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LEAD-LAG MODULE MODEL NO. LLM 64

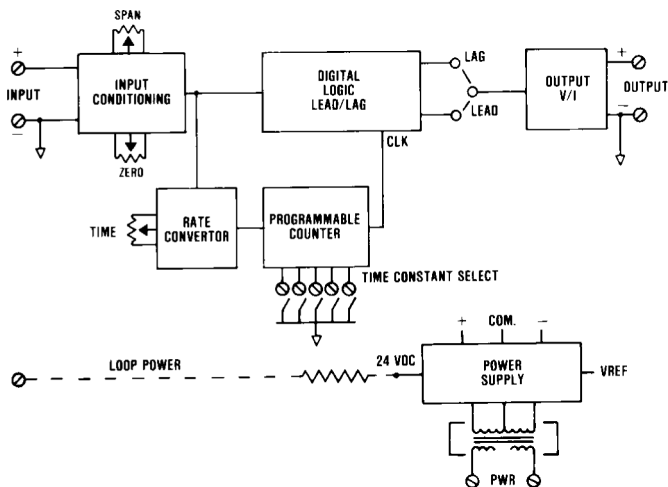
THE ADTECH MODEL LLM 64 LEAD-LAG MODULE OFFERS AN ACCURATE AND ECONOMICAL MEANS OF PRODUCING A PHASE LEAD OR PHASE LAG BETWEEN AN INPUT CURRENT OR VOLTAGE SIGNAL AND OUTPUT PROCESS SIGNAL, SUCH AS 4-20 MA DC, OR 1-5 VDC. IT UTILIZES PRECISE DIGITAL TECHNIQUES TO DO THIS FUNCTION.

IN THE LEAD MODE, A STEP INPUT PRODUCES A FAST RISE (OR FALL) WAVE FORM WITH A GAIN OF 10, THEN THE OUTPUT DECAYS LIKE AN RC RESPONSE TOWARD THE STEADY STATE OUTPUT LEVEL. IN THE LAG MODE, A STEP INPUT PRODUCES AN OUTPUT TYPICAL OF A SINGLE POLE LOW PASS FILTER.

THE LLM 64 PROVIDES STANDARD PROCESS CURRENT OR VOLTAGE SIGNALS ON THE OUTPUT WITH A MAXIMUM OF 10 mV P/P OUTPUT RIPPLE.

RECALIBRATION TO OTHER DESIRED RANGES IS ACCOMPLISHED EASILY. THE USE OF TEMPERATURE-STABLE, LOW-NOISE COMPONENTS PROVIDES EXCELLENT STABILITY AND NOISE IMMUNITY.

THE LLM 64 EMPLOYS THE LATEST DIGITAL AND ANALOG DESIGN AND COMPONENTS UTILIZING PROVEN TECHNIQUES FOR SUPERIOR RELIABILITY, ACCURACY, AND SERVICEABILITY.



FEATURES

- LEAD-LAG RANGES: 1 SECOND TO 50 HOURS
- LEAD-LAG MODE: STRAP SELECTABLE
- LOW-PASS FILTER OR SIGNAL AVERAGER: 2.5 MICRO HZ TO 5 HZ

ADJUSTABLE

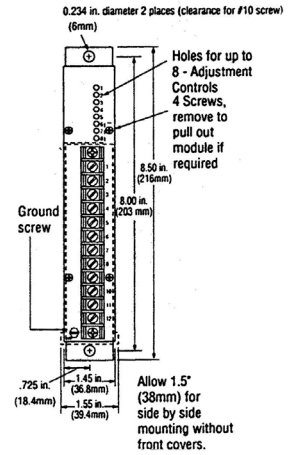
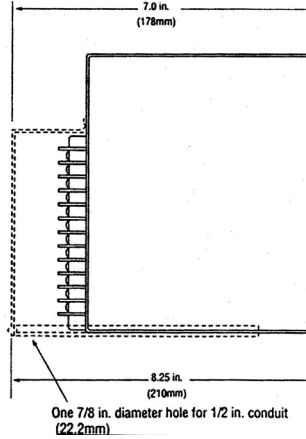
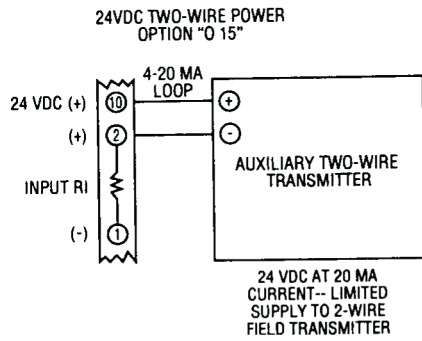
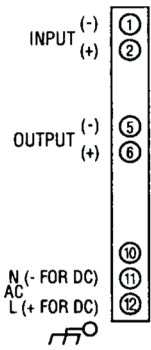
- DC CURRENT INPUTS: 4-20 MA, ETC.
- DC VOLTAGE INPUTS: 1-5 VDC, ETC.
- HIGH INPUT IMPEDANCE: 10 MEGOHMS MINIMUM
- ZERO-BASED INPUTS: CURRENT AND VOLTAGE
- DC PROCESS SIGNAL OUTPUTS: CURRENT AND VOLTAGE
- REPEATABILITY: +0.02% OF SPAN TYPICAL
- HIGH ACCURACY: +0.1% OF SPAN

