point for DIRIS A10 and the current transformer secondaries are not grounded at the same time.

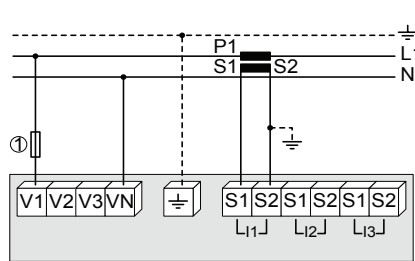
Low voltage balanced network

3/4 wires with 1 CT



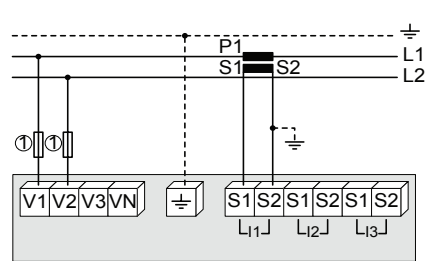
1. Fuses 0.5A gG / 0.5A class CC

Single-phase



1. Fuses 0.5A gG / 0.5A class CC

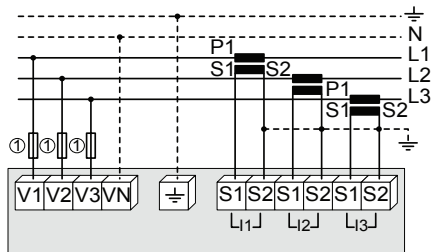
Two phase



1. Fuses 0.5A gG / 0.5A class CC

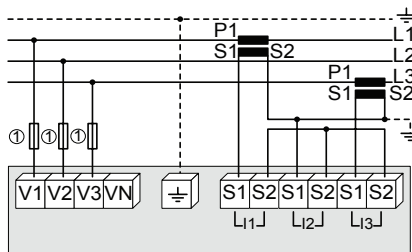
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5A gG / 0.5A class CC

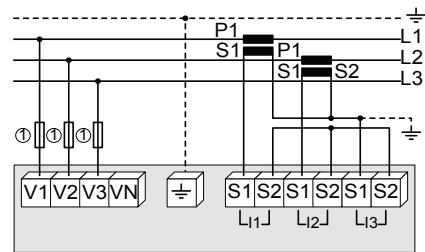
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5A gG / 0.5A class CC

3 wires with 2CTs

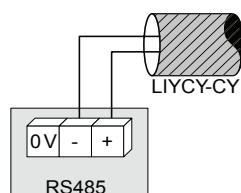


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

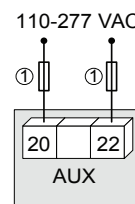
1. Fuses 0.5A gG / 0.5A class CC

Additional information

Communication via RS485 link



AC auxiliary power supply



1. Fuses 0.5A gG / 0.5A class CC

DIRIS A20

Multifunction Meter

Electrical Characteristics

Current Measurement (TRMS)	
Via CT primary	9,999 A
Via CT secondary	5A
Measurement range	0-11 kA
Input consumption	0.6 VA
Measurement updating period	1s
Accuracy	0.2%
Permanent overload	6A
Intermittent overload	10 I _n for 1s
Voltage Measurement (TRMS)	
Direct measurement between phases	50-500 VAC
Direct measurement between phase and neutral	28-289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1s
Accuracy	0.2%
Permanent overload	800VAC
Power Measurement	
Measurement updating period	1s
Accuracy	0.5%
Power Factor Measurement	
Measurement updating period	1s
Accuracy	0.5%
Frequency Measurement	
Measurement range	45-65 Hz
Measurement updating period	1s
Accuracy	0.1%
Energy Accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary Power Supply	
Alternating voltage	110-240 VAC
AC tolerance	+/-10%
Direct voltage	120-250 VDC
DC tolerance	+/-20%
Frequency	50/60 Hz
Consumption	10VA
Digital Output, optional module (Pulse or Alarm)	
Number	1
Type	100VDC; 0.5A; 10VA
Max. number of operations	≤ 10 ⁸
Communication	
Link	RS485
Type	2-3 half duplex wires
Protocol	Modbus RTU
MODBUS® speed	1400-38400 baud
Operating Conditions	
Operating temperature	+14 to +131° F / -10 to +55° C
Storage temperature	-4 to +185° F / -20 to +85° C
Relative humidity	95%

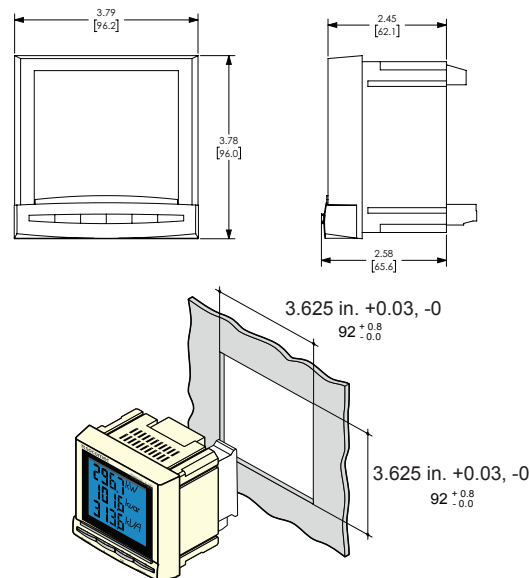
Front panel



- 1 Backlit LCD display.
2. Direct access for currents (instantaneous and max. values), current THD and test function.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive, and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies, hour meter and programming menu.

Case dimensions

Inches [mm]



Please see our website www.AutomationDirect.com for complete engineering drawings.

Physical characteristics	
Type	Panel mounting
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD display, blue background
Character size and type	4 characters, black, 15mm (0.59 in.)
Terminal block type	Fixed or plug-in
Voltage and other connection cross-section	AWG 24-14 (0.2-2.5 mm ²)
Current connection cross-section	AWG 20-10 (0.5-6 mm ²)
Weight	14.11 oz / 400 g

DIRIS A20

Multifunction Meter



Plug-in Modules

**4825U200****48250080**

1 Output

- 1 output assignable to:
 - Pulses: configurable (type, weight, duration) in kWh or kvarh
 - Monitoring: 3I, In, 3V, 3U, F, ΣP , ΣQ , ΣS , $\Sigma PFL/C$, THD 3I, THD 3V, THD 3U and timer
 - Remote command of device

**48250082**

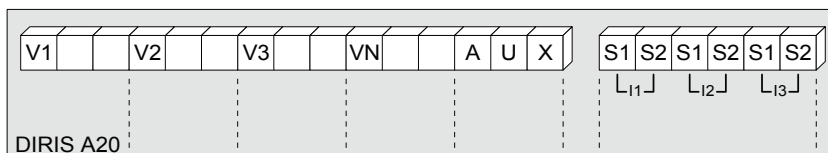
Communication

- RS485 link with JBUS/Modbus RTU protocol (speed up to 38400 baud)

DIRIS A20 (4825U200) Plug-in Modules			
Part Number	Description	Module type	Price
48250080	Optional configurable output module for the DIRIS A20	Output	\$78.00
48250082	Optional Modbus RTU (RS485) communications module for the DIRIS A20	Communication	\$70.00

Note: Diris A20 can accept a maximum of two plug-in modules.

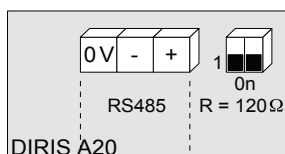
Terminals



S1, S2: Current inputs

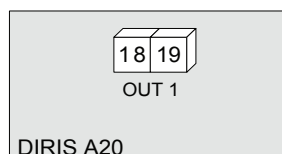
AUX: Auxiliary power supply U_S
V1, V2, V3 and Vn: voltage inputs

Communication module



RS485 link
R=120Ω: Selectable internal resistance for RS485 end of line termination

Pulse output or alarm module



18-19: Output

DIRIS A20

Multifunction Meter



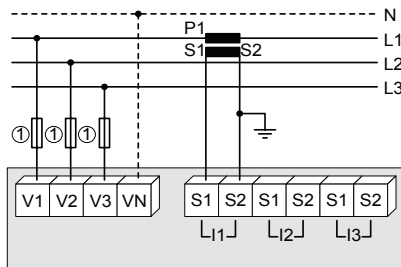
Connection

CAUTION:

- For IT grounding systems, it is recommended that the CT secondary is not connected to ground.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out using AutomationDirect's KN-2JM10 shorting jumpers and KN-KBD10 terminal blocks.

Low voltage balanced network

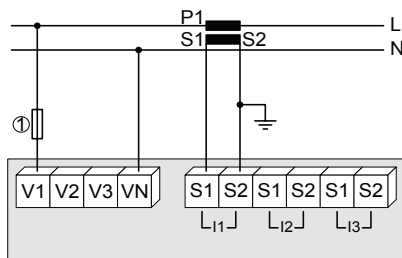
3/4 wires with 1 CT



Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

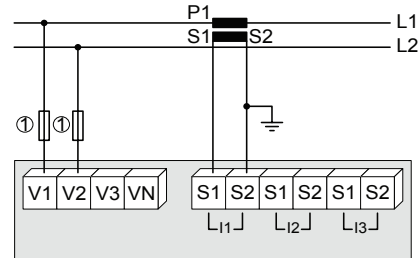
1. Fuses 0.5A gG / 0.5A class CC

Single-phase



1. Fuses 0.5A gG / 0.5A class CC

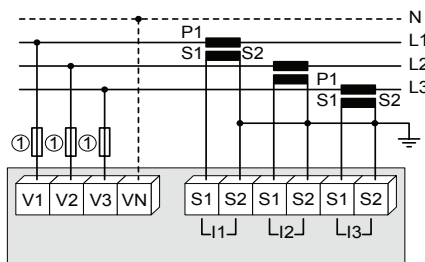
Two phase



1. Fuses 0.5A gG / 0.5A class CC

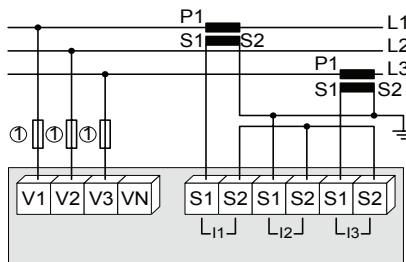
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5A gG / 0.5A class CC

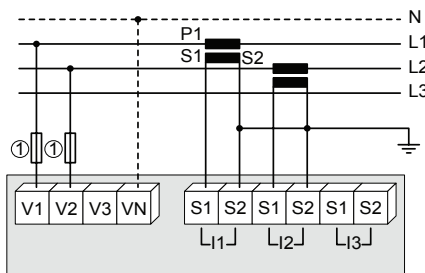
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

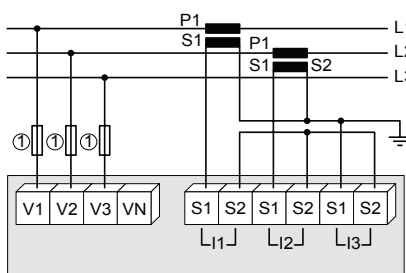
1. Fuses 0.5A gG / 0.5A class CC

2 wires with 2 CTs



1. Fuses 0.5A gG / 0.5A class CC

3 wires with 2CTs

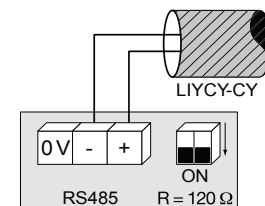


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5A gG / 0.5A class CC

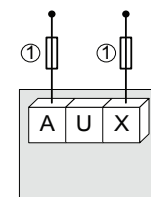
Additional information

Communication via RS485 link



AC & DC auxiliary power supply

110 / 240 VAC
120 / 250 VDC



1. Fuses 0.5A gG / 0.5A class CC

DIRIS

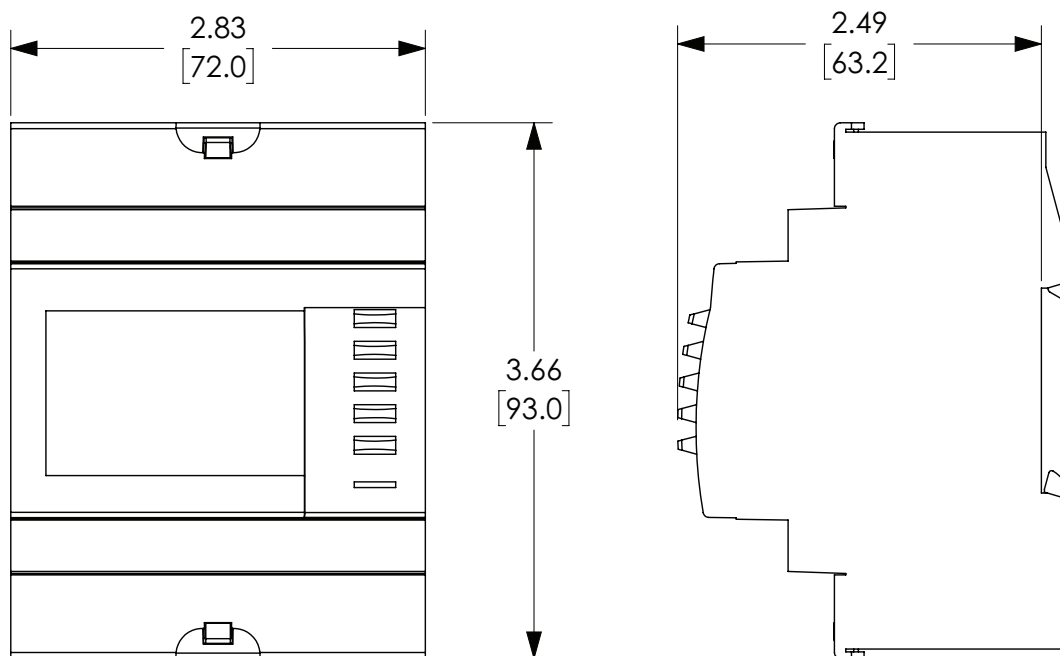
Multifunction Meters



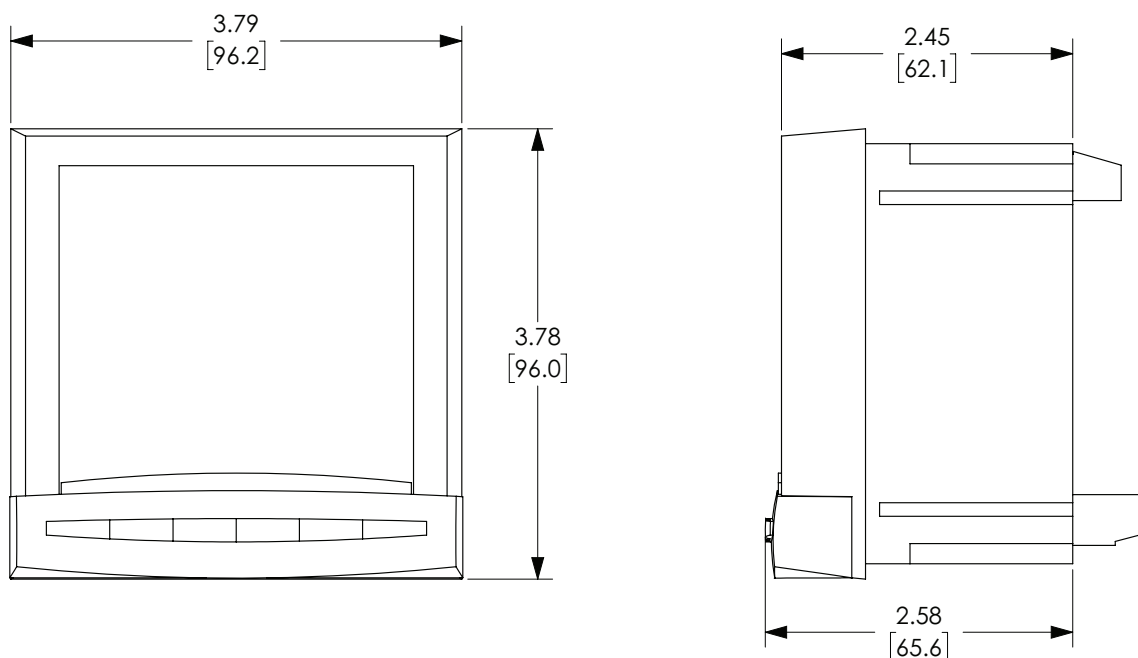
Dimensions

Inches [mm]

4825U01x DIRIS A10 DIN Rail Mount Multifunction Meter (inches [mm])



4825U200 DIRIS A20 Panel Mount Multifunction Meter (inches [mm])



Please see our website www.AutomationDirect.com for complete engineering drawings.

