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AMPROBE INSTRUMENT®
DIVISION OF CORE INDUSTRIES INC., LYNBROOK, NEW YORK 11563

OPERATING INSTRUCTIONS
FOR
AMPROBE®
TRUE RMS AC CURRENT RECORDER

MODELS
LAA3RMS and LAA3RMS-T

See Precautions for Personal and Instrument Protection on Page 3

See Limited Warranty on Page 2

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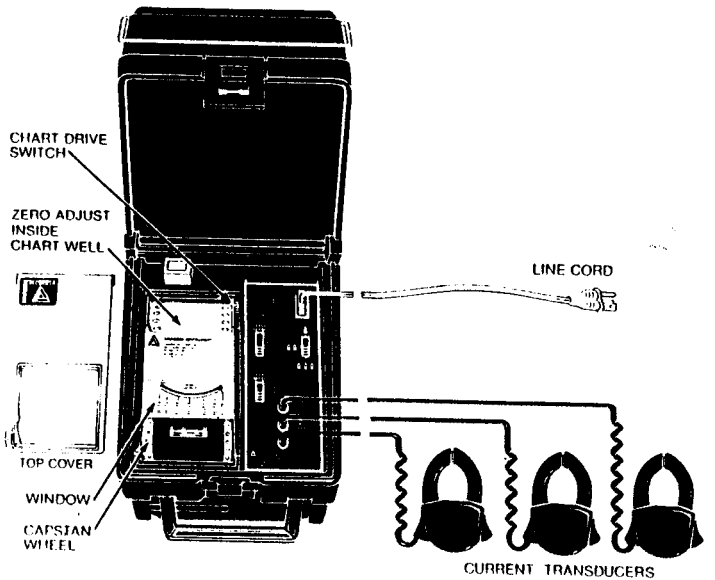
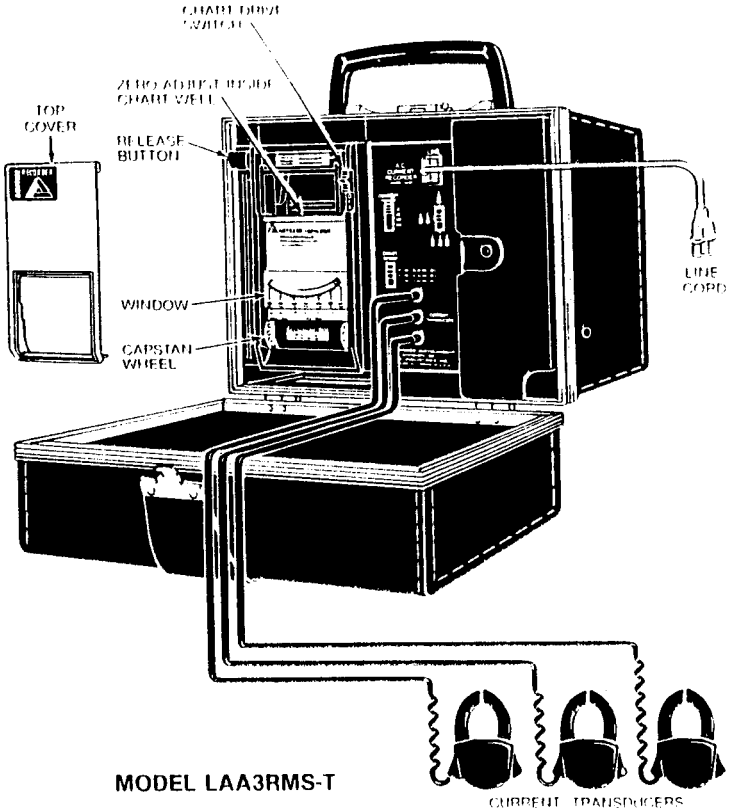


MODEL LAA3RMS



MODEL LAA3RMS-T

INTRODUCTION

Models LAA3RMS and LAA3RMS-T can, on a time-sharing basis, sequentially record up to three true RMS (TRMS) AC currents on the same chart. The recorder is supplied with three matched clamp-on current transducers which have been calibrated to the recorder. The three transducers sense the three currents (A1, A2, A3) which are recorded in the following sequence: A1, A2, A3, A2, A3, A3. The trace for each current recorded on the chart has a different "dot" pattern (1, 2 or 3 dots) which identifies each current trace. One complete sequence of recording all three currents (A1, A2, A3, A2, A3, A3) takes only 30 seconds with a chart speed of 12 inches per hour; one minute with a chart speed of 6 inches per hour; 6 minutes with a chart speed of one inch per hour.