TYPICAL APPLICATIONS

- PROCESS FEED FORWARD AND FEEDBACK CONTROL
- RESPONSE RESTRICTION OF ACTUATOR MOTORS
- RECORDER PEN NOISE REDUCTION
- RATE-OF-CHANGE COMPUTER



CONNECTIONS / DIMENSIONS



INPUT/OUTPUT

INPUT SIGNALS
 4-20 mA DC (Z IN 250 OHMS)
 10-50 mA DC (Z IN 100 OHMS)
 0-1 mA DC (Z IN 5K OHMS)
 0-10 mA DC (Z IN 500 OHMS)
 1-5 VDC (Z IN 10 MEGOHMS)
 0-5 VDC (Z IN 1 MEGOHM)
 0-10 VDC (Z IN 1 MEGOHM)

OUTPUT SIGNALS/ OUTPUT DRIVE (RL)
 SIGNAL AC POWER (RL) DC POWER (RL)
 4-20 mA DC 0-1,000 OHMS MAX. 0-900 OHMS MAX.
 10-50 mA DC 0-400 OHMS MAX. 0-350 OHMS MAX.
 0-1 mA DC 0-20,000 OHMS MAX. 0-18,000 OHMS MAX.
 1-5 VDC 100K OHMS MIN. 100K OHMS MIN.
 0-10 VDC 200K OHMS MIN. 200K OHMS MIN.
 RAMP RANGES: SPECIFY TIME CONSTANT

OTHER ZERO-BASED CURRENT AND VOLTAGES ARE AVAILABLE.
 CONTACT CLOSURE-STANDARD UNIT ONLY

PERFORMANCE

CALIBRATED ACCURACY: $\pm 0.1\%$
 LINEARITY: $\pm 0.1\%$ MAXIMUM, $\pm 0.04\%$ TYPICAL
 REPEATABILITY: $\pm 0.05\%$ MAXIMUM
 TEMPERATURE STABILITY: $\pm 0.01\%$ / °F MAXIMUM, $\pm 0.004\%$ / °F TYPICAL
 LOAD EFFECT: $\pm 0.01\%$ ZERO TO FULL LOAD
 OUTPUT RIPPLE: 10 mV P/P MAXIMUM
 RESPONSE TIME: DEPENDS ON RAMP RATE & FUNCTION
 TEMPERATURE RANGE: 0° TO 140°F (-18° TO 60°C) OPERATING; -40° TO 185°F (-40° TO 85°C) STORAGE
 POWER SUPPLY EFFECT: $\pm 0.05\%$ FOR A $\pm 10\%$ POWER VARIATION

NOTE: ALL ACCURACIES ARE GIVEN AS A PERCENTAGE OF SPAN.

POWER

115 VAC: 50/60 HZ, 0.7 PF	(STANDARD)	48 VDC: ISOLATED	(OPTION P3)
12 VDC: ISOLATED	(OPTION P8)	125 VDC: ISOLATED (105-140 VDC)	(OPTION P4)
24 VDC: NON-ISOLATED	(OPTION P1)	230 VAC: 50/60 HZ, 0.7 PF	(OPTION P5)
24 VDC: ISOLATED	(OPTION P2)		

NOTE: ALL UNITS 3 WATTS MAXIMUM, AND A $\pm 10\%$ POWER VARIATION

MECHANICAL

ELECTRICAL CLASSIFICATION: GENERAL PURPOSE
 CONNECTION: BARRIER TERMINAL STRIP (3/8" SPACING, NO. 6 SCREWS)
 CONTROLS: MULTITURN ZERO, SPAN, AND TIME- CONSTANT CONTROLS
 MOUNTING: SURFACE MOUNTING STANDARD. SEE HOUSINGS SECTION FOR OPTIONS.
 WEIGHT: NET UNIT: 2.6 POUNDS (1.18 KILOGRAMS); SHIPPING: 3.0 POUNDS (1.36 KILOGRAMS)

OPTIONS

OPTION NUMBER	DESCRIPTION
I 18	LOW IMPEDANCE DC CURRENT INPUTS (1/10 OF STANDARD (Z) (LIT 56 ONLY)
O 10	BIPOLAR CURRENT (LARGER THAN ± 1 MA)
O 11	BIPOLAR VOLTAGE TO ± 10 VDC; AT 1 MA, BIPOLAR CURRENT ± 1 MA
O 15	TWO-WIRE TRANSMITTER EXCITATION
H 10	THIN-LINE CONDUIT MOUNTING PLATE AND TERMINAL COVER
H 13B, H 14B, H 15B	NEMA 4, 7, AND 12 ENCLOSURES
H 16	PFA 12 HIGH-DENSITY, PLUG-IN ENCLOSURE

Ordering Information

- Model number
- Input signal
- Time constant
- Output signal
- Prime power with option no.
- Input/output options
- Housing and miscellaneous options

Please refer to the Housing and/or Option Section for more specific and detailed information.