DIRIS

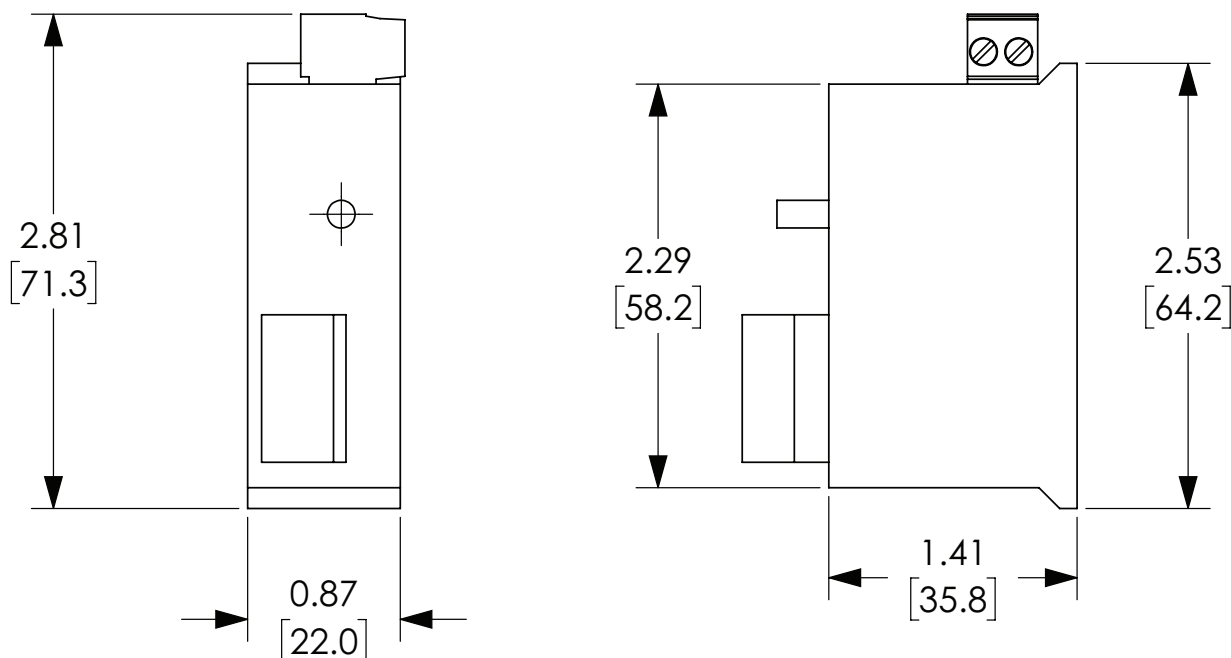
Multifunction Meters



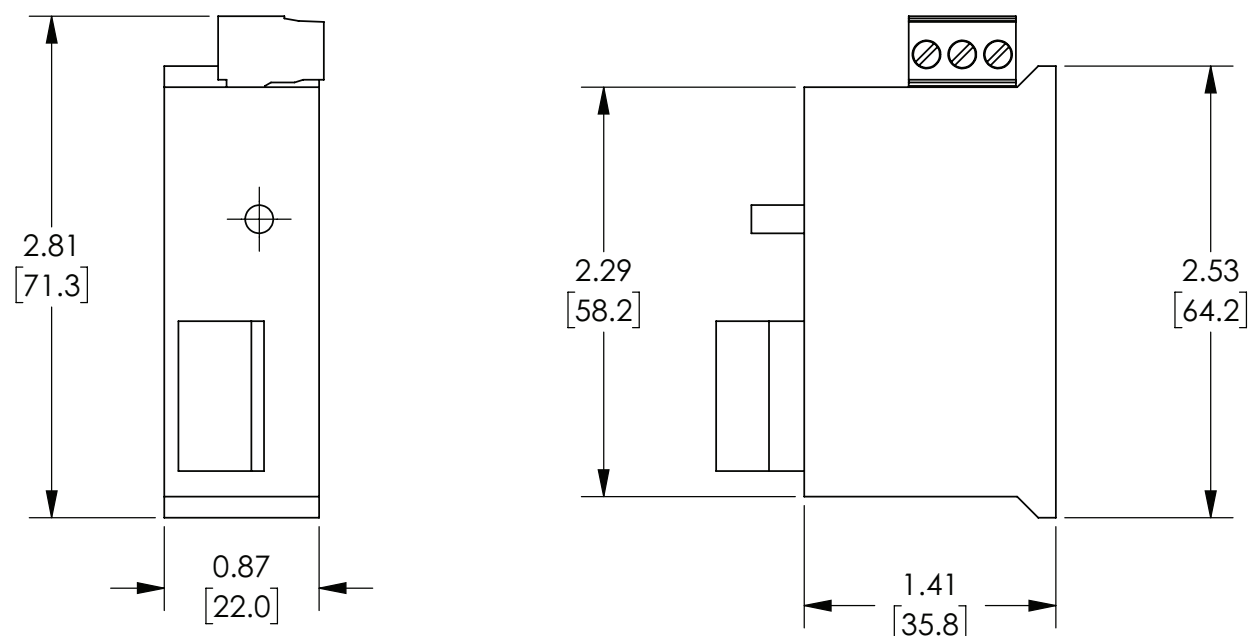
Dimensions

Inches [mm]

48250080 Optional Output Module for DIRIS A20



48250082 Optional RS485 Module for DIRIS A20



Please see our website www.AutomationDirect.com for complete engineering drawings.

Trumeter ADM Series Graphical Panel Meters



Graphical panel meters with versatile programmable features and user-configurable alarms

Trumeter's line of graphical panel meters combines the instant visual representation of an analog meter with the accuracy of a digital meter.

These meters feature a programmable bar graph and alarms to immediately alert operators when a parameter is out of range. In addition, a four-character messaging area displays custom messages, alarms and annunciators.

Each meter is configurable to measure voltage, current or frequency. The ADM100-Lx model is for use with a low voltage power supply, and the ADM100-Hx is for use with mains power. Both models offer two LCD options – positive LCD for bright conditions or negative LCD for dark environments.

Flexible metering solution

- Fully programmable scalable input
- User-selectable measurement range (min, max and span)
- Two independent alarm outputs
- A fully scaled analog monitor output
- Programmable backlight automatically changes color or flashes when the input reaches a certain value or goes outside a specific range
- Configurable via an easy-to-use PC utility

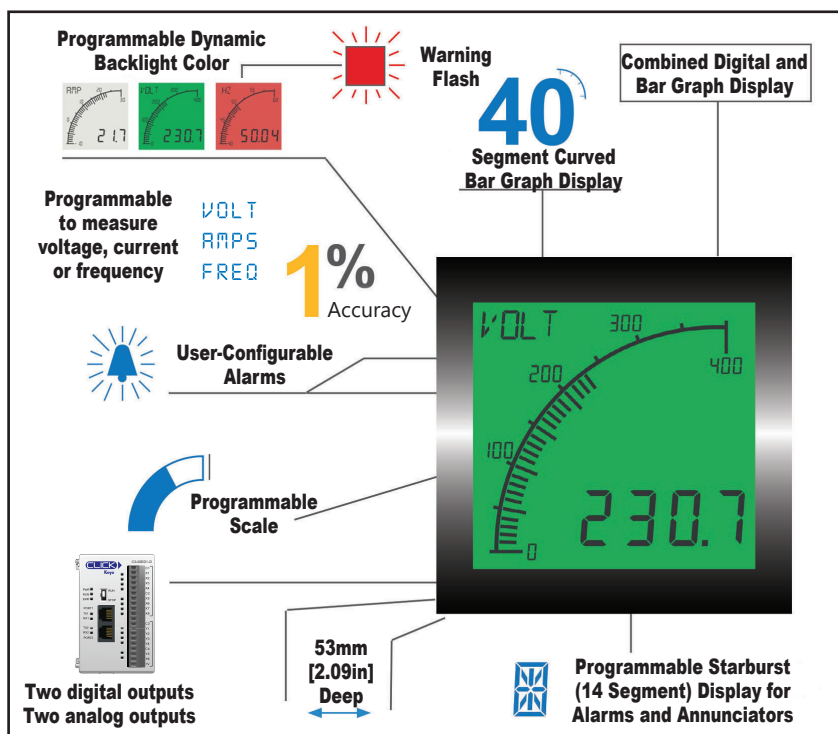
**ADM100-LN
ADM100-HN**
Negative LCD
Bright digits on black background



**ADM100-LP
ADM100-HP**
Positive LCD
Black digits on bright background



UL file # E469787



Key features

- Large multi-format display
- 40-segment bar graph display
- Large 4-digit display
- Separate starburst display area for annunciators, custom message and alarm information
- Dynamic backlight color
- User-adjustable backlight brightness, flash and color (red, green, white)
- Wide viewing angle (both horizontal and vertical)
- Three-year warranty (with registration at trumeter.com)

Overview

Measurement

- Voltage: 0-600 AC or DC
- Current: 0-5A direct
- 0-9,999A via CT
- Frequency: 2-400 Hz (not recommended for VFD or non-sinewave sources)

Outputs

- 2x digital open collector
- 2x analog 4-20 mA

Input Power

- ADM100-Lx: 12-24 VAC/VDC (+/- 10%)
- ADM100-Hx: 100-240 VAC or 110-300 VDC (+/- 10%)

Free Configuration Utility Download

- PC utility via USB
- Basic configuration without PC (default setting is volts)

Display Options

- Positive LCD (bright environments)
- Negative LCD (dark environments)

Programmable

- Scale (offset and gain) and Range (min and max)
- Four-character starburst for custom annunciators
- User-selectable backlight color and intensity
- Two independent alarm set-points
- Two independent outputs
- 4-20 mA analog monitor output

Trumeter ADM Series Graphical Panel Meters



Graphical Panel Meters		
Part Number	Description	Price
<u>ADM100-LP</u>	Graphical Panel Meter. Supply voltage 12-24 VAC/VDC. Positive LCD. Current, voltage or frequency input with two discrete or analog configurable outputs.	\$95.00
<u>ADM100-LN</u>	Graphical Panel Meter. Supply voltage 12-24 VAC/VDC. Negative LCD. Current, voltage or frequency input with two discrete or analog configurable outputs.	\$95.00
<u>ADM100-HP</u>	Graphical Panel Meter. Supply voltage 100-240 VAC. Positive LCD. Current, voltage or frequency input with two discrete or analog configurable outputs.	\$103.00
<u>ADM100-HN</u>	Graphical Panel Meter. Supply voltage 100-240 VAC. Negative LCD. Current, voltage or frequency input with two discrete or analog configurable outputs.	\$103.00

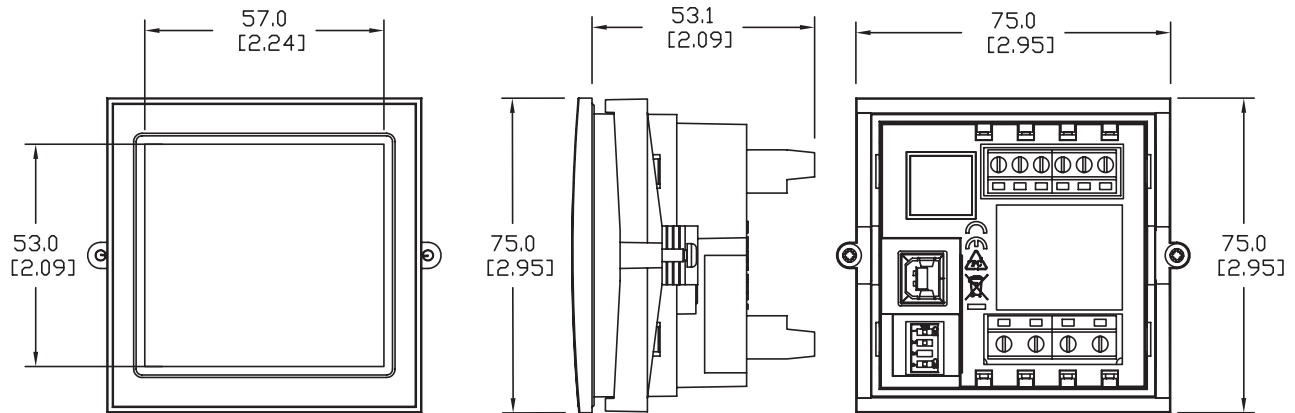
Trumeter ADM Series Graphical Panel Meters				
Part Number	ADM100-LP	ADM100-LN	ADM100-HP	ADM100-HN
	Power Supply			
Input	12-24 VAC/VDC +/- 10%		100-240 VAC or 110-300 VDC (+/-10%)	
Power Consumption	1.6 W (max)		1.6 W (max)	
Supply Frequency	50-400 Hz		47-63 Hz	
	Measurement Inputs			
Voltage	0-600 VAC/VDC RMS			
Current (Direct Connection)	0-5A			
Current (With Current Transformer)	0-9,999A			
Frequency	2-400Hz (not recommended for non-sinewave sources)			
	Display			
User Configurable Backlight Colors	Red, Green, White			
Positive/Negative LCD	Positive	Negative	Positive	Negative
Readout Text Character Size	Four-digit display, 0.47 in [12mm]			
Message Text Character Size	Four-digit display, 0.24 in [6mm]			
Bar Graph Character Size	40 segments, 0.24 in [6mm]			
	Environmental			
Operating Temperature	14 to 140°F (-10 to 60°C)			
Storage Temperature	-40 to 158°F (-40 to 70°C)			
IP Rating (from the front)	IP65, NEMA type 4 and NEMA type 12			
	Analog Outputs (2)			
Output	4-20 mA			
Accuracy	0.50%			
Resolution	0.02 mA			
	Open Collector Outputs (2)			
Max Voltage	34VDC			
Max Current	500mA			
	Programming			
Programming Port	USB 2.0 (requires USB Type A to Type B cable, sold separately – USB-CBL-AB3, AB6, AB10 or AB15)			
	Agency Approvals			
Certification	CE, UL (File #E469787)			
	Mechanical			
Wire Connection Type	Screw Terminals			
Wire Gauge (Solid or Stranded)	18AWG to 12AWG (0.8 mm² - 3.3 mm²). Torque 0.5-0.6 Nm [4.43-5.31 lb-in]			
Weight	6.35 oz (180g)			
Mounting Clips Screw Torque	<0.4 Nm [3.54 lb-in]			

Trumeter ADM Series Graphical Panel Meters



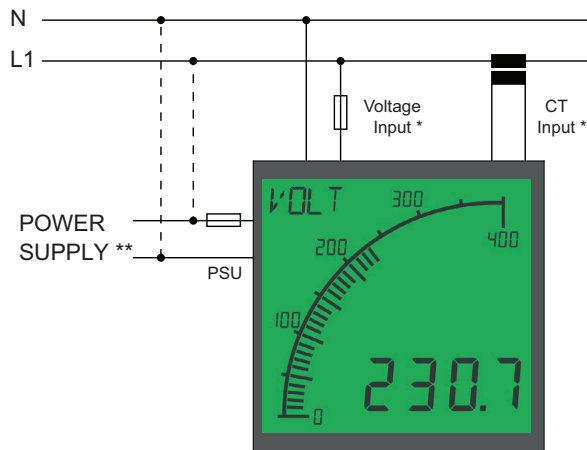
Dimensions

mm [inches]



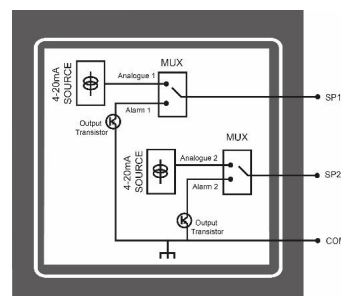
Wiring Diagrams

Single phase 2-wire (1P2W)

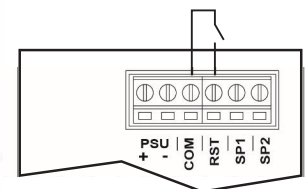


Rear connections

Outputs



Reset for Peak Hold

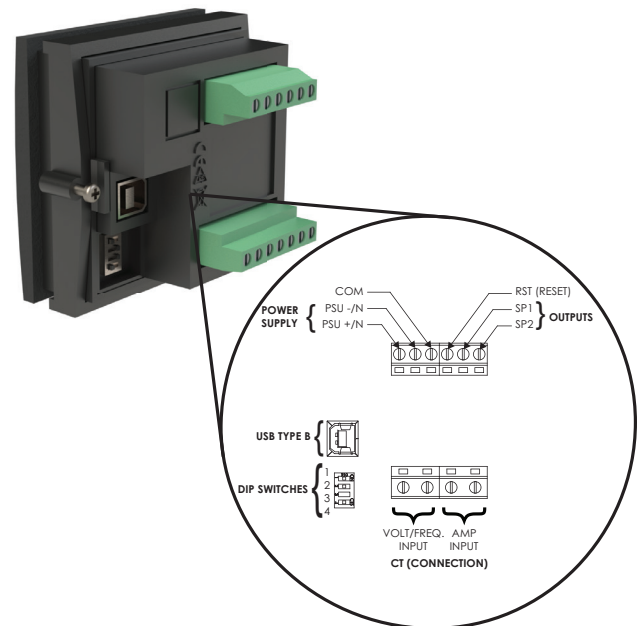
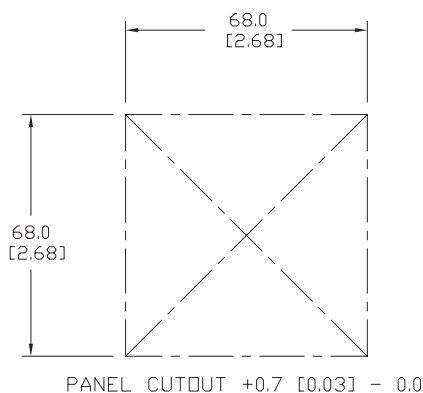


* Both connection options shown. User must select one (volts, amps or frequency) to be displayed.

** Dotted lines show 100-240 VAC power option on ADM100-Hx models. ADM100-Lx units use the 12-24 VAC/VDC PSU connection shown.

Panel Cutout Dimensions

mm [inches]



Note: DIP switch setting is 0 for positions 1, 2, 3 and 4 off. To change the default setting, visit <https://support.automationdirect.com/downloads.html#tools> for free Trumeter ADM configuration utility download.

Please see our website www.AutomationDirect.com for complete engineering drawings.

Trumeter ADM Series CT Meters



For AC current measurement when using current transformers

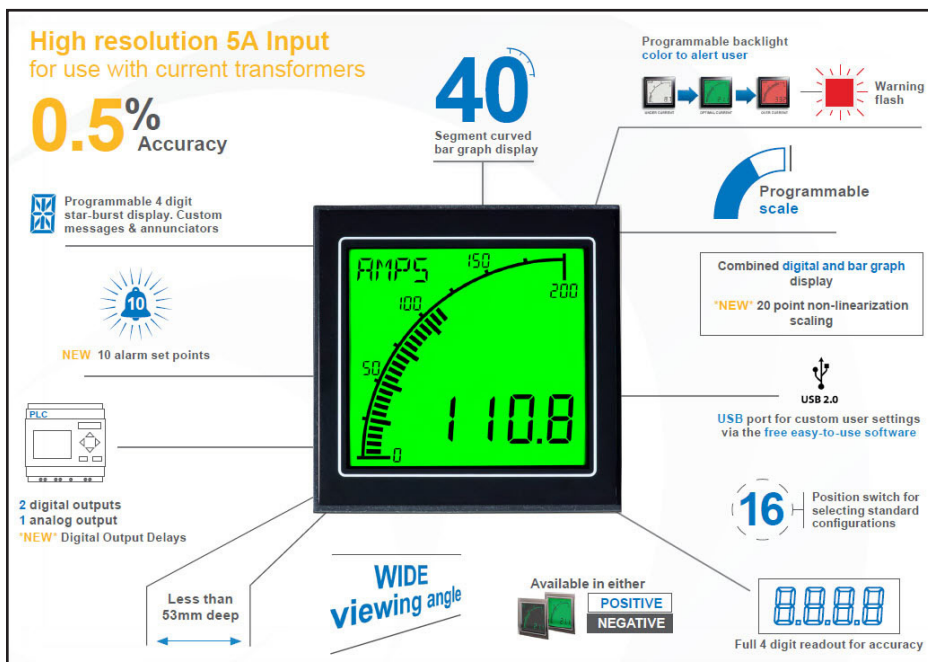
NEW digital output delays

NEW 10 alarm set points

NEW 20-point non-linearization scaling

The CT Meter is designed specifically for use with current transformers. When used with an external current transformer, it can accurately measure current up to 10,000 amps. The CT Meter also provides a range of features including alarm set-points and three-color dynamic backlighting.