When Models LAA3RMS and LAA3RMS-T are used to monitor the currents in a balanced 3-phase power system, the dot pattern on the chart for all three phases will tend to merge and appear as one straight line or as a narrow band of dots. This is intentional and indicates that the load is balanced. When one or more phases are unbalanced, there will be a separation between the current traces on the chart which should permit identification of the dot patterns (identifying the phase or phases).

The current sensed by the transducer plugged into the jacks will be recorded as follows:

#1 Jack = one-dot pattern
#2 Jack = two-dot pattern
#3 Jack = three-dot pattern

SPECIFICATIONS

AC Current (True RMS, AC-Coupled)

Ranges: 0-15/60/150/300 Amps 3 ϕ

Accuracy: ±3% of full scale from 50-70Hz.
±5% of full scale from 70-400Hz.

Crest Factor: 3:1 max.

Power Requirements: 120 Volts 60Hz, 3 Watts
(unless otherwise indicated)

Chart Speed: 1" (2.54 cm)/hr., 6" (15.24 cm)/hr., 12" (30.48 cm)/hr.

Imprint Rate (LAA3RMS): 1 per min. @ 1"/hr., 1 per 10 sec. & 6"/hr., 1 per 5 sec. @ 12"/hr.

Imprint Rate (LAA3RMS-T): 1 per 30 sec. @ 1"/hr., 1 per 5 sec. @ 6"/hr., 1 per 2.5 sec. @ 12"/hr.

Operating Temperature: 32°F (0°C) to 122°F (50°C)

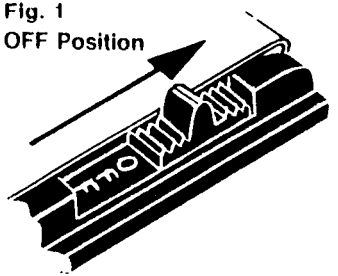
Chart: Cat. No. 300SVA for LAA3RMS or
Cat. No. 300SVA-6 for LAA3RMS-T.

ZERO ADJUSTING

With chart drive switch in "OFF" position (see fig. 1) exposing the word "OFF," check mechanical zero setting of pointer (see fig. 2) before making any electrical connections to the instrument. If adjustment is necessary proceed as follows:

a) Remove top cover—pull bottom ledge of frame toward you and lift. See fig. 3 or 4.
b) With strip chart roll not in recorder, locate star wheel. See fig. 5 or 6.
c) Apply finger to star wheel and turn until pointer lines up with zero mark at the extreme right of scale. See fig. 2.

Fig. 1
OFF Position



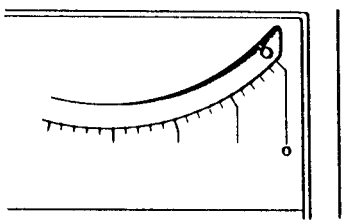


Fig. 2

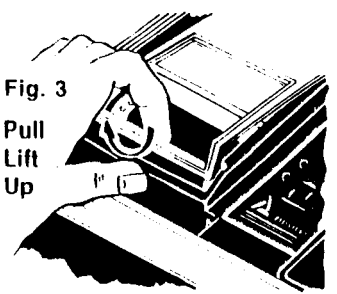


Fig. 3
Pull
Lift
Up

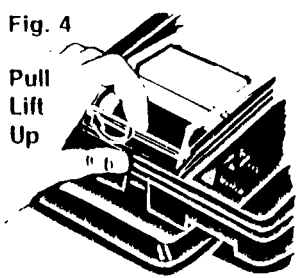


Fig. 4
Pull
Lift
Up

Fig. 5
Zero Adjust
Star Wheel

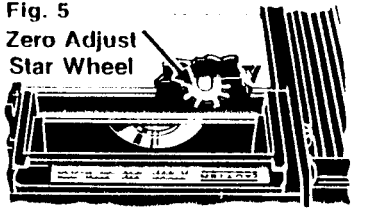
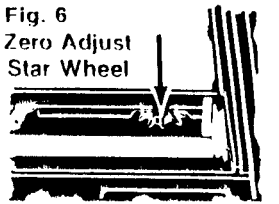


