

PRIMARY INJECTION TEST SETS



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LET RANGE

- LET-400**
- LET-400-RD**
- LET-400-RDC**
- LET-2000-RD**
- LET-2000-RDM**
- LET-2010-RD**
- LET-4000-R**
- LET-4000-RD**
- LET-4000-RDM**

Primary injection Equipment

DESCRIPTION

The LET range addresses test applications that require high levels of AC or DC current, typically primary current injection. The generation power of the various models ranges from 1,000 to 8,000 VA or Watt.

The output voltage is adjusted by means of a variac at the primary winding of the output transformer. The injected current is measured and displayed by a built-in digital ammeter. We provide several output taps in order to better adapt the voltage range to the connected load's impedance. This also makes adjustment of lower currents easier, while maintaining the throughput power. The integrated digital chronometer measures the time from the activation of the output until a change is detected in an external voltage or dry contact, with 1-millisecond accuracy. Some LET versions feature a motorized variac for applications that require a greater separation between the power output and the control & regulation panel.

The output transformers are especially designed and constructed to withstand maximum currents up to more than 20,000 A depending of the selected model. A built-in thermal trip protects the unit against overheating automatically. At nominal current (indicated in each model's name), the output transformer's temperature will stabilize itself providing continuous injection on the connected load. However, higher currents can be attained for limited periods as long as the connected load (including the test leads) falls within the unit's output power. Please refer to the duty cycle chart of each model in this catalogue to select the one that fits your particular application best.

Every LET is supplied with standard test leads that suit the average applications. Shorter connections and/or wider sections may be required for applications that demand higher current levels. The nominal output current is tested on every production unit with the standard test leads short-circuited at their end terminals. Every unit includes all the required accessories, spare fuses, a user's manual and a traceable certificate of calibration of the built-in instruments. The higher power units are constructed in two bodies and equipped with wheels to facilitate transportation.

Their simple, yet heavy-duty construction, compact size, reasonable weight and ease of use make the LET range one of our best-sold family of products.



APPLICATIONS

Commissioning and testing of over current protections, circuit breakers, thermal and motor protections, measurement and protection transformers, interconnections, railway network applications etc.

COMMON CHARACTERISTICS

- Control: manual.
- 3-m / 10 ft. power supply cord.
- Built-in digital ammeter, 0.5% accuracy (not included in the LET-400).
- Built-in digital timer, 1 ms resolution (not included in LET-400).
- Automatic thermal trip protection.
- Operating temperature: 0 - 55°C / 32° - 131°F.
- Case: robust enamelled steel.
- Built to 89/336/CEE and 93/68/CEE standard directives (CE marking).

BUILT-IN TIMER*

Measuring ranges	Time: 0.001 to 99999 s. (autorange) Cycles: 000.1 to 9999.9 Cycles (reference frequency).
Accuracy	±0.003% of the reading ± 1 dig.
Time start	By activation/deactivation of the power output.
Timer stop	Selectable between activation or deactivation of the Signal Monitor.

SIGNAL MONITOR*

Dry Contact Input	Open circuit voltage: 10.2 V DC Short circuit current: 25 mA. Fuse protected.
Voltage Input	Level limits: from 5 to 250 V AC/DC Input impedance: 19 kΩ Fuse protected.

*Not included in the LET-400

LET-400/400-RD/400-RDC



LET-400



LET-400-RD



LET-400-RDC

Additionally to the 4 current taps, the LET-400-RDC features auxiliary AC and DC voltage outputs, whereas the more economical LET-400 has no measurement displays.

AC VOLTAGE RANGES/DUTY CYCLE CHART

Tap	No-load V	Continuous	ON TIME/MAXIMUM CURRENT				
			60 min.	15 min.	3 min.	1 min.	1 sec.
400 A	3.45 V	400 A	600 A	800 A	1,100 A	1,400 A	2,500 A
200 A	6.90 V	200 A	350 A	400 A	550 A	700 A	1,500 A
50 A	27.5 V	50 A	75 A	100 A	138 A	175 A	325 A
10 A	138 V	10 A	15 A	20 A	27.5 A	35 A	65 A
			15 min.	20 min.	20 min.	30 min.	