The customizable four-character message display and scalability enable users to tailor the meter to display critical parameters to any desired specifications. The set-points, coupled with the backlighting, allow operators to be visually alerted when a parameter is out of range. The two outputs can be used to connect the ADM to other systems in the process.



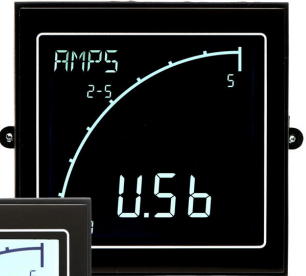
Key features

- 40-segment bar graph display
- Large 4-digit display
- Separate starburst display area for annunciators, custom messages and alarm information
- Dynamic backlight color
- User-adjustable backlight brightness and color (red, green, white)
- Wide viewing angle (horizontal and vertical)
- Custom annunciators
- Three-year warranty

ADM100C-LN

Negative LCD

Bright digits on black background



ADM100C-LP

Positive LCD

Black digits on bright background



Overview

Measurement

- Current range (via external CT): 0-9,999 A
- Accuracy: 0.5 %

Outputs

- Max voltage: 34V
- Max current: 500mA
- Analog: 4-20 mA

Power Supply

- 12-24 VAC/VDC, 1.6 W

Free Configuration Utility Download

- PC utility via USB
- Basic configuration without PC (default setting is amps)

Display Options

- Positive LCD (bright environments)
- Negative LCD (dark environments)

Programmable

- Display range (Min and Max values)
- Custom annunciators
- User-selectable backlight color and intensity
- Two independent alarm set-points
- Two independent outputs
- 4-20 mA analog monitor output

Trumeter ADM Series CT Meters



Trumeter ADM Series CT Meters Selection Guide

Part Number	Price	Description	Drawing
ADM100C-LN	\$91.00	CT meter, programmable, with outputs, negative LCD display	PDF
ADM100C-LP	\$91.00	CT meter, programmable, with outputs, positive LCD display	PDF

Trumeter ADM Series CT Meters Specifications

Part Number	ADM100C-LN	ADM100C-LP
	Power Supply	
Input	12 - 24 VAC or VDC	
Power Consumption	1.6 W	
Supply Frequency	50-400 Hz	
	Current Input	
Range (CT Output Current)¹	0-5 A	
Range (via external CT)	0-9,999 A	
Accuracy	0.5 %	
	Display	
User Configurable Backlight Colors	Red, Green, White	
Positive/Negative LCD	Negative	Positive
Readout Text Character Size	Four-digit display, 0.47 in [12mm]	
Message Text Character Size	Four-digit display, 0.24 in [6mm]	
Bar Graph Character Size	40 segments, 0.24 in [6mm]	
	Environmental	
Operating Temperature	14 to 140°F [-10 to 60°C]	
Storage Temperature	-40 to 158°F [-40 to 70°C]	
IP Rating (from the front)	IP65, NEMA type 4 and NEMA type 12	
	Analog Outputs (2)	
Analog Output	4-20 mA	
Accuracy	0.50% (full-scale deflection or FSD)	
Resolution	0.02 mA	
	Open Collector Outputs (2)	
Max Voltage	34VDC	
Max Current	500mA	
	Programming	
Programming Port	USB 2.0 (requires USB Type A to Type B cable, sold separately – USB-CBL-AB3, AB6, AB10 or AB15)	
	Agency Approvals	
Certification	UL File # E469787, CE	
	Mechanical	
Wire Connection Type	Screw Terminals	
Wire Gauge (Solid or Stranded)	18AWG to 12AWG (0.8 mm ² - 3.3 mm ²). Torque 0.5-0.6 Nm [4.43-5.31 lb-in]	
Weight	6.35 oz (180g)	
Mounting Clips Screw Torque	<0.4 N•m [3.54 lb•in]	

Note 1 - Caution: The ADM CT meter has been designed to be used with an external current transformer. Never connect the meter directly to a live circuit.

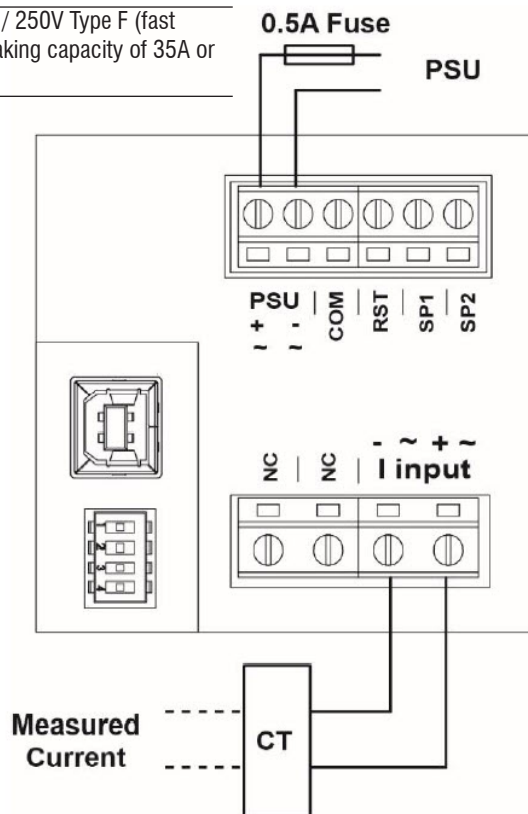
Trumeter ADM Series CT Meters



Wiring Diagram

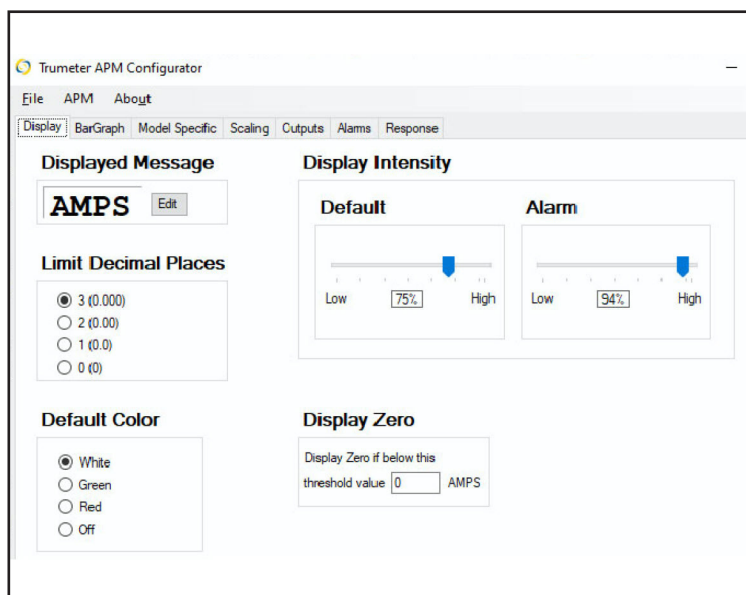
CT METER
Using Current Transformer

All fuses must be 0.5A / 250V Type F (fast acting fuse) with a breaking capacity of 35A or greater.



Easy-To-Use Configuration Tool

Just plug into any USB port on your PC, run the free ADM Configuration application, and you're off.



Trumeter ADM Series Process Meters

For industrial process monitoring applications

NEW digital output delays

NEW 10 alarm set points

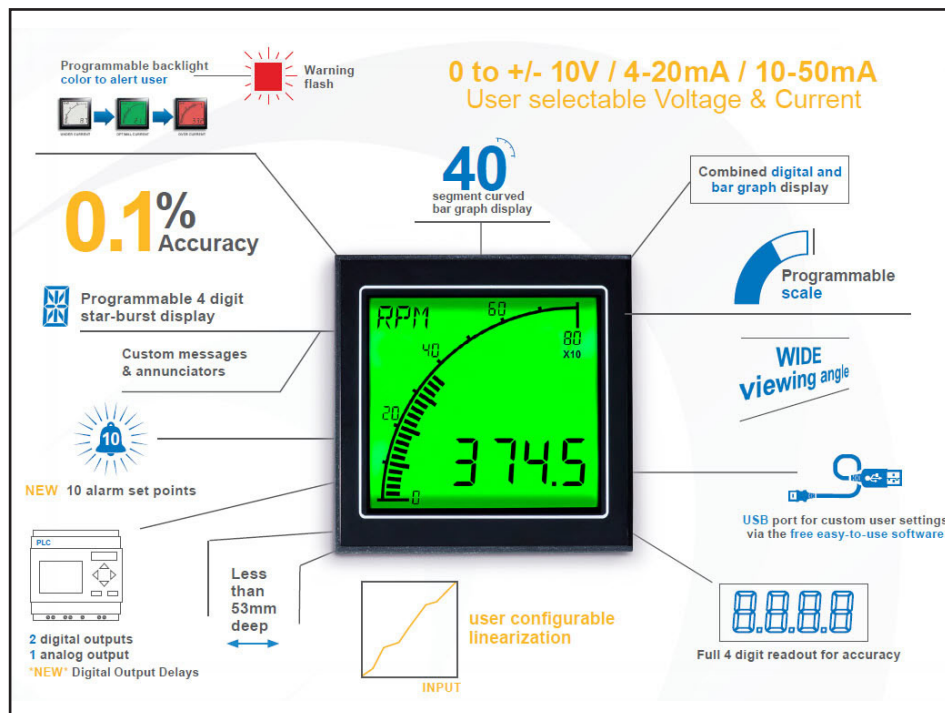
NEW 20-point non-linearization scaling

Trumeter ADM Series Process Meters feature an acclaimed easy-to-read display and a versatile set of inputs, making them ideal for a wide range of industrial applications.

The programmable scale and custom annunciators allow users to tailor the meter to display critical parameters exactly as desired. In addition, dynamic backlighting, in conjunction with setpoints, alerts operators visually when a parameter is out of range. These meters also feature two outputs which can be used to control other systems in the process. The ADM Process Meter is much more than just a display.

Trumeter's innovative technology brings a greater level of accuracy to the ADM range through input signal optimization. By using this technology, accuracy of 0.1% or better is now achieved, allowing for more precise measurement, display and control.

Non-linear sensors such as thermocouples and pressure transducers can also be used, thanks to the new ADM Configurator application which allows the user to configure up to 20 points in a non-linear conversion table.



Key features

- 40-segment bar graph display
- Large 4-digit display
- Separate starburst display area for annunciators, custom messages and alarm information
- Dynamic backlight color
- User-adjustable backlight brightness and color (red, green, white)
- Wide viewing angle (horizontal and vertical)
- Custom annunciators
- Three-year warranty



ADM100P-LN

Negative LCD

Bright digits on black background



ADM100P-LP

Positive LCD

Black digits on bright background



Overview

Voltage Input

- 0 to +/- 10VDC, impedance 100KΩ
- Accuracy: 0.1 % of input or 5mV, whichever is greater

Current Input

- 0-50 mA, impedance 15Ω
- Accuracy: 0.01 % of input or 5μA, whichever is greater

Outputs

- Max voltage: 34V
- Max current: 500mA
- Analog: 4-20 mA

Power Supply

- Nominal input: 12-24 VAC/VDC. 1.6 W

Free Configuration Utility Download

- PC utility via USB
- Basic configuration without PC (default setting is volts)

Display Options

- Positive LCD (bright environments)
- Negative LCD (dark environments)

Programmable

- Display range (Min and Max values)
- Custom annunciators
- User-selectable backlight color and intensity
- Two independent alarm set-points
- Two independent outputs
- 4-20 mA analog retransmission output

Trumeter ADM Series Process Meters



Trumeter ADM Series Process Meters Selection Guide

Part Number	Price	Description	Drawing
ADM100P-LN	\$100.00	Process meter, programmable, with outputs, negative LCD display	PDF
ADM100P-LP	\$100.00	Process meter, programmable, with outputs, positive LCD display	PDF

Trumeter ADM Series Process Meters Specifications

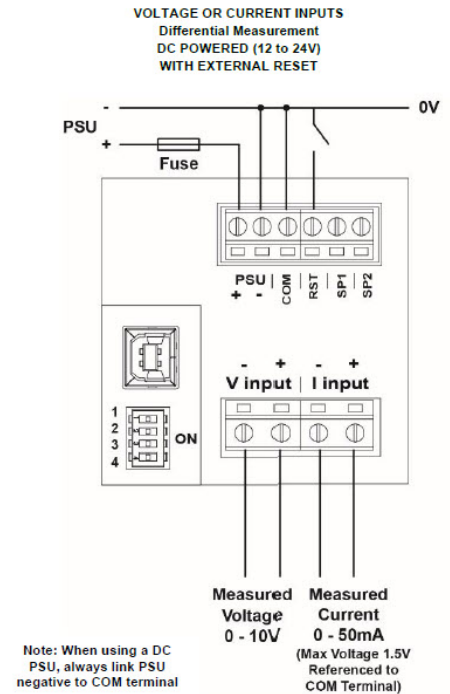
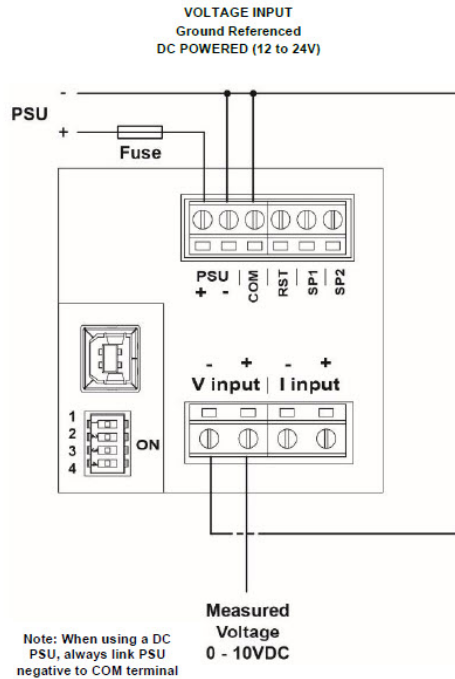
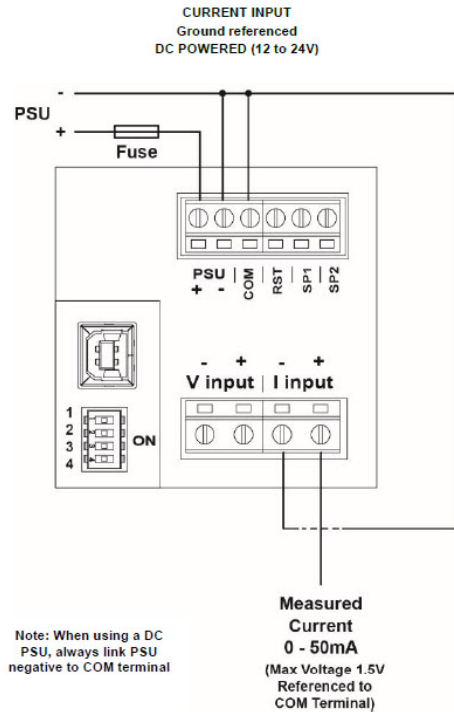
Part Number	ADM100P-LN	ADM100P-LP
	Power Supply	
Input	12 - 24 VAC/VDC	
Power Consumption	1.6 W	
Supply Frequency	50-400 Hz	
	Voltage Input	
Range	0 to +/-10VDC	
Impedance	100KΩ	
Accuracy	0.1 % of input or 5mV, whichever is greater	
	Current Input	
Range	0 to 50 mA	
Impedance	15Ω	
Accuracy	0.01 % of input or 5μA, whichever is greater	
	Display	
User Configurable Backlight Colors	Red, Green, White	
Positive/Negative LCD	Negative	Positive
Readout Text Character Size	Four-digit display, 0.47 in [12mm]	
Message Text Character Size	Four-digit display, 0.24 in [6mm]	
Bar Graph Character Size	40 segments, 0.24 in [6mm]	
	Environmental	
Operating Temperature	14 to 140°F [-10 to 60°C]	
Storage Temperature	-40 to 158°F [-40 to 70°C]	
IP Rating (from the front)	IP65, NEMA type 4 and NEMA type 12	
	Analog Outputs (2)	
Analog Output	4-20 mA	
Accuracy	0.50% (full-scale deflection or FSD)	
Resolution	0.02 mA	
	Open Collector Outputs (2)	
Max Voltage	34VDC	
Max Current	500mA	
	Programming	
Programming Port	USB 2.0 (requires USB Type A to Type B cable, sold separately – USB-CBL-AB3, AB6, AB10 or AB15)	
	Agency Approvals	
Certification	UL file # E469787, CE	
	Mechanical	
Wire Connection Type	Screw terminals	
Wire Gauge (Solid or Stranded)	18AWG to 12AWG (0.8 mm ² - 3.3 mm ²). Torque 0.5-0.6 N•m [4.43-5.31 lb•in]	
Weight	6.35 oz (180g)	
Mounting Clips Screw Torque	< 0.4 N•m [3.54 lb•in]	

Trumeter ADM Series Process Meters



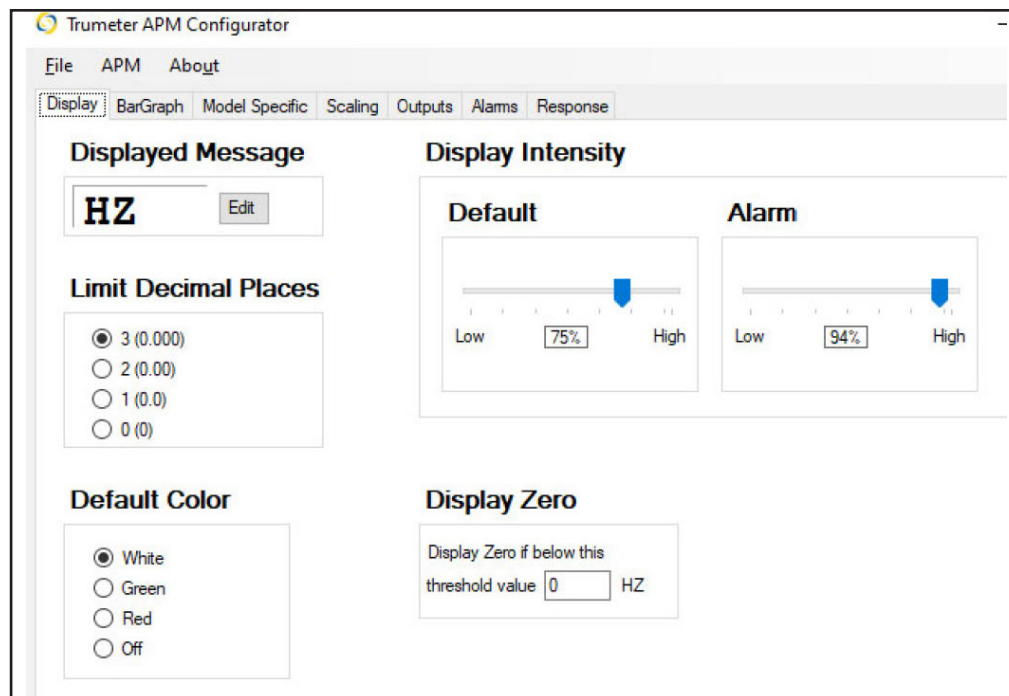
Wiring Diagrams

All fuses must be 0.5A / 250V Type F (fast acting fuse) with a breaking capacity of 35A or greater.



