

July 1990

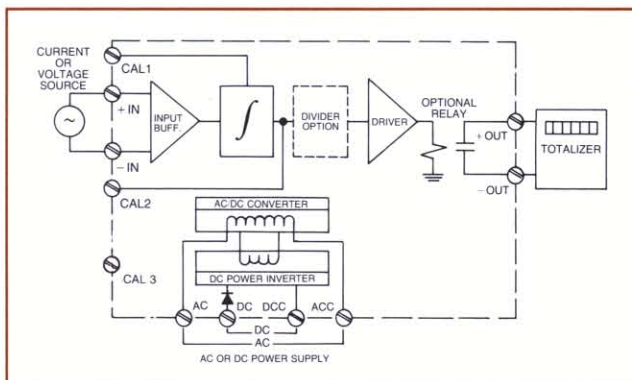
Data Sheet 6.20

Description

The LIT Linear Integrating Totalizer accepts a standard process current or voltage signal and produces a proportional pulse string output proportional to the input. Capable of driving a variety of totalizing counters, the LIT's output can be precisely scaled to represent virtually any engineering units. With 12 different output ranges—spanning from 0 to 12.5 through 0 to 51,200 counts per hour—the LIT assures accurate output count in such units as gallons, barrels, liters, tons, BTU's or any other engineering units that measure the change of a process variable over time.

The LIT can be equipped with a wide variety of predetermining or totalizing counters, such as the optionally available 8-digit LCD counter (with manual and/or electronic reset), which can be installed above the front panel of the unit. Other LIT options include: attenuated input for high voltage input (i.e., 0-10 Vdc); elevated zero input; front panel range selection; additional output capabilities; and RFI/EMI protection.

The standard housing used with the LIT totalizer is a corrosion-resistant CSA-approved aluminum case with a "U-Back" mounting bracket that mounts into a 3" by 7-1/2" installation space. Other available housings include a plug-in card for high-density rack mounting and a panel mount housing which allows for flush panel mounting. Eurocard high-density plug-in housings that adhere to international specifications are also available. Housing enclosures used with the LIT unit include either explosion-proof, fiberglass, oiltight, or watertight enclosures, each of which meet NEMA specifications as indicated in the Specifications table.



Schematic Diagram of Process Totalizing Loop



Moore Industries' LIT accepts current or voltage input and produces a pulse signal that drives a totalizing counter.

Features

- **Front panel range selection.** With the -FS option, the LIT unit is provided with a front panel mounted range selection switch which can be used to select any of the output ranges A1 through J.
- **Superior accuracy.** LIT units are easily precision calibrated to within 0.05% accuracy with 0.01% repeatability.
- **Complete isolation available.** Isolation between power and input-output is standard for the LIT. Input-output isolation is achieved by specifying an optional relay output (i.e., -HS, -PR, -RE, or -RR option).
- **Increased low input accuracy.** Count dropout on LIT is adjustable from 0.5 to 20% of full scale which helps eliminate false totalization of unwanted low level noise signals.
- **RFI/EMI protection.** With the -RF option, the LIT totalizer comes equipped with a patented filter assembly that prevents radio frequency interference from entering the unit or rack.