Fig. 6
Zero Adjust
Star Wheel



LOADING AND UNLOADING CHART PAPER MODEL LAA3RMS

1. Move chart drive switch to OFF position exposing the word "OFF." See fig. 1.
2. Remove top cover. See fig. 4.
3. Unroll about nine (9) inches of chart paper.
4. With printed side up, slip leading edge of paper under the glass and out, through slot in front as shown in fig. 7.
5. Make sure the holes on both sides of the chart paper engage the sprockets of both capstan wheels.
6. Line up time arrow (see fig. 8) with any line on the left of the chart paper.
7. To unload chart paper, turn chart drive switch off and remove paper.

Fig. 7
Slot to Feed
Paper Out
Front

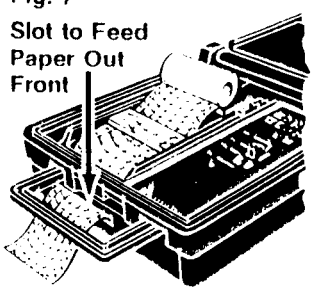
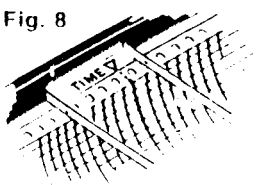


Fig. 8



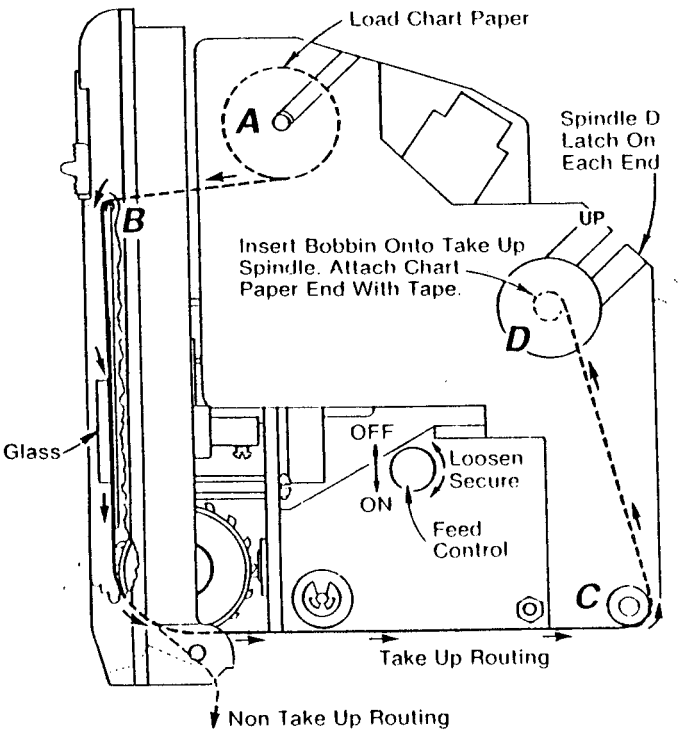


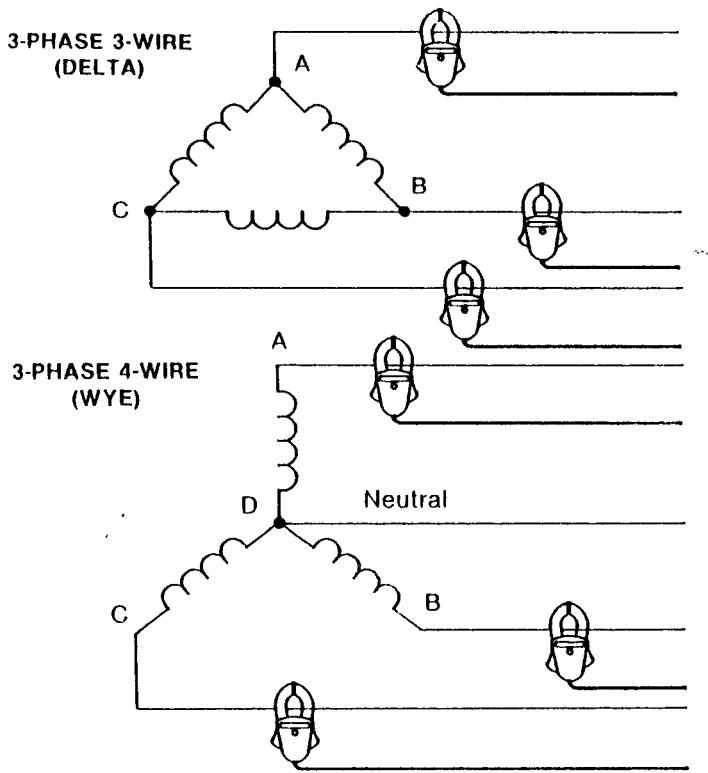
Fig. 9

LOADING AND UNLOADING CHART PAPER
MODEL LAA3RMS-T

Fig. 10

1. Move chart drive switch to OFF position exposing the word "OFF." See fig. 1.
2. Remove top cover. See fig. 3.
3. To insert or remove chart paper, place recorder in horizontal position and press the release button in the direction shown in fig. 10. Raise the recorder mechanism to a vertical position until it locks. Remove feed shaft A (see fig. 9) and place chart roll on spindle. Remove tape on roll and retain tape for securing chart on take-up spindle D. Unroll about 12" to 15" and route paper over top edge of scale plate (B) underneath glass, over the sprocket wheels, to the rear and over the idle roller C up to the cardboard bobbin mounted on take-up spindle D. Secure edge of chart to bobbin with tape. Make sure the sprocket holes in the paper engage the sprocket wheels. Be sure that feed control is tight and in the right position. The word "on" must be visible. Press in the idle roller extension C to allow the recording mechanism to move back down into case and lock into position. Replace cover by positioning the "U" bend onto the plastic projections and snap front down. Make sure chart paper is not binding with the cover in place. For "non-take-up" recording, route chart through bottom slot as shown in fig. 9.