Easy-To-Use Configuration Tool

Just plug into any USB port on your PC, run the free ADM Configuration application, and you're off.



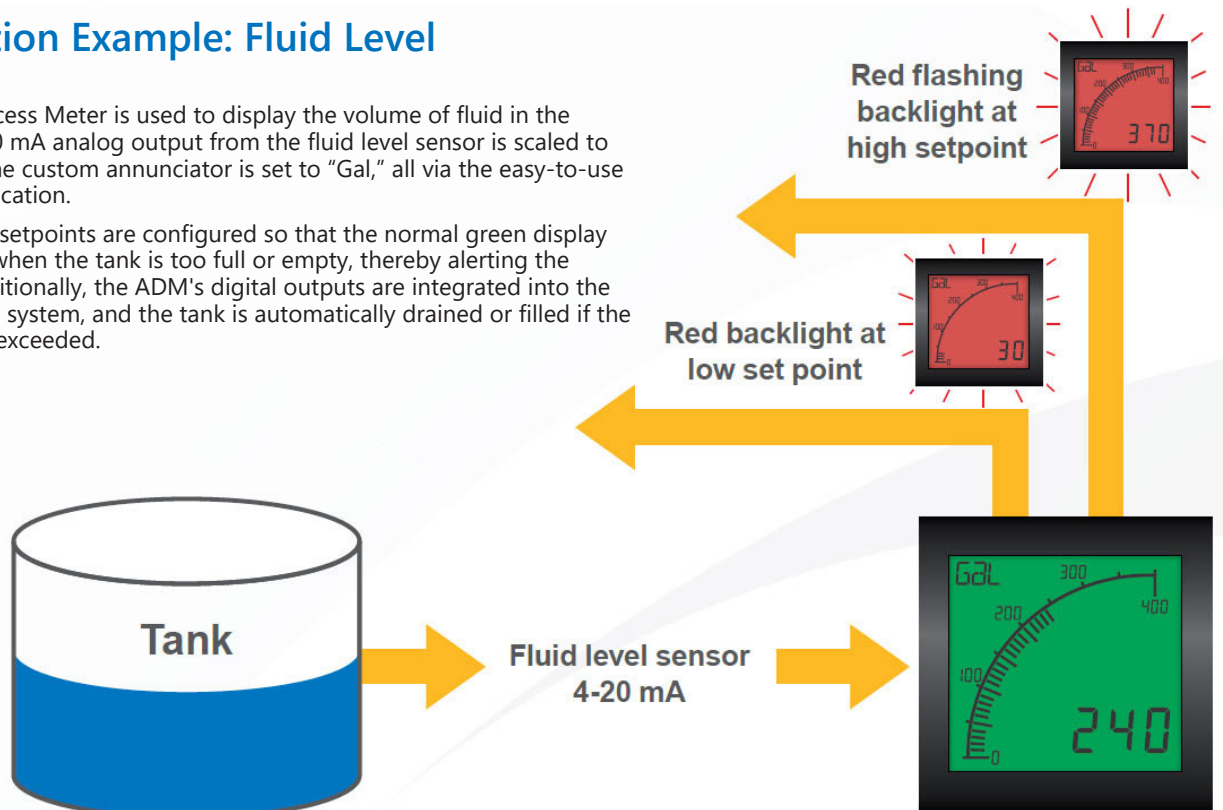
Trumeter ADM Series Process Meters



Application Example: Fluid Level

The ADM Process Meter is used to display the volume of fluid in the tank. The 4-20 mA analog output from the fluid level sensor is scaled to gallons and the custom annunciator is set to "Gal," all via the easy-to-use software application.

High and low setpoints are configured so that the normal green display will flash red when the tank is too full or empty, thereby alerting the operator. Additionally, the ADM's digital outputs are integrated into the tank pumping system, and the tank is automatically drained or filled if the setpoints are exceeded.

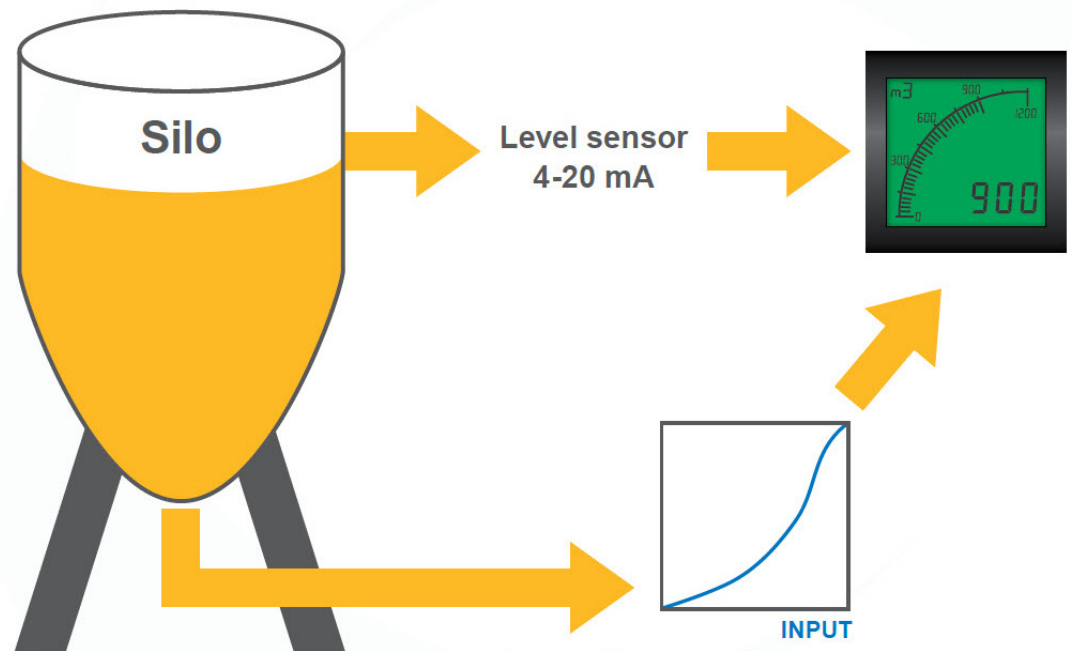


Application Example: Silo Volume

The ADM Process Meter is used to display the volume of material in the silo, using the analog output from a level sensor.

The signal from the sensor is scaled to measure cubic meters, and the annunciator is customized to m^3 , all via the easy-to-use software. Due to the irregular shape of the silo, the 20-point linearization table is used to correct the non-linear signal from the sensor.

The displayed value accurately shows the volume in the silo. High or low setpoints can be set, and the ADM Process Meter can be integrated into other systems for process control.



Trumeter ADM Series Rate Meters



Ideal for use in flow, production line and motor speed monitoring applications

NEW digital output delays

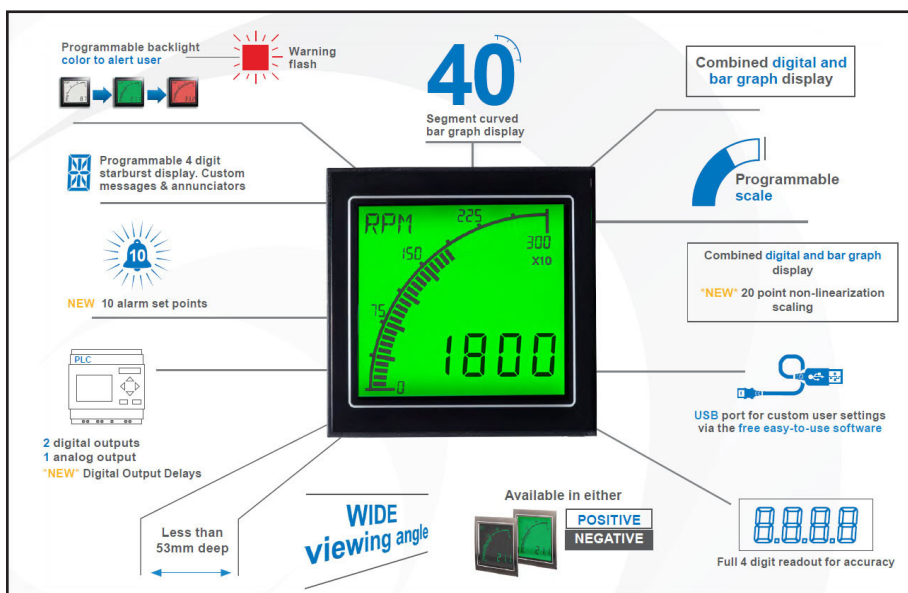
NEW 10 alarm set points

NEW 20-point non-linearization scaling

The ADM Rate Meter was developed for use in monitoring flow, production lines and motor speed. It combines the instant visual representation of an analog meter with the speed and accuracy of a digital meter.

The unique display is viewable in most environmental conditions. It features a programmable scale and color-changing backlight for instant recognition and precision measurement.

The ADM Rate Meter improves safety and efficiency through user-programmable alarm set-points, dynamic backlighting and starburst messaging that alerts operators of changing conditions instantly. It features digital and analog outputs to communicate with other components in a system, IP65 and NEMA type 4 and 12 ratings and an industry leading three-year warranty.



ADM100R-LN

Negative LCD

Bright digits on black background



ADM100R-LP

Positive LCD

Black digits on bright background



Overview

Measurement

- Max frequency: 60kHz
- Min frequency: 0.001 Hz
- Accuracy: 0.01 %

Max Working Voltage

- Input-COM: 36 VDC

Outputs

- Max voltage: 34V
- Max current: 500mA
- Analog: 4-20 mA

Power Supply

- 12-24 VDC, 1.6 W

Free Configuration Utility Download

- PC utility via USB
- Basic configuration without PC (default setting is Hertz)

Display Options

- Positive LCD (bright environments)
- Negative LCD (dark environments)

Programmable

- Scale and Gain
- Custom annunciators
- User selectable backlight color and intensity
- Two independent alarm set-points
- Two independent outputs
- 4-20 mA analog monitor output

Key features

- 40-segment bar graph display
- Large 4-digit display
- Separate starburst display area for annunciators, custom messages and alarm information
- Dynamic backlight color
- User-adjustable backlight brightness and color (red, green, white)
- Wide viewing angle (horizontal and vertical)
- Custom annunciators
- Three-year warranty

Trumeter ADM Series Rate Meters



Trumeter ADM Series Rate Meters Selection Guide

Part Number	Price	Description	Drawing
ADM100R-LN	\$100.00	Rate meter, programmable, with outputs, negative LCD display	PDF
ADM100R-LP	\$100.00	Rate meter, programmable, with outputs, positive LCD display	PDF

Trumeter ADM Series Rate Meters Specifications

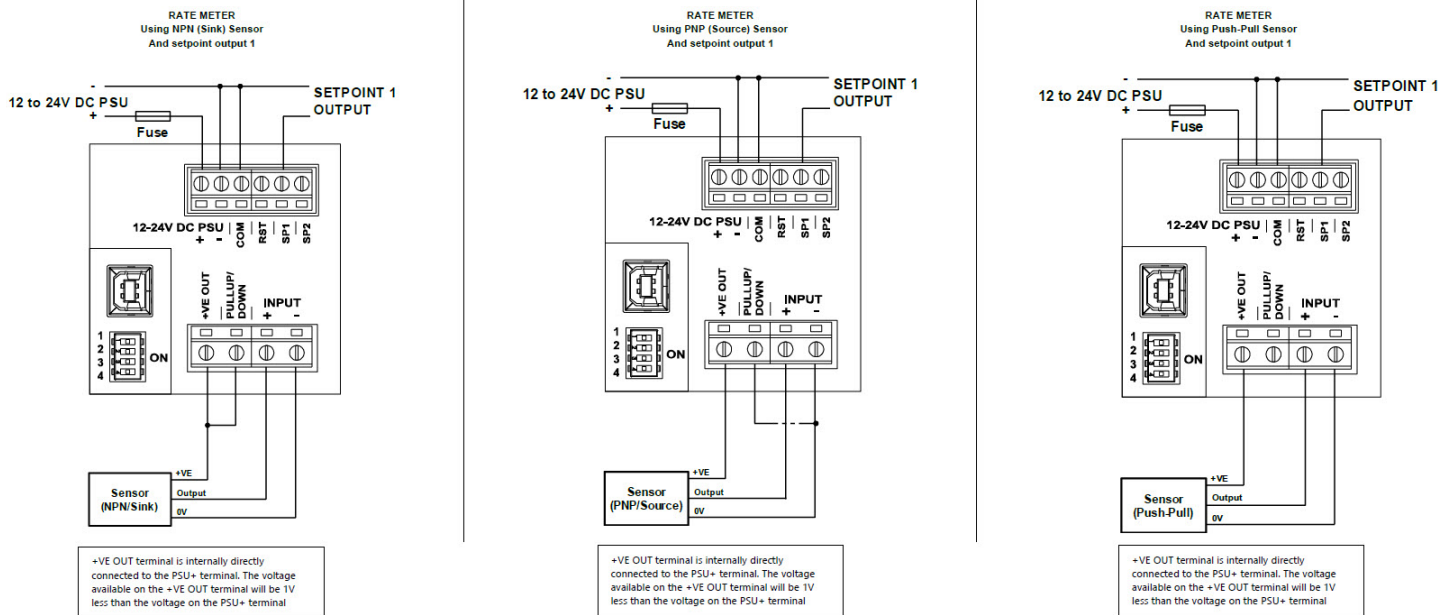
Part Number	ADM100R-LN	ADM100R-LP
	Measurement	
Max Frequency	60kHz	
Min Frequency	0.001 Hz	
Logic 0	<1.2 V	
Logic 1	> 2.0 V	
Accuracy	±0.01% (full-scale deflection or FSD)	
Max Working Voltage (input - COM)	36VDC	
	Power Supply	
Nominal Input	12-24 VDC	
Power Consumption	1.6 w	
	Display	
Display Update Time	0.1 to 999.9 s	
Scaling Factor	-100 to 1990x10	
User Configurable Backlight Colors	Red, Green, White	
Positive/Negative LCD	Negative	Positive
Readout Text Character Size	Four-digit display, 0.47 in [12mm]	
Message Text Character Size	Four-digit display, 0.24 in [6mm]	
Bar Graph Character Size	40 segments, 0.24 in [6mm]	
	Environmental	
Operating Temperature	14 to 140°F [-10 to 60°C]	
Storage Temperature	-40 to 158°F [-40 to 70°C]	
IP Rating (from the front)	IP65, NEMA type 4 and NEMA type 12	
	Outputs	
Analog Output	4-20 mA	
Max Voltage	34VDC	
Max Current	500mA	
	Programming	
Programming Port	USB 2.0 (requires USB Type A to Type B cable, sold separately – USB-CBL-AB3, AB6, AB10 or AB15)	
	Agency Approvals	
Certification	UL file # E469787, CE	
	Mechanical	
Wire Connection Type	Screw terminals	
Wire Gauge (Solid or Stranded)	18AWG to 12AWG (0.8 mm ² - 3.3 mm ²). Torque 0.5-0.6 N•m [4.43-5.31 lb•in]	
Weight	6.35 oz (180g)	
Mounting Clips Screw Torque	<0.4 N•m [3.54 lb•in]	

Trumeter ADM Series Rate Meters



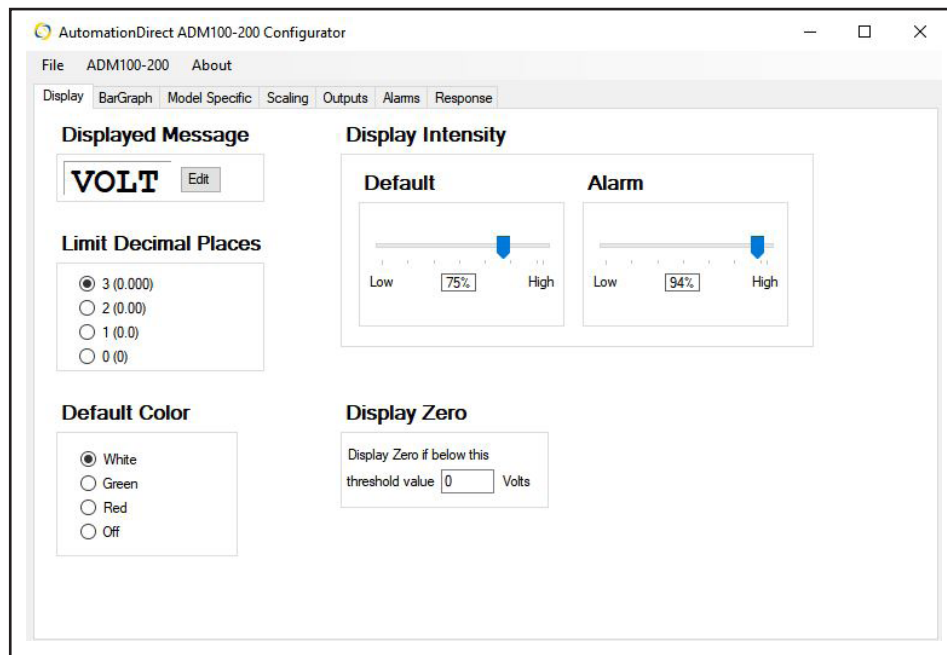
Wiring Diagrams

All fuses must be 0.5A / 250V Type F (fast acting fuse) with a breaking capacity of 35A or greater.



Easy-To-Use Configuration Tool

Just plug into any USB port on your PC, run the free ADM Configuration application, and you're off.