Linear Integrating Totalizer

Specifications

Characteristics		Input Ranges (continued)	*Options (continued)
Adjustments	22-turn potentiometers Zero: For an input of $\pm 10\%$ of maximum input range, adjusts output to 0% of selected output span. Span: With maximum selected input, output adjustable within a preselected output range.	Output Ranges (In counts per hour) A3 0 to 12.5 thru 25 cph A2 0 to 25 thru 50 cph A1 0 to 50 thru 100 cph A 0 to 100 thru 200 cph B 0 to 200 thru 400 cph C 0 to 400 thru 800 cph D 0 to 800 thru 1600 cph E 0 to 1600 thru 3200 cph F 0 to 3200 thru 6400 cph G 0 to 6400 thru 12,800 cph H 0 to 12,800 thru 25,600 cph J 0 to 25,600 thru 51,200 cph A1-J Internal dip switch selection Higher rates available on special order.	-IT Integral bracket mounted 6-digit manual or non-reset totalizer (electromechanical). Requires TS housing -PR Solid-state power relay, 5A @ 117Vac only, inductive (not available with -RE or -RR option). -RE External relay rated at 5A @ 28Vdc or 117Vac, non-inductive (not available with PC housing) -RF Filter for RFI/EMI protection; exceeds SAMA std. PMC 33.1 1978 Class 2 a,b,c (not available with -PC or -PM housing). -RR SPST relay N.O. contact output, rated at 1A @ 28Vdc, non-inductive. -TX Transmitter excitation - 30Vdc at 25mA max. to power 4-20mA two-wire field transmitter.
Performance	Calibration Capability: $\pm 0.05\%$ of span (linearity) Repeatability: $\pm 0.01\%$ of span Line Voltage Effect: $\pm 0.005\%/1\%$ line voltage change (ac or dc)	Power Input 24DC 24Vdc $\pm 10\%$ 45DC 45Vdc $\pm 10\%$ 100AC, 117AC, 200AC, 220AC, 240AC; 50/60Hz, $\pm 10\%$ 5 watts nominal	*Housings STD Surface-mounted standard enclosure AB Angle bracket mounting CP Conduit termination D2 Conduit termination with aluminum safety cover to meet Class I, Gp. A,B,C,D Div. 2 requirements DCM DIN clip mount for standard unit EX Explosion-proof enclosure, Div. 1 FG Fiberglass enclosure, NEMA 12 GP General-purpose enclosure, NEMA 1 OT Oiltight enclosure, NEMA 12 PC Plug-in card housing (24Vdc & 45Vdc power only) PM Panel mount enclosure TCE Transparent cover enclosure, NEMA 4 TS Extended U-Back for -IT option WT Watertight enclosure, NEMA 4
Ambient Temperature	Range: -18°C to +72°C (0°F to +165°F) Effect: $\pm 0.01\%/^{\circ}\text{F}$ over above range	*Options -AT Attenuation for input voltage exceeding standard specifications - specify voltage (200V max.) -ED8 Solid state LCD counter. Integral bracket-mounted, 8-digit, electric reset -ET 12V output pulse for electronic counters other than -ED8 -FS Front mounted range selection switch (A1-J) -FT Front-mounted totalizer for PM housing -FU 400mA power fuse for PC housing (requires engineering for STD housing) -HS Hermetically-sealed SPST relay rated at 1A @ 28Vdc, non-inductive	
Output	24V, 35 millisecond nominal output pulse for remote electronic or electromechanical totalizers. Count Dropout: 0.5% to 20% of input full scale (adjustable)		
Isolation	Isolation between power and input-output is standard. Input-output isolation is achieved by specifying an optional relay output.		
Certification	CSA		
Weight	Approximately 2 pounds (908 grams)		
Ordering Specifications			
Unit	LIT		
Input Ranges	Current: 1-5MA: 1-5mA into 200 Ω , nominal 4-20MA: 4-20mA into 50 Ω , nominal 10-50MA: 10-50mA into 20 Ω , nominal		

When ordering, specify:

Unit / Input Range / Output Range/ Power Input / Options [Housing]

Model number example: LIT/4-20MA/E/117AC/-RR -TX [STD]

*For more information on additional and individual housings or options, refer to the separate housing data sheet or consult the factory.



United States
Tel: (818) 894-7111
FAX: (818) 891-2816

The Interface Solution Experts

Australia
Tel: (02) 9525-9177
FAX: (02) 9525-7296

Belgium
Tel: 03/235.35.44
FAX: 03/271.00.17

Netherlands
Tel: (0)344-617971
FAX: (0)344-615920

United Kingdom
Tel: 01293 514488
FAX: 01293 536852