OFF (cool-down) time at 25°C / 77° F

SPECIFICATIONS

	LET-400	LET-400-RD	LET-400-RDC
AC Voltage output	N/A	N/A	240 V/4 A
DC Voltage output	N/A	N/A	350 V/4 A
Aux. DC Supply	N/A	N/A	0-50/125/250 Vdc - 1/0.5/0.25 Adc
Power	1,000 VA		
Open circuit voltage (tap)	0-138 V (10 A) / 0-27.5 V (50 A) / 0-6.9 V (200 A) / 0-3.45 V (400 A)		
Supplied test leads	2 cables, 3 meter / 10 ft. length, 95 mm ²		
Power supply	Single-phase 110/230 VAC (specify), 50-60 Hz		
Consumption	5.5A @ 220V	5.7A @ 220V	5.9A @ 220V
Dimensions (mm) (inches)	340 x 370 x 250 13.4 x 14.6 x 9.8		460 x 370 x 250 18.1 x 14.6 x 9.8
Weight (unit only)	22 Kg. / 48 lb	24 Kg. / 53 lb	25 Kg. / 55 lb

LET-1000-RD



DUTY CYCLE

Tap	No-load V	Continuous	ON TIME/MAXIMUM CURRENT				
			60 min.	15 min.	3 min.	1 min.	1 sec.
1000 A	3.20 V	1000 A	1,500 A	2,250 A	2,750 A	3,500 A	6,250 A
500 A	6.80 V	500 A	750 A	1,125 A	1,375 A	1,750 A	3,125 A
250 A	10.50 V	250 A	375 A	560 A	680 A	875 A	1,650 A
			15 min.	20 min.	20 min.	30 min.	

OFF (cool-down) time at 25°C / 77° F

SPECIFICATIONS

Power	2,000 VA
Supplied test leads	2 cables, 3 meter / 10 ft. length, 185 mm ²
Power supply	Single-phase 110/230 VAC (specify), 50-60 Hz
Consumption	12.8A @ 220V
Dimensions	380 mm x 310 mm x 540 mm / 15 in. x 12 in. x 21 in.
Weight (unit only)	69 Kg. / 152 lb.

LET-2010-RD



DUTY CYCLE

Tap	No-load V	Continuous	ON TIME/MAXIMUM CURRENT				
			60 min.	15 min.	3 min.	1 min.	1 sec.
2,000 A	4.16 V	2,000 A	2,500 A	4,000 A	5,550 A	7,000 A	13 kA
1,000 A	8.33 V	100 A	1,250 A	2,000 A	2,750 A	3,500 A	6.6 kA
500 A	16.7 V	500 A	650 A	950 A	1,375 A	1,500 A	5.6 kA
			15 min.	20 min.	20 min.	30 min.	

OFF (cool-down) time at 25°C / 77° F

SPECIFICATIONS

Power	6,000 VA
Supplied test leads	2 cables, 3 meter / 10 ft. length, 185 mm ² x 2
Power supply	Single-phase 230 VAC / 50-60 Hz
Consumption	35.7A
Dimensions	380 mm x 440 mm x 530 mm / 520 mm x 410 mm x 590 mm 15 in. x 17 in. x 20 in. / 20 in. x 16 in. x 23 in.
Weight (unit only)	50 + 111 Kg. / 110 lb. + 245 lb.