Trumeter ADM Series Temperature Meters



For use with thermocouples

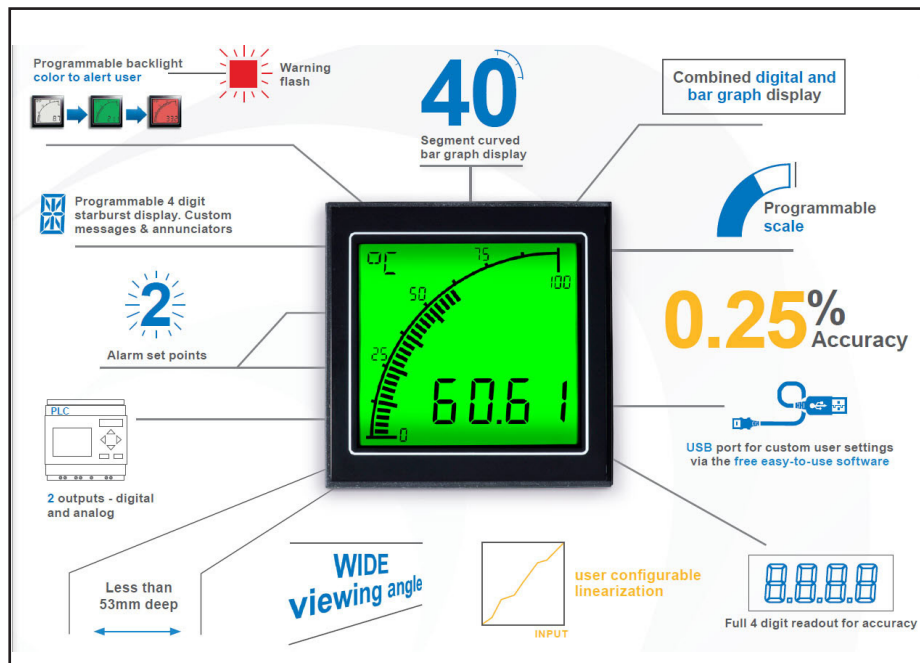
Featuring an acclaimed easy-to-read display and a versatile set of inputs, the Trumeter temperature meters take the ADM series into a wide range of new industrial applications.

The programmable scale and custom annunciators allow users to tailor the meter to display critical parameters exactly as desired, while the dynamic backlighting, in conjunction with setpoints, allows operators to be visually alerted when a parameter is out of range.

The two outputs can be used to control other systems in the process, meaning the ADM Temperature Meter is much more than just a display.

Trumeter's innovative input signal optimization achieves accuracy of 0.25% for precise measurement, display and control. Designed for use with thermocouples, the Temperature meter allows the user to configure up to 20 points in a non-linear conversion table via the ADM Configurator application in addition to the built-in thermocouple linearization.

UL file # E469787



ADM100T-LN

Negative LCD

Bright digits on black background



ADM100T-LP

Positive LCD

Black digits on bright background



Overview

Thermocouple

- Type B, E, J, K, N, R, S and T
- Accuracy 0.25% of full scale

Outputs

- Max voltage: 34V
- Max current: 500mA
- Analog: 4-20 mA

Power Supply

- 12-24 VAC/VDC, 1.6 W

Free Configuration Utility Download

- PC utility via USB
- Basic configuration without PC (default setting is Centigrade [C])

Display Options

- Positive LCD (bright environments)
- Negative LCD (dark environments)

Programmable

- Display range (Min & Max values)
- Custom annunciators
- User-selectable backlight color and intensity
- Two independent alarm set-points
- Two independent outputs
- 4-20 mA analog retransmission output

Key features

- 40-segment bar graph display
- Large 4-digit display
- Separate starburst display area for annunciators, custom messages and alarm information
- Dynamic backlight color
- User-adjustable backlight brightness and color (red, green, white)
- Wide viewing angle (horizontal and vertical)
- Custom annunciators
- Three-year warranty

Trumeter ADM Series Temperature Meters



Trumeter ADM Series Temperature Meters Selection Guide

Part Number	Price	Description	Drawing
ADM100T-LN	\$115.00	Temperature meter for use with thermocouple, programmable, with outputs, negative LCD display	PDF
ADM100T-LP	\$115.00	Temperature meter for use with thermocouple, programmable, with outputs, positive LCD display	PDF

Trumeter ADM Series Temperature Meters Specifications

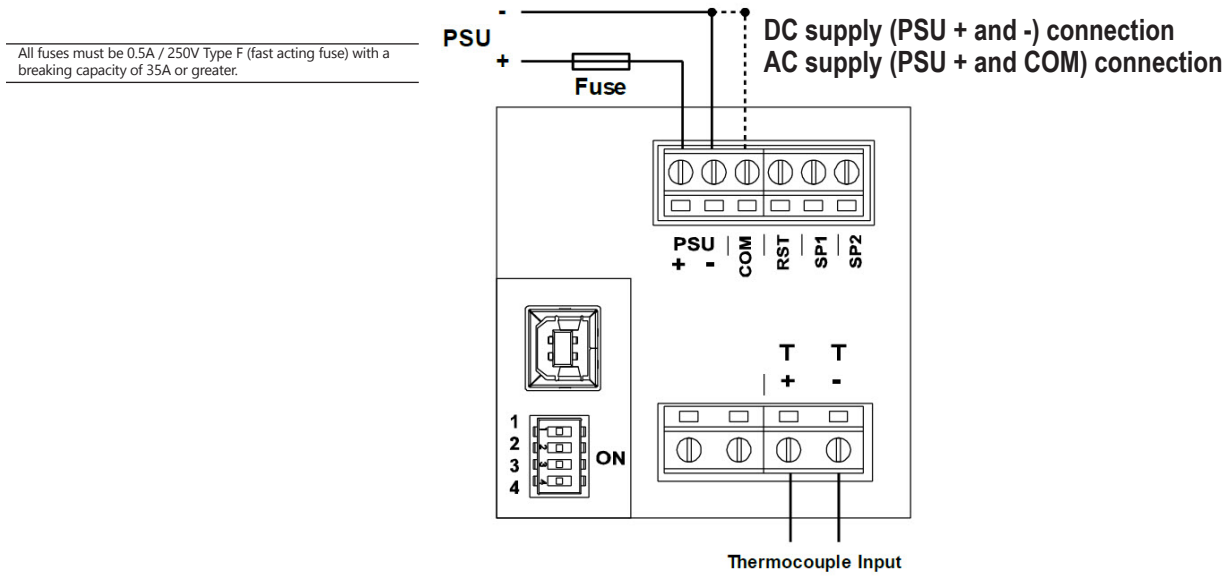
Part Number	ADM100T-LN	ADM100T-LP
	Measurement	
Input	Thermocouple Type B, E, J, K, N, R, S and T	
Accuracy	0.25% of full scale	
	Power Supply	
Nominal Input	12-24 VDC/VAC	
Max Power	1.6 W	
Frequency	DC or 50-400 Hz	
	Display	
User Configurable Backlight Colors	Red, Green, White	
Positive/Negative LCD	Negative	Positive
Readout Text Character Size	Four-digit display, 0.47 in [12mm]	
Message Text Character Size	Four-digit display, 0.24 in [6mm]	
Bar Graph Character Size	40 segments, 0.24 in [6mm]	
	Environmental	
Operating Temperature	14 to 140°F [-10 to 60°C]	
Storage Temperature	-40 to 158°F [-40 to 70°C]	
IP Rating (from the front)	IP65, NEMA type 4 and NEMA type 12	
	Outputs	
Max Voltage	34VDC	
Max Current	500mA	
Analog Output	4-20 mA	
	Programming	
Programming Port	USB 2.0 (requires USB Type A to Type B cable, sold separately – USB-CBL-AB3, AB6, AB10 or AB15)	
	Agency Approvals	
Certification	UL file # E469787, CE	
	Mechanical	
Wire Connection Type	Screw terminals	
Wire Gauge (Solid or Stranded)	18AWG to 12AWG (0.8 mm ² - 3.3 mm ²). Torque 0.5-0.6 N•m [4.43-5.31 lb•in]	
Weight	6.35 oz (180g)	
Mounting Clips Screw Torque	<0.4 N•m [3.54 lb•in]	

Trumeter ADM Series Temperature Meters



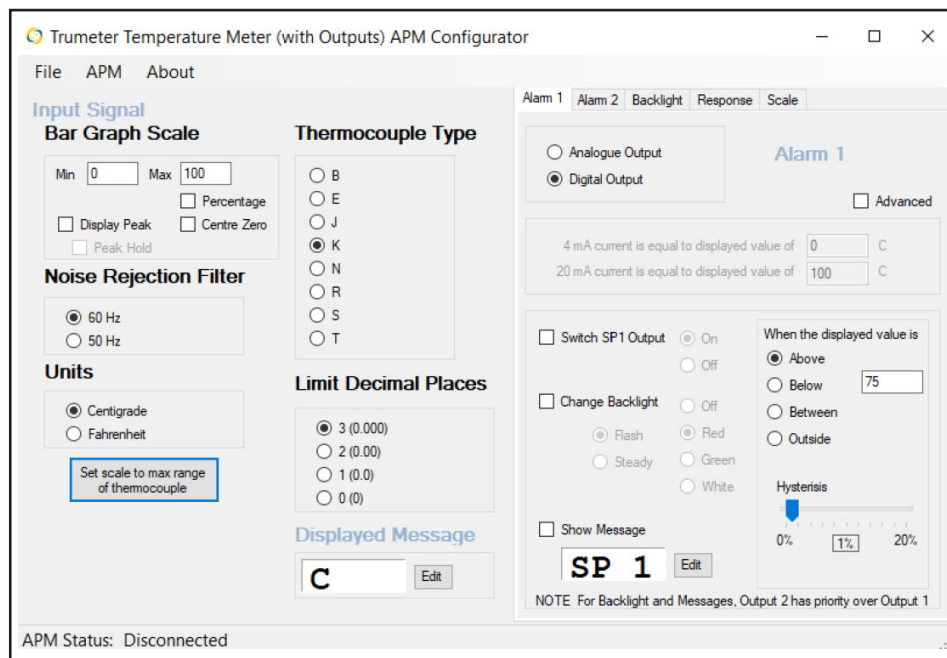
Wiring Diagrams

Thermocouple Input



Easy-To-Use Configuration Tool

Just plug into any USB port on your PC, run the free ADM Configuration application, and you're off.



Trumeter ADM100 Series Power Meter



For industrial power monitoring applications

NEW digital output delays

NEW 10 alarm set points

NEW 20-point non-linearization scaling

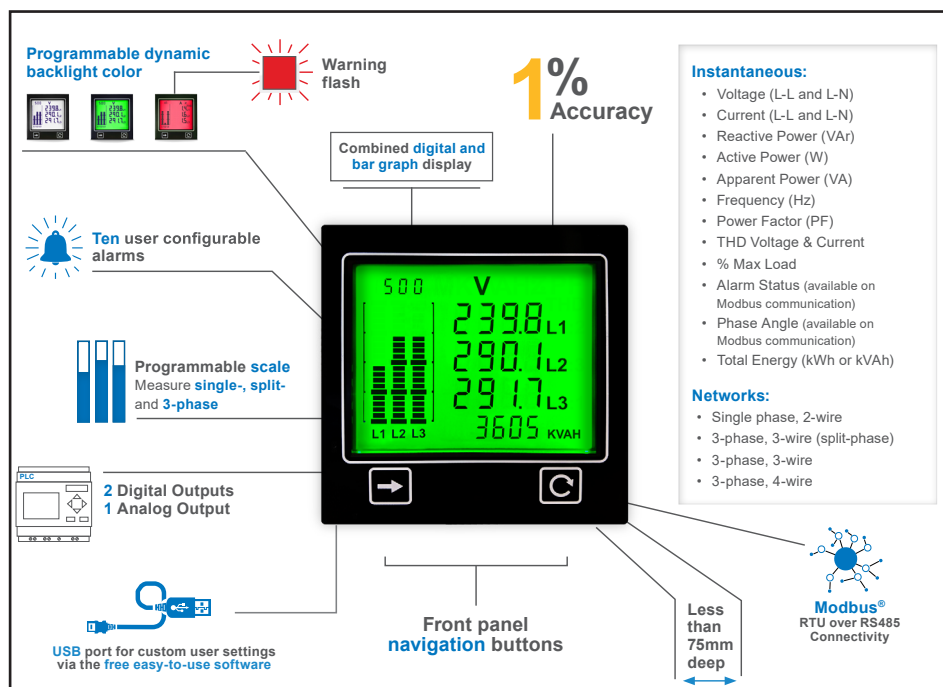
Trumeter ADM Series Power Meters feature an acclaimed easy-to-read display and a versatile set of inputs, making them ideal for single phase, split-phase and 3-phase power monitoring applications.

The programmable scale and custom annunciators allow users to tailor the meter to display critical parameters exactly as desired. In addition, dynamic backlighting, in conjunction with setpoints, alerts operators visually when a parameter is out of range. These meters also feature 2 digital outputs and 1 analog 4-20mA output which can be used to control other systems in the process. The ADM Power Meter is much more than just a display.

Trumeter's innovative technology brings a greater level of accuracy to the ADM range through input signal optimization. By using this technology, accuracy of 1% or better is now achieved, allowing for more precise measurement, display and control.



ADM100W-HPS



Overview

Voltage Input

- 0-600 VAC (L-L)
- 10-300 VAC (L-N)
- Accuracy: 1% (THD 5%) of full scale

Current Input

- 0-5A
- Accuracy: 1% (THD 5%) of full scale

Outputs

- Max voltage: 24VDC
- Max current: 15mA
- Analog: 4-20 mA
- 2 Digital Outputs

Power Supply

- Nominal input: 100-277 VAC

Free Configuration Utility Download

- PC utility via USB
- Basic configuration without PC (default setting is volts)

Display Options

- Red, Green, or White

Programmable

- Display range (Min and Max values)
- Custom annunciators
- User-selectable backlight color and intensity
- Two independent alarm set-points
- Two independent outputs
- 4-20 mA analog retransmission output

Key features

- For single-, split- and 3-phase applications.
- Measures Active (W), Reactive (var) and Apparent (VA) power.
- Displays electrical parameters on large, backlit LCD display.
- Features two independent opto-isolated digital outputs plus one analog 4-20mA output.
- Includes MODBUS® RTU communication as standard.
- Provides clear indication of electrical circuit performance.
- User-programmable scale and custom alarm messages display critical parameters and immediately alerts operators when a parameter is out of range.
- Programmable Current Transformer (CT) and Potential Transformer (PT) ratios.

Trumeter ADM100 Series Power Meter



Trumeter ADM Series Power Meter Selection Guide

Part Number	Price	Description	Drawing
ADM100W-HPS	\$158.00	Trumeter ADM100 standard graphical power meter, current or voltage input, 3in positive backlit LCD configurable to white, green, red, (2) discrete or current outputs, 100-277 VAC operating voltage, Modbus RTU.	PDF

Trumeter ADM Series Power Meter Specifications

Part Number	ADM100W-HPS
Modbus Communication	RTU
	Power Supply
Input	100-277 VAC
Power Consumption	2W
Supply Frequency	50-60 Hz
	Voltage Input
Range	0-600 VAC (L-L) 10-300 VAC (L-N)
Impedance	100KΩ
Accuracy	1%
Frequency	45-65 Hz
	Current Input
Range	0-5A (CT Only)
Impedance	15Ω
Accuracy	1%
	Display
User Configurable Backlight Colors	Red, Green, White
Positive/Negative LCD	Positive
Readout Text Character Size	3 Rows, 4 Digits, 0.29 in [7.5mm]
Message Text Character Size	6 Characters,
Bar Graph	20 segments per phase, 0.29 in [7.5mm]
	Environmental
Operating Temperature	14 to 122°F [-10 to 50°C]
Storage Temperature	-40 to 158°F [-40 to 70°C]
IP Rating (from the front)	IP65, NEMA type 4 and NEMA type 12
	Analog Outputs (1)
Analog Output	4-20 mA
Accuracy	0.5%
Resolution	0.02 mA
	Open Collector Outputs (2)
Max Voltage	24VDC
Max Current	15mA
	Programming
Programming Port	USB 2.0 (A-Male to Mini-B, sold separately – MOSAIC-CSU)
	Agency Approvals
Certification	UL file # E469787, CE
	Mechanical
Wire Connection Type	Screw terminals
Wire Gauge (Solid or Stranded)	18AWG to 12AWG (0.8 mm ² - 3.3 mm ²). Torque 0.5-0.6 N•m [4.43-5.31 lb•in]
Weight	6.35 oz (180g)
Mounting Clips Screw Torque	< 0.4 N•m [3.54 lb•in]

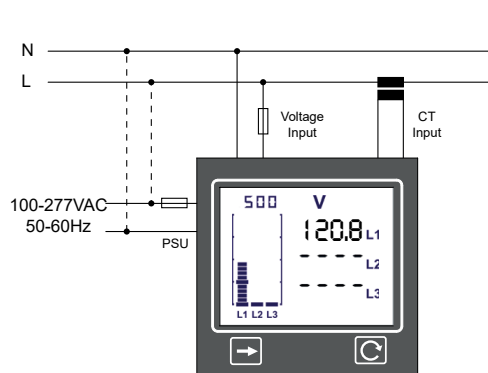
Trumeter ADM100 Series Power Meter



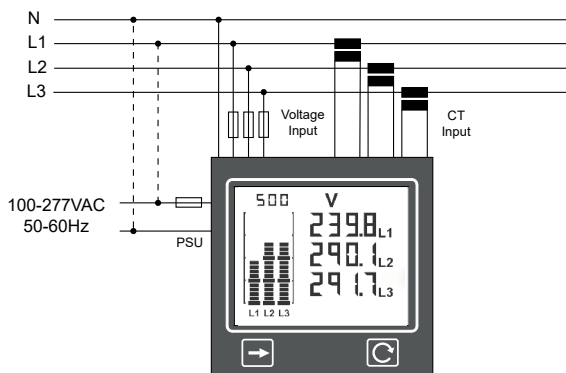
Wiring Diagrams

All fuses must be 0.5A / 250V Type F (fast acting fuse) with a breaking capacity of 35A or greater.

