

Product Data Document

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Series 4000

Recording AC Ammeters

For measurement of electric current where low loss (burden), high torque, and negligible leveling error is desired.

General

The Series 4000 AC electrical recorder, from Emerson Process Management, is available in 1 Pen model for universal mounting. They are widely used to monitor AC currents by electric power companies in stations, sub stations, in distribution networks, etc.

Ammeters are also widely used in industry to monitor all kinds of electrical loading.

Ammeters are available with a standard range of 0-5 amps. Higher ranges can be measured using current transformers.

Features

- Moving-iron measuring element: Produces ample torque to overcome pen friction, even when instrument is tilted from level position. Moving element shaft is supported by miniature precision stainless steel ball bearings at front and rear to absorb shock, resist corrosion and minimize friction.
 - Magnetic damping: Near-critical damping gives fast response with low overshoot. Damping action is provided by an aluminum vane, mounted on the moving element shaft, which swings between the pole pieces of a C-shaped Alnico magnet.
 - Temperature stability: Instrument design minimizes effects due to thermal expansion of parts and changes in the magnetic permeability of iron elements.
- Magnetic shielding: Recorder accuracy changes less than 0.15% when instrument is placed in a stray magnetic field of 5 oersteds. (This field strength is equivalent to that of a distance of one foot from a conductor carrying 750 amperes).
 - Fiber tip pen: Operated directly by measuring elements. No multiplying linkages are required.
 - Case: Rectangular, die-cast aluminum case with gasketed aluminum door for moisture and weather protection.
 - Door is supplied with sealed shatterproof glass.
 - Case Dimensions: 10-3/4" wide x 14-3/4" high x 5-3/4" deep
 - Panel Cutout Dimensions: 10-5/16" wide x 13-9/16" high
 - Weight: 17-1/2 pounds for permanent mounting
 - Chart Drive Options:
 - Spring wound, 24 hour/ 7 day
 - Electric, 120V 60 Hz, 24 hour or 7 day
 - Battery Power Supply
 - @ Ambient temperature, 1.5V Alkaline "C" size
 - @ Low temperature, 3.6V Lithium "C" size
 - ISO 9001:2008 Certified



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Recording AC Ammeters

- Battery life:
 Regular Temp: 1.5v Alkaline "C" Size
 Low Temp: 3.6v Lithium "C" size

Speed	Ambient Temp	32 Deg F	-5 Deg F
60 minutes	2 weeks	1 week	1 week
24 hour	6 months	4 months	3 months
7 to 32 day	24 months	16 months	12 months

- Chart drive approvals:
 CUL/ UL listed, Class I, Groups C & D
- Charts: circular, 8" diameter, single zone
- Inking: fiber pen

Operating Characteristics and Influences

Characteristic	Influence
Calibrated accuracy, % of full-scale value	+1 (top 80% scale)
Loss (Burden), volt-amperes Power factor	5.5 32.8%
Sensitivity, ohms per volt	
Ambient temperature influence % (of full scale) change in reading caused by +10 C variation from 25 C	Nil
Frequency influence % (of full scale).	Nil
External field influence % (of full-Scale) change in reading caused by magnetic field of 5 oersteds	Nil
Warm-up time, minutes	10-15
Speed of response	.3 sec., 95% FS

Ordering Information for Recording Ammeters

Recording Ammeter, Single Pen, 0/5 Amps, Fiber Tip Pen, Universal Mounting, Internal Connections, Shatter-proof Glass (sealed with RTV silicon).

Model Number	Description
410887B01	Ammeter as described above, with 24 hour/ 7 day Spring Drive
410887B02	Ammeter as described above, with Multispeed Battery

Available Charts:

1 box of charts (100 charts) included with each unit. Other ranges are available. Please contact factory.

Chart Number	Range	Speed
3831	0-100 amp	7 day
3801	0-5 amp	7 day
3811	0-100 amp	24 hour
3830	0-75 amp	7 day
3822	0-150 amp	7 day
3837	0-200 amp	7 day
3836	0-50 amp	7 day
3827	0-800 amp	7 day
3846	0-400 amp	7 day
3825	0-600 amp	7 day
3810	0-75 amp	24 hour
3812	0-150 amp	24 hour
3813	0-200 amp	24 hour

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