4. To remove chart from take-up spindle D, move the latches away from the take-up spindle. Turn knurled knob on spindle (D) until the slot in the take-up drive pulley at the opposite end of the spindle is lined up with the slot in the side frame of the recorder. Slide the spindle and chart up and out of the slots in the side frames of the recorder. Remove tape from chart and bobbin.
5. To unload chart paper from recorder turn chart drive switch off, exposing the word "OFF." See fig. 1. Follow 4 above. Remove chart from feed shaft A and pull paper through recorder.

CONNECTING THE LAA3RMS AND LAA3RMS-T AC CURRENT RECORDER TO MONITOR A 3-PHASE 3-WIRE OR 4-WIRE SYSTEM.



HOW TO USE AS A RECORDER

1. Chart drive switch must be in "OFF" position exposing the word "OFF." See fig. 1
2. Remove top cover. See figs. 3 or 4.
3. With recorder not powered, zero adjust pointer. (See "Zero Adjusting" for more details).
4. Load chart paper by following chart loading instructions.
5. Replace front cover by positioning the "U" bend onto the metal projections of chart well (non-takeup) and onto molded plastic projections for the takeup recorder and then snap front down. Make sure chart paper is not binding with cover in place.
6. **FOR AMPERE RECORDING WITH ONE CURRENT TRANSDUCER:**
   Set ampere range selector switch to appropriate range. Set transducer selector switch to "current transducer #1" position. Plug current transducer into #1 jack and snap around one leg of the line going to the load.
7. **FOR AMPERE RECORDING WITH TWO OR THREE CURRENT TRANSDUCERS:**
   Set ampere range selector switch to appropriate range. Set transducer selector switch to appropriate position. Plug current transducers into appropriate jacks and snap each around one leg of the line going to the load. Use jacks #1 and #2 for two currents.
8. Plug power line cord into recorder line receptacle and connect to proper line voltage and frequency.
9. Push chart drive switch to "ON" position exposing the word "ON." Make sure switch clicks into detent position which locks it into place. See fig. 11.
10. Mark time of start on chart paper. See fig. 8.
11. Secure recorder in a horizontal or vertical position.

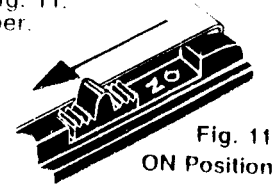


Fig. 11
ON Position

HOW TO USE AS AN INDICATING METER

1. Set chart drive switch to "OFF" position. See fig. 1.
2. Remove chart paper and zero adjust pointer. See "ZERO ADJUSTING" for more details.
3. Follow steps 6 and 8 of "HOW TO USE AS A RECORDER."