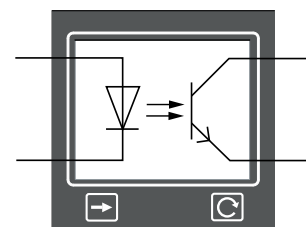
**Single phase 2-wire
(1P2W)**



**3 phase 3-wire
(3P3W)**

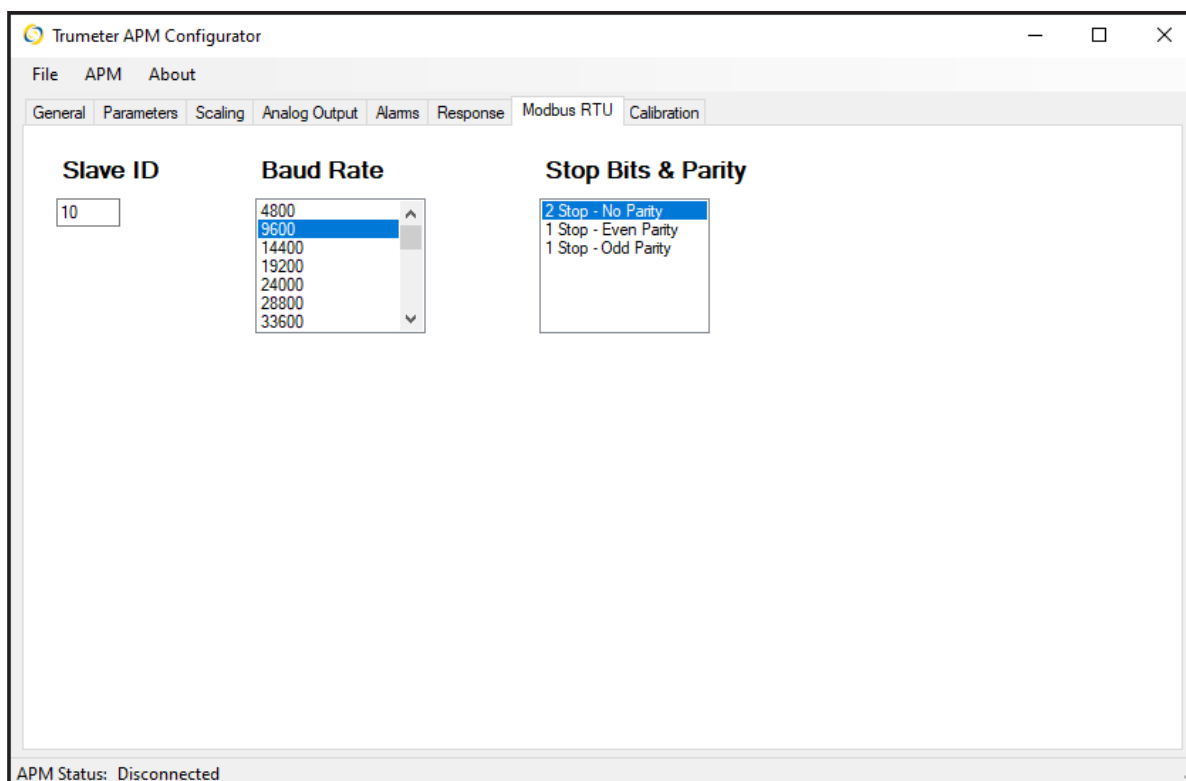


Control Outputs



Easy-To-Use Configuration Tool

Just plug into any USB port on your PC, run the free ADM Configuration application, and you're off.



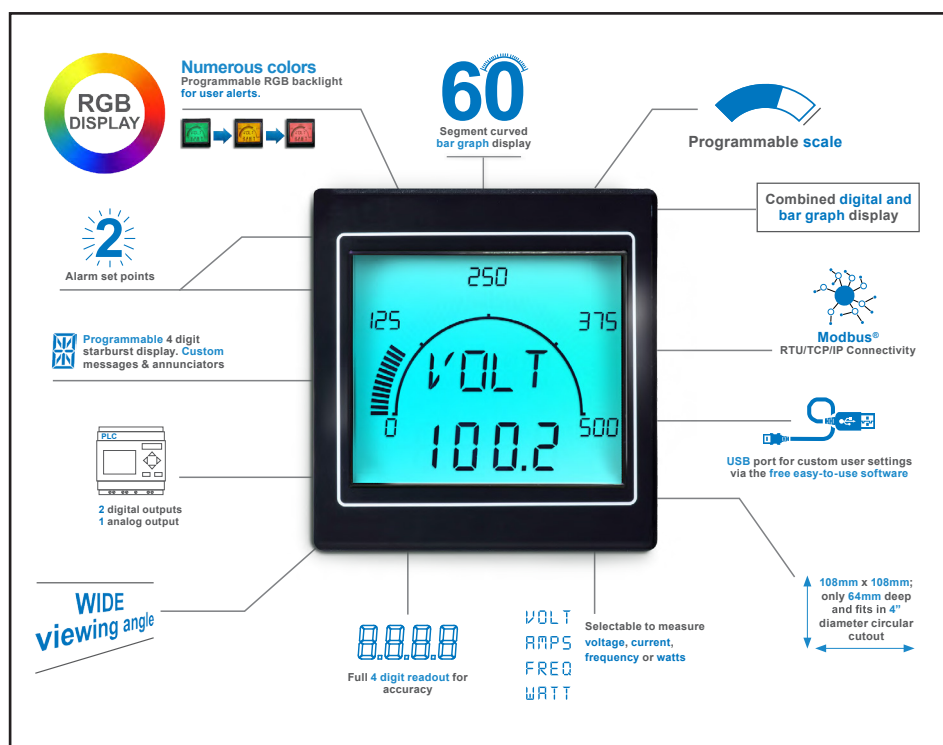
Trumeter ADM200 Series Process and Multimeters

For industrial process monitoring applications

Designed for a wide range of power and process monitoring applications, the ADM200 combines the instant visual representation of an analog meter with the speed and accuracy of a digital meter for instant recognition and precision measurement. The large 81.5mm x 66mm display features a two-line display, programmable scale, alarm set-points and color-changing, full color RGB backlight for instant alerts.

Trumeter ADM Series Multimeters feature an acclaimed easy-to-read display and a versatile set of inputs, making them ideal for a wide range of industrial applications.

The Trumeter ADM Series Multimeter is an all-in-one meter that can be configured to measure amps, voltage, frequency or power (Watts, VA, var & Power Factor). Used for voltage applications.



Key features

- 60-segment bar graph display
- Large 4-digit display
- Separate starburst display area for annunciators, custom messages and alarm information
- Dynamic backlight color
- User-adjustable backlight brightness and color (RGB)
- Wide viewing angle (horizontal and vertical)
- Custom annunciators
- Three-year warranty



ADM200-LN-CS

Negative LCD
Bright digits on black background

ADM200P-LP-CS

Positive LCD
Black digits on bright background



Overview

Voltage Input

- ADM200: 0 to 600V DC/AC
- ADM200P: 0–10 VDC
- ADM200P: 0–500mV DC (w/Shunt)

Current Input

- ADM200: 0–5A AC/DC

Frequency Input

- ADM200(P): 0 – 400 Hz

Outputs

- Max voltage: 34V
- Max current: 500mA
- Analog: 4 – 20mA or 0 – 10V
- 2 Digital Outputs

Power Supply

- Universal: 100–240V AC
- Low Voltage: 12–24V DC

Free Configuration Utility Download

- PC utility via USB
- Basic configuration without PC (default setting is volts)

Display Options

- Positive LCD (bright environments)
- Negative LCD (dark environments)

Programmable

- Display range (Min and Max values)
- Custom annunciators
- User-selectable backlight color and intensity
- Two independent alarm set-points
- Two independent outputs
- 4–20 mA analog retransmission output

Trumeter ADM200 Series Multimeters



Trumeter ADM Series Multimeters Specifications								
Part Number	ADM200-LN-CS	ADM200-HN-CS	ADM200-LP-CS	ADM200-HP-CS	ADM200-LN-CE	ADM200-HN-CE	ADM200-LP-CE	ADM200-HP-CE
Price	\$239.00	\$239.00	\$239.00	\$239.00	\$284.00	\$268.00	\$284.00	\$268.00
Drawing	PDF	PDF	PDF	PDF	PDF	PDF	PDF	PDF
Modbus Communication	RTU				RTU and TCP			
Power Measurement	Watts, VA, var, and Power Factor							
	Power Supply							
Input	Low Voltage (AC/DC): 12 – 24V; Universal (AC): 100 – 240V							
Power Consumption	5W max							
Supply Frequency	50 – 60Hz							
	Voltage Input							
Range	0 – 600V AC/DC (45 – 65Hz)							
Impedance	2MΩ							
Accuracy	0.5%							
	Current Input							
Range	Direct: 0 – 5AAC/DC (45 – 65Hz); w/shunt: 0 – 500mVDC							
Impedance	4M Ω							
Accuracy	0.5%							
	Frequency Input							
Range	0 – 400 Hz							
Accuracy	0.5%							
	Display							
User Configurable Backlight Colors	RGB							
Positive/Negative LCD	Negative	Positive			Negative		Positive	
Digital Readout Character Size	Four-digit display, 0.57 in [14.5 mm]							
Message Text Character Size	Four-digit display, 0.27 in [6.8 mm]							
Bar Graph Character Size	60 segments, 0.24 in [6mm]							
	Environmental							
Operating Temperature	14 to 140°F [-10 to 60°C]							
Storage Temperature	-40 to 158°F [-40 to 70°C]							
IP Rating (from the front)	IP65							
	Analog Outputs (1)							
Analog Output	4-20 mA or 0 – 10V							
Accuracy	0.5%							
Resolution	0.2mA / 0.013mV							
	Open Collector Outputs (2)							
Max Voltage	34VDC							
Max Current	500mA							
	Programming							
Programming Port	USB 2.0 (requires USB Type A to Type B cable, sold separately – USB-CBL-AB3, AB6, AB10 or AB15)							
	Agency Approvals							
Certification	UL, cUL, CE							
	Mechanical							
Wire Connection Type	Screw terminals							
Wire Gauge (Solid or Stranded)	18AWG to 12AWG (0.8 mm ² - 3.3 mm ²). Torque 0.5-0.6 N•m [4.43-5.31 lb•in]							
Weight	6.35 oz (180g)							
Mounting Clips Screw Torque	< 0.4 N•m [3.54 lb•in]							

Trumeter ADM200 Series Process Meters



Trumeter ADM Series Process Meters Specifications								
Part Number	ADM200P-LN-CS	ADM200P-HN-CS	ADM200P-LP-CS	ADM200P-HP-CS	ADM200P-LN-CE	ADM200P-HN-CE	ADM200P-LP-CE	ADM200P-HP-CE
Price	\$239.00	\$239.00	\$239.00	\$239.00	\$284.00	\$268.00	\$284.00	\$268.00
Drawing	PDF	PDF	PDF	PDF	PDF	PDF	PDF	PDF
Modbus Communication	RTU				RTU and TCP			
	Power Supply							
Input	Low Voltage (AC/DC): 12 – 24V; Universal (AC): 100 – 240V							
Power Consumption	5W max							
Supply Frequency	50 – 60Hz							
	Voltage Input							
Range	V1: 0 – 10 VDC; V2: 0 – 5A DC							
Impedance	2MΩ							
Accuracy	DC and Frequency: 0.1%; AC: 0.5%							
	Current Input							
Range	Direct: 0-50 mA DC (Terminals D+V and -V) W/shunt: 0-500 mV DC (Terminals I+V and -V)							
Impedance	15Ω							
Accuracy	0.1%							
	Frequency Input							
Range	0 – 400 Hz							
Accuracy	0.1%							
	Display							
User Configurable Backlight Colors	RGB							
Positive/Negative LCD	Negative		Positive		Negative		Positive	
Digital Readout Character Size	Four-digit display, 0.57 in [14.5 mm]							
Message Text Character Size	Four-digit display, 0.27 in [6.8 mm]							
Bar Graph Character Size	60 segments, 0.24 in [6mm]							
	Environmental							
Operating Temperature	14 to 140°F [-10 to 60°C]							
Storage Temperature	-40 to 158°F [-40 to 70°C]							
IP Rating (from the front)	IP65							
	Analog Outputs (1)							
Analog Output	4-20 mA or 0 – 10V							
Accuracy	0.5%							
Resolution	0.2mA / 0.013mV							
	Open Collector Outputs (2)							
Max Voltage	34VDC							
Max Current	500mA							
	Programming							
Programming Port	USB 2.0 (requires USB Type A to Type B cable, sold separately – USB-CBL-AB3 , AB6 , AB10 or AB15)							
	Agency Approvals							
Certification	UL, cUL, CE							
	Mechanical							
Wire Connection Type	Screw terminals							
Wire Gauge (Solid or Stranded)	18AWG to 12AWG (0.8 mm ² - 3.3 mm ²). Torque 0.5-0.6 N•m [4.43-5.31 lb•in]							
Weight	6.35 oz (180g)							
Mounting Clips Screw Torque	< 0.4 N•m [3.54 lb•in]							

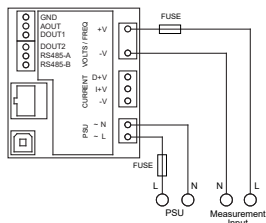
Trumeter ADM200 Series Multimeters



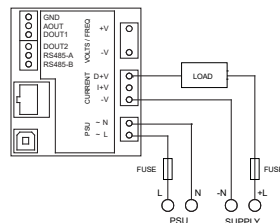
Wiring Diagrams (ADM-200-H)

All fuses must be 0.5A / 250V Type F (fast acting fuse) with a breaking capacity of 35A or greater.

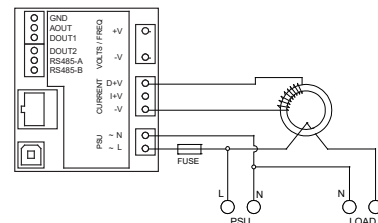
VOLT / FREQUENCY MEASUREMENT



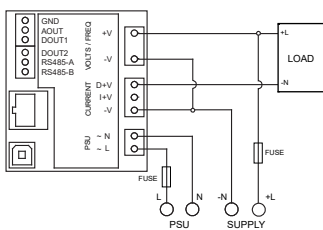
AC/DC CURRENT MEASUREMENT SERIES LOAD (MAX 5A)



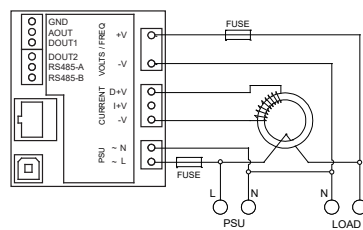
AC CURRENT MEASUREMENT USING CT (5A MAX)



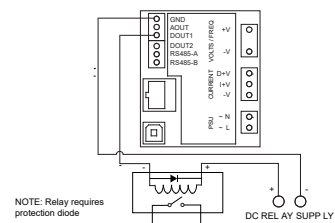
AC/DC POWER MEASUREMENT SERIES LOAD (5A MAXIMUM)



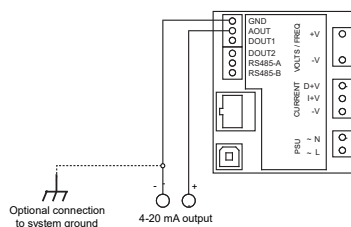
AC POWER MEASUREMENT WITH A CT



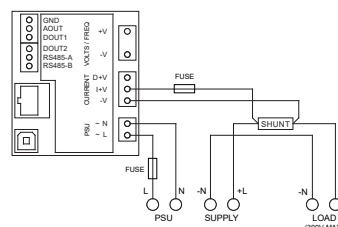
RELAY OUTPUT



4-20mA ANALOG OUTPUT

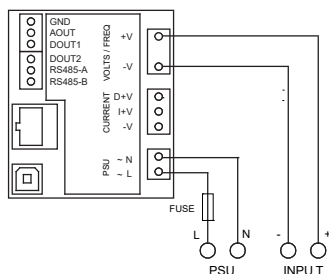


AC/DC CURRENT MEASUREMENT USING SHUNT (MAX 500mV)

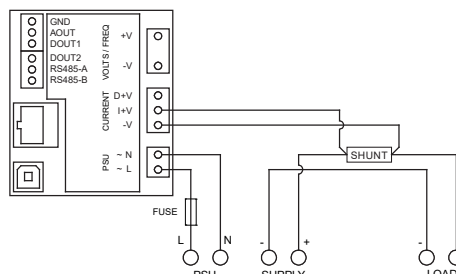


Wiring Diagrams (ADM-200P-H)

DC VOLTAGE MEASUREMENT | AC FREQUENCY MEASUREMENT

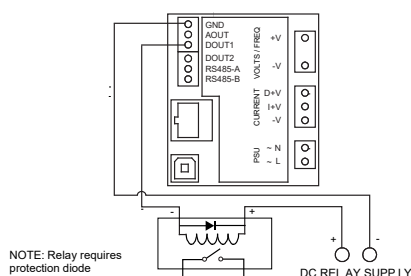


DC CURRENT MEASUREMENT USING SHUNT (500mV MAX)

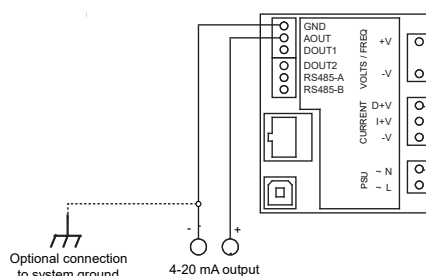


All fuses must be 0.5A / 250V Type F (fast acting fuse) with a breaking capacity of 35A or greater.