LET-2000-RD
LET-4000-RD



LET-2000-RDM
LET-4000-RDM

DUTY CYCLE

LET-2000-RD / 2000-RDM

ON TIME/MAXIMUM CURRENT							
Tap	No-load V	Continuous	60 min.	15 min.	3 min.	1 min.	1 sec.
2,000 A	2.65 V	2,000 A	2,400 A	3,600 A	4,800 A	6,000 A	10.8 kA
1,000 A	5.30 V	1,000 A	1,200 A	1,800 A	2,400 A	3,000 A	5.4 kA
500 A	10.45 V	500 A	625 A	900 A	1,250 A	1,550 A	2.8 kA
250 A	21.5 V	250 A	315 A	450 A	625 A	775 A	1.4 kA
			15 min.	20 min.	20 min.	30 min.	
OFF (cool-down) time at 25°C / 77° F							

LET-4000-RD / 4000-RDM

ON TIME/MAXIMUM CURRENT							
Tap	No-load V	Continuous	60 min.	15 min.	3 min.	1 min.	1 sec.
4,000 A	2.65 V	4,000 A	4,800 A	7,200 A	9,600 A	12,000 A	21.6 kA
2,000 A	5.30 V	2,000 A	2,400 A	3,600 A	4,800 A	6,000 A	10.8 kA
1,000 A	10.45 V	1,000 A	1,250 A	1,800 A	2,500 A	3,100 A	5.6 kA
500 A	21.5 V	500 A	630 A	900 A	1,250 A	1,550 A	2.8 kA
			15 min.	20 min.	20 min.	30 min.	
OFF (cool-down) time at 25°C / 77° F							

The LET-2000-RD / 2000-RDM / 4000-RD / 4000-RDM units are constructed in two units for easier transportation. The RDM version replaces the traditional adjustment knob with a pair of push buttons that control a motorized variac for up- and down- regulation, for applications where a greater distance between the control board and the actual power output connections is required.

SPECIFICATIONS

	LET-2000-RD	LET-2000-RDM	LET-4000-RD	LET-4000-RDM
Power	4,000 VA		8,000 VA	
Supplied test leads	2 cables, 3 meter / 10 ft. length, 185 mm ² x 2		2 cables, 3 meter / 10 ft. length, 185 mm ² x 4	
Power supply	Single-phase 230 VAC / 50-60 Hz			
Consumption	25.1A	25.1A	65A	65A
Dimensions	in mm 380 x 440 x 530 / 520 x 410 x 590	300 x 200 x 280 / 530 x 410 x 800	380 x 440 x 530 / 520 x 410 x 590	300 x 200 x 280 / 940 x 430 x 720
	in inches 15 x 17 x 20 / 20 x 16 x 23	12 x 8 x 11 / 20 x 16 x 23	15 x 17 x 20 / 20 x 16 x 23	12 x 8 x 11 / 36 x 17 x 28
Weight (unit only)	38 + 103 Kg. / 84 lb. + 228 lb.	5 + 140 Kg. / 11 lb. + 309 lb.	50 + 111 Kg. / 110 lb. + 245 lb.	5 + 250 Kg. / 11 lb. + 552 lb.

LET-4000-R



The LET-4000-R is designed for high DC current injection, used mainly in the railway industry to test extra fast relays protecting the locomotive's DC motors. The set is split into two modules: the AC Regulation and Measurement Module and the AC/DC converter. The first module transforms the three-phase AC supply into a 2 VAC, 8 kVA output, adjustable by means of a variac. The second module performs the full-wave conversion to 2 Vdc with 8 kW power. The injected DC current value is displayed by a digital ammeter, whereas the trip time is measured by a digital 5-digit chronometer with 1-ms resolution.

POWER OUTPUT

Range	V max	Measurement Accuracy	Resolution
0 - 4000 A	2 V	± 0.5% Lect ± 1 dig	1 A
0 - 5000 A*	2 V		1 A

* 1 minute

SPECIFICATIONS

Power	8,000 W
Open-circuit voltage (taps)	0-2.65 V (4000 A)
Supplied test leads	2 cables, 3 meter / 10 ft. length, 185 mm ² x 4
Power supply	3 x 380 230 V ac ± 10% 50-60 Hz
Weight (unit only)	160 + 250 Kg. / 353 lb. + 551 lb.

DISTRIBUTED BY

EuroSMC, S.A.

Polígono industrial P-29, Calle Buril, 69 28400 Collado Villalba. Madrid (Spain).
Tels: +34 91 849 89 80 Fax: +34 91 851 25 53 www.eurosmc.com e-mail: sales@eurosmc.com