Power Transducer Series

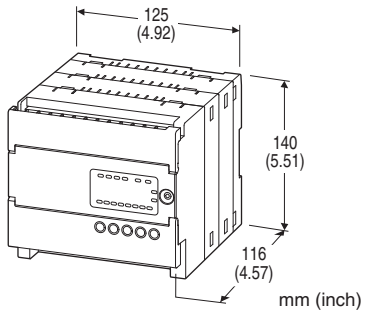
HIGH-SPEED RESPONSE MULTI POWER TRANSDUCER

Functions & Features

• 30 msec. high-speed response
• By connecting just one circuit of the power system, AC current can be measured.
• 10-point analog and 2-point energy pulse output
• Various parameters can be configured using the front buttons or the configurator.

Typical Applications

• Multi-functional power measurement in electric device or in switching boards



CE

MODEL: LSMT4F–[1][2][3]1–AD4[4]

ORDERING INFORMATION

• Code number: LSMT4F-[1][2][3]1-AD4[4]
Specify a code from below for each of [1] through [4].
(e.g. LSMT4F-12A1-AD4/Q)
• Specify the specification for option code /Q
(e.g. /C01)
• Non-specified orders will be shipped at default factory settings (No. ESU-1947). However, the power suffix code must be specified.
Measured variables can be reconfigured with front panel or PC configurator software.

[1] CONFIGURATION

1: Single phase / 2-wire and 3-wire, 3-phase / 3-wire
2: Single phase / 2-wire and 3-wire,
3-phase / 3-wire and 4-wire

[2] INPUT

1: 480 V / 1 A AC
2: 480 V / 5 A AC

[3] OUTPUT

Current
A: 4 – 20 mA DC
Voltage
4: 0 – 10 V DC
5: 0 – 5 V DC
6: 1 – 5 V DC

DISCRETE OUTPUT

1: Do 2-point

AUXILIARY POWER SUPPLY

AD4: Universal
100 – 240 V AC (Operational range 85 – 264 V, 47 – 66 Hz) /
110 – 240 V DC (Operational range 99 – 264 V,
ripple 10 %p-p max)

[4] OPTIONS

blank: none
/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to our web site.)
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating
EX-FACTORY SETTING
/SET: Preset according to the Ordering Information Sheet (No. ESU-1947)

RELATED PRODUCTS

• PC Configurator cable (model: COP-US)
• PC configurator software (model: LSCFG)
Downloadable at our web site.

GENERAL SPECIFICATIONS

Construction: Stand-alone; terminal access at the front
Degree of protection: IP 20 (Terminal block, housing)
Connection
Voltage input: M4 screw terminals (torque 1.4 N·m)
Current input: M4 screw terminals (torque 1.4 N·m)
Output: M3.5 screw terminals (torque 0.6 N·m)
Power: M4 screw terminals (torque 1.4 N·m)
Configuration
Code 1: Single phase/2-wire and 3-wire, 3-phase/3- wire balanced/unbalanced load
Code 2: Single phase/2-wire and 3-wire, 3-phase/3- wire balanced/unbalanced load, 3-phase/4- wire balanced/unbalanced load

MG CO., LTD.
www.mgco.jp

Screw terminal: Nickel-plated steel
Housing material: Flame-resistant resin (black)
Isolation: Voltage input to current input to output signal to discrete output 1 to discrete output 2 to auxiliary power supply to FE
■ **Measured variables**
Voltage: 1 – N, 2 – N, 3 – N, 1 – 2, 2 – 3, 3 – 1
Current: 1, 2, 3, N
Active / reactive / apparent power: 1, 2, 3, Σ
Power factor: 1, 2, 3, Σ
Frequency
Active energy
Reactive energy
■ **DISPLAY**:
Red LED; for setting and monitoring; signed 5 digits