RELAY OUTPUT (ACTIVATED BY DOUT1)



4-20mA ANALOG OUTPUT

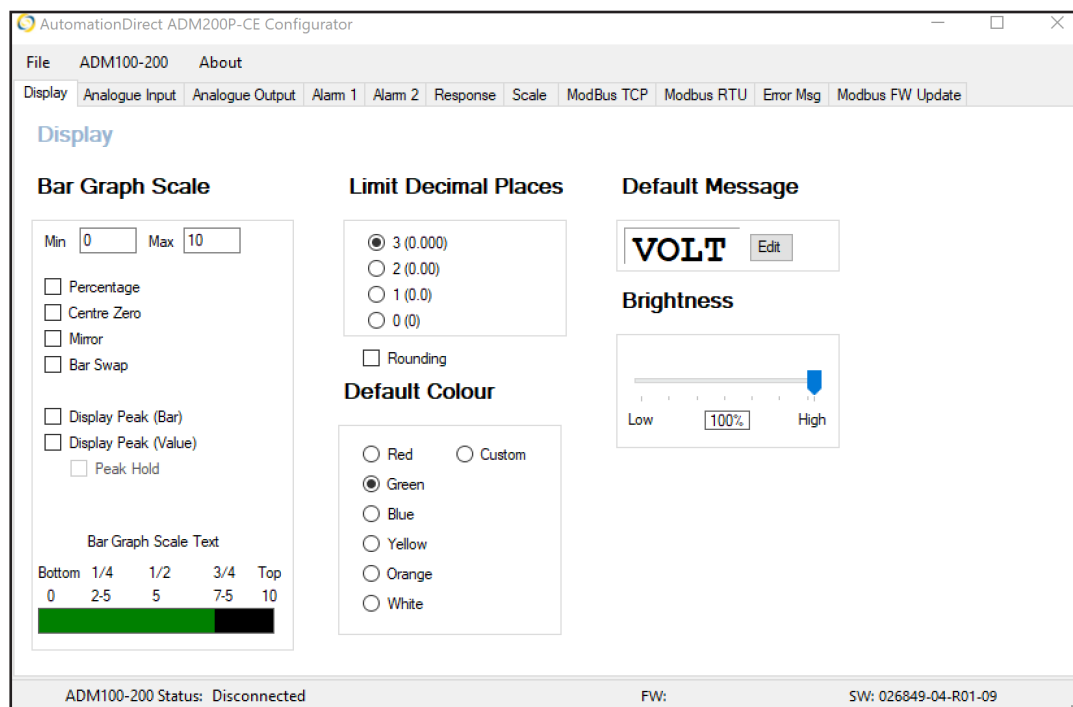


Trumeter ADM200 Series Multimeters



Easy-To-Use Configuration Tool

Just plug into any USB port on your PC, run the free ADM Configuration application, and you're off.



Trumeter 49 Series Electromechanical Counter

**P2-4906**

The Trumeter 49 Series of economically priced 6-figure pushbutton reset electromechanical counters is designed for use where limited space is a factor and when reliability is critical. Rugged operating mechanisms require no lubrication or maintenance. Compact size and minimum space requirements make the 49 Series ideally suited for use in control panels, business machines, and test equipment.

Features

- Compact
- No maintenance
- Quick reset
- Multiple voltage options

Applications

- Test Equipment
- Control Panels
- Business Machines
- Medical devices

Trumeter 49 Series Electromechanical Counter Selection Guide

Part Number	Price	Description	Drawing
P2-4906	\$63.00	Electromechanical counter, 115VAC, 6 figure, panel mount	PDF
P8-4906	\$65.00	Electromechanical counter, 24VDC, 6 figure, panel mount	PDF
P9-4906	\$65.00	Electromechanical counter, 12VDC, 6 figure, panel mount	PDF

Trumeter 49 Series Electromechanical Counter Specifications

Part Number	P2-4906	P8-4906	P9-4906
Figures	6 figures, white on black, 0.16 in [4mm] high		
Reset	Pushbutton		
Speed	600 counts/minute (minimum 50ms on, 50ms off)		
Voltage	115VAC (+10% to -15%)	24VDC (+10% to -15%)	12VDC
Power	AC: 115VAC, 3.5 VA; DC: 24/12 VDC 3 watts		
Mounting	Panel		
Termination	Two #22 AWG 105°C wire leads, 10in [254mm] long		
Operating Life	Beyond 100 million counts		
Temperature Range	-15°F to +140°F [-26°C to +60°C]		
Approvals	UL file E36690, UL Recognized, CE Compliant		
Weight	5 oz. [142g]		

Trumeter 722 Series Electromechanical Hour Meters

**722-0003**

The 722 Series of electromechanical hour meters provides AC hour meters with an operating range of 90-264VAC 50/60 Hz, eliminating the need for two separate meters (one for 115VAC and one for 230VAC). Housing options include 2-Hole Rectangular, Flush-Rectangular, Flush-Round, and 3-Hole Round. The quartz time base ensures accurate long-term time keeping, and the totally sealed case protects against the environment and provides years of reliable service. All models are NEMA 4X, 12 rated when mounted with optional gasket.

Features

- Operating voltage 90-264VAC, 50/60Hz
- Totally sealed
- UL/cUL recognized, CE & RoHS Compliant
- 6-figure display (99999.9)
- Quartz accuracy
- Available options:
 - Gasket kit (for NEMA 4X, 12 rating)

Applications

- Medical equipment
- Control panels
- Office equipment
- Test equipment
- Generators

Trumeter 722 Series Electromechanical Hour Meters Selection Guide

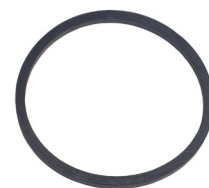
Part Number	Price	Description	Drawing
722-0001	\$24.50	Electromechanical hour meter, 2-hole rectangular, 90-264VAC 50/60Hz, 0.25 in [6.3mm] spade terminals, hours & tenths of hours	PDF
722-0002	\$24.50	Electromechanical hour meter, flush rectangular, 90-264VAC 50/60Hz, 0.25 in [6.3mm] spade terminals, hours & tenths of hours	PDF
722-0003	\$24.50	Electromechanical hour meter, flush round, 90-264VAC 50/60Hz, 0.25 in [6.3mm] spade terminals, hours & tenths of hours	PDF
722-0004	\$24.50	Electromechanical hour meter, 3-hole round, 90-264VAC 50/60Hz, 0.25 in [6.3mm] spade terminals, hours & tenths of hours	PDF

Trumeter 722 Series Electromechanical Hour Meters Specifications

Part Number	722-0001	722-0002	722-0003	722-0004
Figures	6 digits (99999.9), 0.14 in [3.6 mm] high Hours and indicator: white on black – Decimal: black on white			
Display	Hours and tenths of hours			
Reset	None			
Voltage	90-264 VAC			
Frequency	50/60 Hz			
Power	1W max			
Mounting	2-hole rectangular	Flush rectangular	Flush round	3-hole round
Terminations	0.25 in [6.3 mm] spade terminals			
Accuracy	± 0.02% over entire range			
Case	Black polymer			
Lens	Polymer			
Environmental Protection	Totally sealed			
Front Panel	NEMA 4X, 12 rated with optional gasket			
Temperature range	-40°F to +185°F [-40°C to + 85°C]			
Humidity	95% (SAE J1378)			
Vibration	10-80 Hz, 20g max. (SAE J1378)			
Shock	55g @ 9 - 13msec (SAE J1378)			
Approvals	UL file E123666, UL/cUL Recognized, CE & RoHS Compliant, SAE & NEMA 4X, 12 Compliant			
Weight	2 oz. [57g]			

Mounting Gaskets for Trumeter 722 Series Electromechanical Hour Meters

Part Number	Price	Description	Drawing
5003-008	\$2.25	NEMA 4X, 12 Gasket for Models 722-0003	PDF
5003-009	\$2.25	NEMA 4X, 12 Gasket for Models 722-0002	PDF
5003-010	\$2.25	NEMA 4X, 12 Gasket for Models 722-0001	PDF
5003-011	\$2.25	NEMA 4X, 12 Gasket for Models 722-0004	PDF

**5003-008**

Trumeter 732 Series Electromechanical Hour Meters

**732-0001**

The 732 Series of electromechanical hour meters provides a DC hour meter with an operating range of 10-80VDC. Models are protected for 2 times battery voltage and/or reverse polarity. Models are available in 3-Hole Round, Flush-Rectangular, Flush-Round and 2-Hole Rectangular housings. The quartz time base ensures accurate long-term time keeping, and the totally sealed case protects against the environment for years of reliable service. These units are NEMA 4X, 12 rated when mounted with the optional gasket.

Features

- Operating voltage 10-80VDC
- Totally sealed
- UL/cUL Recognized, CE & RoHS Compliant
- 6 figure, 99999.9
- Quartz accuracy
- Options include gasket kit (for NEMA 4X, 12 rating)

Applications

- Material handling
- Farming equipment
- Outdoor power equipment
- Construction equipment
- Utility vehicles

Trumeter 732 Series Electromechanical Hour Meters Selection Guide

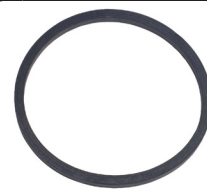
Part Number	Price	Description	Drawing
732-0001	\$24.00	Electromechanical hour meter, 3-hole round, 10-80VDC, 0.25 in [6.3mm] spade terminals, hours & tenths of hours	PDF
732-0002	\$24.00	Electromechanical hour meter, flush rectangular, 10-80VDC, 0.25 in [6.3mm] spade terminals, hours & tenths of hours	PDF
732-0003	\$24.00	Electromechanical hour meter, flush round, 10-80VDC, 0.25 in [6.3mm] spade terminals, hours & tenths of hours	PDF
732-0004	\$24.00	Electromechanical hour meter, 2-hole rectangular, 10-80VDC, 0.25 in [6.3mm] spade terminals, hours & tenths of hours	PDF

Trumeter 732 Series Electromechanical Hour Meters Specifications

Part Number	732-0001	732-0002	732-0003	732-0004
Figures	6 digits (99999.9), 0.14 in [3.6 mm] high. Hours and indicator: white on black. Decimal: black on white.			
Display	Hours and tenths of hours			
Reset	None			
Voltage	10-80 VDC			
Power	1W max			
Mounting	3-hole round	Flush rectangular	Flush round	2-hole rectangular
Terminations	0.25 in [6.3 mm] spade terminals			
Accuracy	± 0.02% over entire range			
Bezel	Stirrup and cup mount have metallic bezels			
Case	Black polymer			
Lens	Stirrup and cup : glass – All other models: polymer			
Transient Protection	± 6 times normal for 300msec			
Overvoltage & Reverse Polarity	Protected for 2 times battery voltage and/or reverse polarity			
Environmental Protection	Totally sealed			
Front Panel	NEMA 4X, 12 rated with optional gasket			
Temperature Range	-40°F to +185°F [-40°C to + 85°C]			
Humidity	95% (SAE J1378)			
Vibration	10-80 Hz. 20g max. (SAE J1378)			
Shock	55g @ 9 - 13msec (SAE J1378)			
Approvals	UL file E123666, UL/cUL Recognized, CE, SAE, & RoHS Compliant. All models are NEMA 4X, 12 Compliant except the Cup and Stirrup mount			
Weight	2 oz. [57g]			

Mounting Gaskets for Trumeter 732 Series Electromechanical Hour Meters

Part Number	Price	Description	Drawing
5003-008	\$2.25	NEMA 4X, 12 Gasket for Models 732-0003	PDF
5003-009	\$2.25	NEMA 4X, 12 Gasket for Models 732-0002	PDF
5003-010	\$2.25	NEMA 4X, 12 Gasket for Models 732-0004	PDF
5003-011	\$2.25	NEMA 4X, 12 Gasket for Models 732-0001	PDF

**5003-008**

Trumeter 3400 Series LCD Counter/Preset Counter



The 3400 Series LCD Counter/Preset Counter provides a large display with 0.28 in [7mm] high characters and is offered in a range of industry-standard housings.

These counter count and display the number of pulses that appear at the input terminal at a rate of 40 pulses per second (Hz). The input interface handles AC or DC inputs. These Counters are available in several different housings.

A wide operating voltage range (10-300VDC and 20-300VAC) adds versatility. All models are NEMA 4/4X, 12 & IP66 rated when used with the optional gasket and have a polarized lens which assures high visibility in outdoor environments.

Features

- Totally sealed from moisture and dirt
- AC and DC voltage input in the same unit
- Compact depth
- Fits in existing panel openings
- Always-on display
- Self-powered (battery life 10+ years)
- Options include:
 - Optional remote reset
 - Multiple housing options

Applications

- Medical devices
- Test equipment
- Control panels
- Production equipment
- Office equipment
- Secondary equipment

Trumeter 3400 Series LCD Counter/Preset Counter Selection Guide

Part Number	Price	Description	Drawing
3400-0000	\$23.50	AC/DC counter, 2-hole case, 0.25 in spade terminal, non-reset	PDF
3400-0010	\$24.00	AC/DC counter, 2-hole case, 0.25 in spade terminal, remote reset	PDF
3400-2000	\$23.50	AC/DC counter, flush rectangular case, 0.25 in spade terminals, non-reset	PDF
3400-2010	\$24.00	AC/DC counter, flush rectangular case, 0.25 in spade terminals, remote reset	PDF

Trumeter 3400 Series LCD Counter/Preset Counter Specifications

Part Number	3400-0000	3400-0010	3400-2000	3400-2010
Figures	8 digit (99999999), 0.28 in [7mm] figures, black on light background			
Display	LCD			
Reset	Non-reset	Remote	Non-reset	Remote
Voltage	10-300 VDC and 20-300 VAC - 50/60Hz, <2mA			
Power	Self-powered - battery life 10+ years (battery life reduced to 5 years for temps above 100°F [37.8°C])			
Mounting	2-hole rectangular	2-hole rectangular	Flush rectangular	Flush rectangular
Terminations	0.25 in [6.4 mm] spade terminals			
Accuracy	± 0.02% over specified temperature range			
Case	Black polymer			
Lens	Stirrup and cup : glass – All other models: polymer			
Transient Protection	± 6 times normal for 300msec			
Overvoltage & Reverse Polarity	Protected for 2 times battery voltage and/or reverse polarity			
Environmental Protection	Totally sealed			
EMC Compliance	EN61326			
Front Panel	NEMA 4/4X, 12 and IP66 compliant from the front when properly mounted using the optional gasket			
Operating Temperature Range	-10°C to +60°C [-14°F to +140°F]			
Storage Temperature Range	-20°C to +70°C [-4°F to +158°F]			
Humidity	95% (SAE J1378)			
Shock	44 to 55g per SAE J1378			
Dielectric	1000VAC 50/60 Hz for 1 minute			
Environmental Compliance	To European WEEE and RoHS Directives			
Approvals	UL & cUL recognized (file # ELIY2.E36690), CE, SAE, NEMA 4/4X/IP66 compliant (not including snap-in models)			
Weight	1 oz [28g]			

Mounting Gaskets for Trumeter 3400 Series LCD Counter/Preset Counters

Part Number	Price	Description	Drawing
5003-009	\$2.25	NEMA 4X gasket flush rectangular and SAE round mount	PDF
5003-010	\$2.25	NEMA 4X gasket two hole mount	PDF



5003-009

Trumeter 3410 Series LCD Hour Meter



The 3410 Series LCD Hour Meters provide a large display with 0.28 in [7mm] high characters and is available in several different housings. A wide operating voltage range (10-300VDC and 20-300VAC) makes the 3410 Series versatile for indoor and outdoor applications. All models are NEMA 4/4X, 12 & IP66 rated when used with the optional gasket and have a polarized lens which assures high visibility in outdoor environments.

Features

- Totally sealed from moisture and dirt
- AC and DC voltage input in the same unit
- Compact depth
- Fits in existing panel openings
- Always-on display
- Self-powered (battery life 10+ years)
- Options include:
 - Optional remote reset
 - Multiple housing options

Applications

- Medical devices
- Generators
- Control panels
- Production equipment
- Garden tractors
- Marine equipment

Reset Instructions

- 1) Remove AC/DC input from Terminals 1 and 2
- 2) Close dry contact reset on Terminals 3 and 4. Reset will perform within 400mS.
- 3) Timing/Counting can resume 200mS after reset is released.

Trumeter 3410 Series LCD Hour Meter Selection Guide

Part Number	Price	Description	Drawing
3410-0000	\$24.50	AC/DC hour meter, 2-hole case, 0.25 in spade terminal, non-reset	PDF
3410-0010	\$25.50	AC/DC hour meter, 2-hole case, 0.25 in spade terminal, remote reset	PDF
3410-2000	\$24.50	AC/DC hour meter, flush rectangular case, 0.25 in spade terminals, non-reset	PDF
3410-2010	\$25.50	AC/DC hour meter, flush rectangular case, 0.25 in spade terminals, remote reset	PDF

Trumeter 3410 Series LCD Hour Meter Specifications

Part Number	3410-0000	3410-0010	3410-2000	3410-2010
Figures	8 digit (999999.9 hours and tenths); 0.28 in [7mm] figures, black on light background			
Run Indicator	Blinking decimal point			
Reset	Non-reset	Remote (dry contact between terminals 3 and 4)	Non-reset	Remote (dry contact between terminals 3 and 4)
Inputs	10-300VDC and 20-300VAC, 50/60 Hz, <2mA VIH 20VAC or 10VDC minimum – VIL 3VAC or 3VDC maximum			
Power	Self-powered. Battery life 10+ years (battery life reduced to 5 years for temps above 100°F [37.8°C]).			
Mounting	2-hole rectangular	2-hole rectangular	Flush rectangular	Flush rectangular
Terminations	0.25 in [6.4 mm] spade terminals			
Accuracy	± 0.1% @ room temperature; ± 0.2% over the specified temperature range			
Transient Protection	± 6 times normal for 300msec			
Overvoltage & Reverse Polarity	Protected for 2 times battery voltage and/or reverse polarity			
Environmental Protection	Totally sealed			
EMC Compliance	EN61326			
Enclosure	Totally sealed from moisture and dirt. NEMA 4/4X, 12 & IP66 compliant from the front when properly mounted using the optional gasket.			
Operating Temperature Range	-10°C to +60°C [14°F to +140°F]			
Storage Temperature Range	-20°C to +70°C [-4°F to +158°F]			
Humidity	95% (SAE J1378)			
Vibration	20g @ 10 to 80 Hz per SAE J1378			
Shock	44 to 55g per SAE J1378			
Dielectric	1000VAC 50/60 Hz for 1 minute			
Environmental Compliance	To European WEEE and RoHS Directives			
EMC Compliance	EN61326			
Protection Against	Alternator load dump: 150V EMI (Electromagnetic Interface): +400V @ 500Hz inductive switching and reverse polarity			
Approvals	UL & cUL recognized (file # ELIY2.E36690), CE, SAE, NEMA 4/4X/IP66 compliant			
Weight	1 oz [28g]			

Notes

1. When interfacing with a solid state relay or AC sensor, the leakage current needs to be considered.
2. Operation beyond the Absolute Voltage Range or the Absolute Maximum Voltage may result in damage to the unit.

Mounting Gaskets for Trumeter 3410 Series LCD Counter/Preset Counters

Part Number	Price	Description	Drawing
5003-009	\$2.25	NEMA 4X gasket flush rectangular and SAE round mount	PDF
5003-010	\$2.25	NEMA 4X gasket two hole mount	PDF



5003-009

Trumeter 4916 Series

6-Digit Non-Reset Counter

**RV2-4916**

The 4916 Series incorporates the latest manufacturing technology together with basic design to achieve high performance over a wide temperature range with low power consumption. These counters can be mounted by two front flange styles, base mount or behind the panel (front mount). The 4916 has UL approvals and can operate over a wide voltage range of DC or AC power.

The compact design and various mounting styles make it the ideal counter for almost all counting applications. This electro-mechanical counter will not lose its count during power failures or from electrical noise.

Features

- Low cost
- Patented high-performance mechanism
- UL and cUL approved
- Rugged plastic package
- Wide range of voltages available
- Long life

Applications

- Mail equipment
- Photo machines
- Vending machines
- Gaming machines
- Elevators
- Copy machines
- Ticket machines

Trumeter 4916 Series 6-Digit Non-Reset Counter Selection Guide

Part Number	Price	Description	Drawing
RV2-4916	\$27.50	6 digit non-reset counter, 120VAC, 6 figures, front & V-base mount	PDF
RV8-4916D	\$26.00	6 digit non-reset counter, 24VDC, 6 figures, front & V-base mount	PDF
RV9-4916D	\$26.00	6 digit non-reset counter, 12VDC, 6 figures, front & V-base mount	PDF

Trumeter 4916 Series 6-Digit Non-Reset Counter Specifications

Part Number	RV2-4916	RV8-4916D	RV9-4916D
Figures	6 figures, white on black, 0.16 in [4mm] high		
Reset	None		
Speed	10CPS, standard. 50/50 ratio on/off.		
Maximum ON Time	Infinite		
Voltage	120VAC	24VDC	12VDC
Power	AC: 115VAC, 3.5 VA; DC: 24/12 VDC, 3 watts		
Mounting	Base/panel (removable base)		
Termination	UL/cUL wire leads, 11in [279.4 mm] long, standard		
Temperature Range	Storage: 14°F to 122°F [-10°C to +50°C] Operating: 23°F to 104°F [-5°C to +40°C]		
Approvals	UL and cUL (E36690)		
Weight	4 oz [113g]		

Trumeter 6300 LCD Counter



6300-0000-0000

The Trumeter 6300 LCD Counter offers a range of features such as a high-contrast 8-digit LCD display with 0.32 in [8mm] digits. Dry contact, low voltage DC, and high voltage DC and AC inputs are available on the back of the unit.

The 6300 is designed with a rugged plastic housing that is NEMA 4/4X rated when properly installed using the optional gasket. In addition, the unit is compliant with CE's EMC standards to EN61326:2001 for industrial applications, recognized by UL for U.S. and Canadian safety standards, and is compliant with European RoHS and WEEE standards.

Features

- Dual range
- Reflective LCD Display with 8 large (8mm) digits
- Choice of I/O complement that includes:
 - Switch Input (no voltage)
 - Low DC Voltage (3-30VDC) <2mA
 - High Voltage (20-300VAC or 10-300VDC) <2mA
- Internal 10+ year battery
- NEMA 4/4X, 12, and IP66 rated
- EMC Compliant to EN61326:2001 for industrial environments
- CE compliant, UL and cUL recognized
- European WEEE & RoHS Compliant

Trumeter 6300 LCD Counter Selection Guide

Part Number	Price	Description	Drawing
6300-0000-0000	\$37.00	Dual-range LCD counter, 40/500 Hz, dry contact input, remote reset	PDF
6300-1000-0000	\$37.00	Dual-range LCD counter, 40/500 Hz, 3-30 VDC input, remote reset	PDF
6301-2000-0000	\$37.00	Dual-range LCD counter, 40/500 Hz, 10-300/20-300 VDC/VAC input, remote reset	PDF

Trumeter 6300 LCD Counter Specifications

Part Number	6300-0000-0000	6300-1000-0000	6301-2000-0000
Display	8 LCD digits 0.32 in [8mm] high		
Reset	Remote		
Speed ³	Low speed: 0-40 counts per second (min. 12.5 ms on, 12.5 ms off) – High speed: 0-500 counts per second (min. 1.0 ms on, 1.0 ms off)		
Input	Dry contact input	3-30 VDC input	10-300/20-300 VDC/VAC input
Inputs	Switch (no voltage) DC voltage: Absolute Voltage Range -0.5 VDC min to 30.0 VDC max; VIH 3.0 VDC max; VIL 1.0 VDC min High voltage AC/DC: Absolute Maximum Voltage 300 VAC/VDC; VIH 10VDC/20VAC max; VIL 3VDC/3VAC min		
Power	Internally powered by lithium battery. Battery life 10 years (reduced to 5 years for temps above 100°F [37.8°C])		
Mounting	Panel with clip (1/32 DIN panel cutout)		
Terminations	Terminal block		
Weight	2 oz [57g]		
Storage and Operating Temp	-20°C to +60°C [-4°F to +140°F]		
Humidity	0 to 95% RH, non-condensing		
Vibration	Operating: 10 to 55 Hz, 0.01 in [0.25 mm] double amplitude – Non-operating: 10 to 55 Hz, 0.03 in [0.75 mm] double amplitude		
Shock	Operating: 10G; Non-operating: 30G		
Dielectric	1000VAC 50/60 Hz for 1 minute		
Accuracy	100% provided signal meets stated parameters		
EMC Compliance:	EN61326:1997 with A1:1998 and A3:2001 for industrial environments		
Enclosure	NEMA 4/4X, 12 & IP66 compliant from the front when properly mounted using the optional gasket.		
Approvals	CE compliant, UL and cUL recognized, UL file #E36690		
Environmental Compliance	Compliant to European WEEE and RoHS		

Notes

1. When interfacing with a solid state relay or AC sensor, the leakage current needs to be considered.
2. Operation beyond the Absolute Voltage Range or the Absolute Maximum Voltage may result in damage to the unit.
3. Once the unit is wired for low speed or high-speed count, then that unit is set for life – it cannot be changed.

Mounting Gasket for Trumeter 6300 LCD Counter

Part Number	Price	Description	Drawing
5003-013	\$2.25	Gasket	PDF



5003-013

Trumeter 6300 LCD Counter - Operations



Counter Operation

Any of four different counting methods may be specified in each unit. These counting methods are factory set.

Dual Range: In the Dual Range Mode, the counter waits for a pulse on either Input A or Input B. The first input to have a pulse is recognized and its pulses are counted. The other input is ignored until the counter is reset. The rated speed for one of the inputs is 40 Hz and for the other input it is 500 Hz. This mode is best for single up-counter operation.

- Units are dispatched in a factory reset state.
- Once the unit is wired for low speed or high-speed count, then that unit is set for life – it cannot be changed.

I/O Functions

The I/O functions can be mixed and matched to maximize the functionality of the counter. There are three types of inputs that the counter can accept. The interfaces for each are factory set. The inputs can be:

- Switch – open circuit or switch closure
- Low Voltage DC – Low input is less than 1VDC and High Input is 3 – 30VDC.
- High Voltage DC or AC – Low is less than 3VDC or 3VAC. A High Input is either 10 – 300VDC or 20-300VAC.

For the Switch and Low Voltage DC Counters, there are six screw terminals for all of the I/O. For the High Voltage Counters, there are four screw terminals for the I/O. The combinations of the I/O and power supply are factory set.

Pulse Inputs: The pulse inputs are those inputs that are counted.

Remote Reset: When the remote reset is at a high level, the counter will reset.

Resets

A reset returns the display to zero.

Remote Reset: A model with Remote reset has a dedicated terminal for performing the reset function. The unit resets when the remote reset signal is at a high level. When the reset signal is at a low level, accumulating counts can occur.

Trumeter 6320 LCD Hour Meter

**6320-2000-0000**

The 6320 Series of electronic hour meters features self-powered electronic LCD counters. These meters utilize a high-contrast 8-digit LCD with 0.32 inch [8mm] digits and seven icons. Dry Contact, Low Voltage DC, and High Voltage DC and AC Inputs are available on the rear panel.

The Model 63 family is designed with a rugged plastic housing that is NEMA 4/4X rated when properly installed using the optional gasket. In addition, the unit is compliant with CE's EMC standards to EN61326:2001 for industrial applications, recognized by UL for U.S. and Canadian safety standards, and it is compliant to European RoHS and WEEE standards.

Features

- Reflective LCD Display with 8 large (8mm) digits
- Choice of I/O:
 - Switch Input (no voltage)
 - Low DC Voltage (3-30VDC) <2mA
 - High Voltage (20-300 VAC or 10-300 VDC) <2mA
- Control Inputs
 - External Electronic Reset
- 1/32 DIN panel cutout
- NEMA 4/4X, 12, and IP66 rated
- EMC Compliant to EN61326:2001 for industrial environments
- CE compliant, UL and cUL recognized European WEEE & RoHS Compliant

Trumeter 6320 LCD Hour Meter Selection Guide

Part Number	Price	Description	Drawing
<u>6320-0000-0000</u>	\$38.50	LCD hour meter, dry contact input, remote reset	<u>PDF</u>
<u>6320-1000-0000</u>	\$38.50	LCD hour meter, 3-30 VDC input, remote reset	<u>PDF</u>
<u>6320-2000-0000</u>	\$38.50	LCD hour meter, 20-300 VAC / 10-300 VDC input, remote reset	<u>PDF</u>

Trumeter 6320 LCD Hour Meter Specifications

Part Number	<u>6320-0000-0000</u>	<u>6320-1000-0000</u>	<u>6320-2000-0000</u>
Display	8 LCD digits 0.32 in [8mm] high		
Reset	Remote		
Input	Dry contact input	3-30 VDC input	10-300/20-300 VDC/VAC input
Inputs	Switch (no voltage) DC voltage: Absolute Voltage Range -0.5 VDC min to 30.0 VDC max; VIH 3.0 VDC max; VIL 1.0 VDC min High voltage AC/DC: Absolute Maximum Voltage 300 VAC/VDC; VIH 10VDC/20VAC max; VIL 3VDC/3VAC min		
Power	Internally powered by lithium battery. Battery life 10 years (reduced to 5 years for temps above 100°F [37.8°C])		
Mounting	Panel with clip (1/32 DIN panel cutout)		
Terminations	Terminal block		
Weight	2 oz [57g]		
Storage and Operating Temp	-20°C to +60°C [-4°F to +140°F]		
Humidity	0 to 95% RH, non-condensing		
Vibration	Operating: 10 to 55 Hz, 0.01 in [0.25 mm] double amplitude – Non-operating: 10 to 55 Hz, 0.03 in [0.75 mm] double amplitude		
Shock	Operating: 10G; Non-operating: 30G		
Dielectric	1000VAC 50/60 Hz for 1 minute		
Accuracy	100% provided signal meets stated parameters		
EMC Compliance:	EN61326:1997 with A1:1998 and A3:2001 for industrial environments		
Enclosure	NEMA 4/4X, 12 & IP66 compliant from the front when properly mounted using the optional gasket.		
Approvals	CE compliant, UL and cUL recognized, UL file #E36690		
Environmental Compliance	Compliant to European WEEE and RoHS		

Notes

- When interfacing with a solid state relay or AC sensor, the leakage current needs to be considered.
- Operation beyond the Absolute Voltage Range or the Absolute Maximum Voltage may result in damage to the unit.

Mounting Gasket for Trumeter 6320 LCD Hour Meter

Part Number	Price	Description	Drawing
<u>5003-013</u>	\$2.25	Gasket	<u>PDF</u>

5003-013

Trumeter 6320

LCD Hour Meter – Capabilities

Hour Meter Operation

Hour counting method only. This counting method is factory set.

Hour Meter: The Hour Meter displays hours and tenths of hours.

I/O Functions

The I/O functions can be mixed and matched to maximize the functionality of the Hour Meter. There are three types of inputs that the Hour Meter can accept. The interfaces for each are factory set. The inputs can be as follows:

- **Switch:** Open circuit or switch closure
- **Low Voltage DC:** Low input is less than 1VDC and High Input is 3-30VDC.
- **High Voltage DC or AC:** Low is less than 3VDC or 3VAC. A High Input is either 10-300 VDC or 20-300 VAC.

For the Switch and Low Voltage DC Hour Meters, there are six screw terminals for all of the I/O. For the High Voltage Hour Meters, there are four screw terminals for the I/O. The combinations of the I/O and power supply are factory set.

Enable Inputs: The enable inputs are those inputs that enable the accumulation of time.

Remote Reset: When the remote reset is at a high level, the Hour Meter will reset.

Resets

Remote Reset: A model with Remote reset has a dedicated terminal for performing the reset function. The unit resets when the remote reset signal is at a high level. When the reset signal is at a low level, accumulating time can occur.

Trumeter 7111/7111HV LCD Counter

**7111**

The 7111/7111HV counter is a compact, self-powered counter with bi-directional counting and screw terminals to ensure fast wiring.

Features

- Latest CMOS circuitry for an expected battery life of 10 years
- Built-in screw terminals simplify installation
- 9mm black high-contrast LCD display
- 5-30 VDC externally powered backlight, requires resistor for voltages above 5VDC
- Counting up to 10kHz (7111)
- The 7111HV permits triggering from any voltage between 10-240 VAC or 10-110 VDC $\pm 10\%$
- Contact closure/open collector low speed count input with integral de-bounce circuitry (7111 model)
- 1/32 DIN panel cutout
- Choice of mounting available – front panel with supplied bezel or rear mounting clip
- Front panel can be sealed to IP65 using included gasket
- CE, UL and cUL approved

Applications

- Replacement for electro-mechanical counters
- Applications where external power is not readily available
- Position, length, rotation and distance measuring applications
- Event counting
- Water meter remote display

Trumeter 7111/7111HV LCD Counter Selection Guide

Part Number	Price	Description	Drawing
7111	\$40.50	8-digit self-powered totalizing counter	PDF
7111HV	\$49.00	8-digit self-powered totalizing counter with high-voltage inputs	PDF

Trumeter 7111/7111HV LCD Counter Specifications

Part Number	7111	7111HV
Battery	Non-replaceable lithium battery, expected life 10 years at 20°C [68°F]	
Display	8 digit black LCD, 9mm characters, leading zero blanking. 5-30 VDC externally powered backlight, requires resistor for voltages above 5VDC. Configurable decimal place: up to 3 decimal places (jumper link configured).	
Count Range	99999999 - rollover to 0	
Connections	Finger-proof screw connections for cables up to 1.5 mm ²	
Operating temperature	-10°C to +60°C [14°F to 140°F]	
Storage temperature	-20°C to +60°C [-4°F to 140°F]	
Altitude	Up to 2000m [6562ft]	
Relative Humidity	80% max up to 31°C, decreasing to 50% max at 40°C	
Sealing	IP65 / NEMA4X	
Mounting	Either with clip mount (supplied) or two front screws with bezel (supplied). 1/32 DIN panel cutout.	
Manual Reset Enable	Configured by jumper link	
Weight	62g [2.2 oz]	
Direction Input	Dry contact closure or electronic input TTL/CMOS compatible. Add=no connection or >2.4v (logic 1); Subtract=connect to COMMON or <0.7v (logic 0). Direction input must precede count input by 5 μ S (minimum) for valid operation.	Dry contact closure or electronic input TTL/CMOS compatible. Add=no connection or >2.4v (logic 1); Subtract=connect to COMMON or <0.7v (logic 0). Direction input must precede count input by 5 μ S (minimum) for valid operation. Max 18VDC.
External Reset	Contact closure/open collector, negative edge triggered, 0.7v threshold, 15ms minimum closure time.	10-110 VDC $\pm 10\%$, 10-240 VAC $\pm 10\%$, 50ms minimum length.
Count Input	Low speed: Contact closure/open collector with integral de-bounce circuitry. 30Hz maximum, negative edge triggered, 0.7v threshold, 15ms minimum closure time. Max 18VDC. High speed: Electronic input 10kHz maximum, negative edge triggered, 0.7v threshold 50 μ s minimum pulse length, TTL/CMOS compatible. Max 18VDC.	10-110 VDC $\pm 10\%$, 10-240 VAC $\pm 10\%$, 50ms minimum pulse width, 10Hz.
Agency Approvals	UL file #E36690	

Trumeter 7511/7511HV Self-Powered LCD Timer

**7511HV**

The Trumeter 7511/7511HV Self-Powered LCD Timer is a compact LCD timer designed for many applications and offering an optional high-voltage input. It features an 8-digit liquid crystal display timer and is self-powered with a 10-year battery life. Screw terminals ensure fast wiring. Additional features include backlighting (external 5VDC supply required), 4 timing modes, timing direction indication and 9mm high digits.

The High Voltage (HV) version accepts input voltages of 5-110 VDC or 10-240 VAC.

Features

- Latest CMOS circuitry for an expected battery life of 10 years
- 9mm black high-contrast LCD display
- 5-30 VDC externally powered backlight, requires resistor for voltages above 5VDC
- Minimum contact closure time 1 second
- Four timing modes
- Times up or down
- External reset input
- Choice of mounting available – front panel with supplied bezel or rear mounting clip
- Front panel can be sealed to IP65 with included gasket
- 1/32 DIN panel cutout
- Simplified installation – all models have screw connections on rear for quick and simple connection
- CE, UL and cUL approved
- 7511HV permits triggering from any voltage from 10-240 VAC or 5-110 VDC $\pm 10\%$.

Trumeter 7511/7511HV Self-Powered LCD Timer Selection Guide

Part Number	Price	Description	Drawing
7511	\$40.50	8-digit self-powered totalizing timer	PDF
7511HV	\$49.00	8-digit self-powered totalizing timer with high-voltage input	PDF

Trumeter 7511/7511HV Self-Powered LCD Timer Specifications

Part Number	7511	7511HV
Battery	Non-replaceable lithium battery, expected life 10 years at 20°C	
Display	8 digit black LCD, 9mm characters, leading zero blanking. 5-30 VDC externally powered backlight, requires resistor for voltages above 5VDC. Configurable decimal place: up to 3 decimal places (jumper link configured).	
Timing Ranges	Seconds, minutes and seconds; hours and 1/100ths and hours and minutes	
Timing Input	Sink signal (NPN) 18VDC maximum threshold, 1VDC negative edge trigger	10-240 VAC $\pm 10\%$, 5-110 VDC $\pm 10\%$, Opto-isolated
Direction Input	Up not connected, down connected to common	
Operating temperature	-10°C to +60°C [14°F to 140°F]	
Storage temperature	-20°C to +70°C [-4°F to 158°F]	
Material	Clear polycarbonate	
Environmental Protection	IP65 / NEMA 4X	
Accuracy (at 25°C)	$\pm 0.002\%$	
Temperature Drift	0.034 PPM/°C	
Aging	< 2 PPM/year	
Weight	62g [2.2 oz]	
External Reset	Sink signal (NPN) or contact closure minimum 15 mS	
Agency Approvals	UL file #E36690	