INPUT SPECIFICATIONS

Frequency: 50 / 60 Hz (45 – 65 Hz)
• **Voltage Input**
Rated voltage
Line-to-line (delta voltage): 480 V
Line-neutral (phase voltage): 277 V (single phase / 2-wire and 3-wire)
Consumption VA: ≤ U_{LN}^2 / 300 kΩ / phase
Overload capacity: 200 % of rating for 10 sec., 120 % continuous
Selectable primary voltage range: 50 – 400 000 V
• **Current Input**
Rated current: 1 A or 5 A
Consumption VA: ≤ $I^2 \cdot 0.01$ Ω / phase
Overload capacity: 4000 % of rating for 1 sec., 2000 % for 4 sec., 120 % continuous
Selectable primary current range: 1 – 20 000 A
Selectable primary power range: ≤ 2 G VA
Operational range
Voltage, current, apparent power: ≤ 120 % of the rating
Active / reactive power: -120 to +120 % of the rating
Frequency: 45 – 65 Hz
Power factor: -1 to +1

OUTPUT SPECIFICATIONS

■ **DC Output**
Load resistance (output range)
4 - 20 mA DC: ≤ 600 Ω
0 - 10 V DC: ≥ 5kΩ
0 - 5 V DC: ≥ 1kΩ
1 - 5 V DC: ≥ 1kΩ
■ **Open Collector**
Energy count output
Max. rated load: 130 V DC @ 50 mA
Continuous rated load: 130 V DC @ 30 mA
Saturation voltage: 1.5 V DC
When driving an inductive load, external contact protection and noise quenching recommended.

INSTALLATION

Auxiliary Power
•**AC**: < 20 VA
•**DC**: < 9 W
Operating temperature: -10 to +55°C (14 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 700 g (1.54 lb)

PERFORMANCE in percentage of rating

Accuracy
(at 23°C ±10°C or 73.4°F ±18°F, 45 – 65 Hz)
Voltage: ±0.5 %
Percentage of 100 V at ≥ 1 V to < 100 V
Percentage of input voltage at ≥ 100 V
Current: ±0.5 %
Power: ±0.5 %
Percentage of the span of wattage as listed below
at < 100 V:
173.2 W (1 A) or 866 W (5 A) for 3 ph/3 w
100 W (1 A) or 500 W (5 A) for 1 ph/2 w
200 W (1 A) or 1000 W (5 A) for 1 ph/3 w
300 W (1 A) or 1500 W (5 A) for 3 ph/4 w
Percentage of the span of power based on input voltage and rated current (1 A or 5 A) at ≥ 100 V
PF: ±0.5 %
Frequency: ±0.2 %
Energy: ±1 % (Load current 5 - 120 % PF 1; load current 10 - 120 % PF 0.5)
Response time (input frequency ≥ 50 Hz):
• **Other than frequency:** ≤ 30 msec. (0 – 99 %)
• **Frequency:** ≤ 50 msec. (0 – 99 %)
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @ 1 minute
(Voltage input to current input to output signal to discrete output 1 to discrete output 2 to auxiliary power to FE)

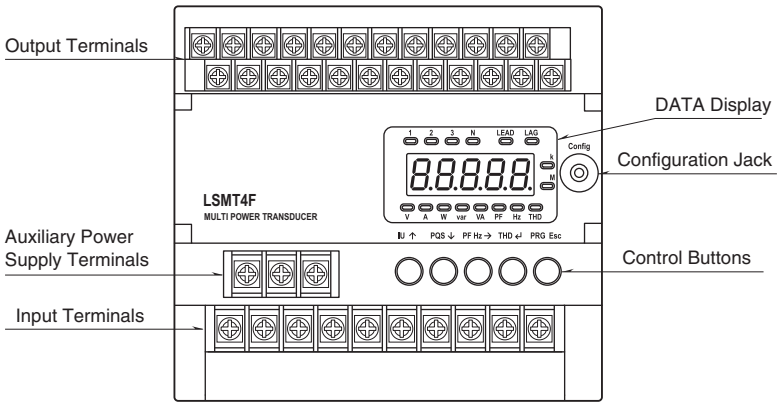
STANDARDS & APPROVALS

EU conformity:
EMC Directive
EMI EN 61000-6-4
EMS EN 61000-6-2
Low Voltage Directive
EN 61010-1
Measurement Category II (input)
Installation Category II (auxiliary power)
Pollution Degree 2

MG CO., LTD.
www.mgco.jp

Input to output: Reinforced insulation (480 V)
Output to auxiliary power: Reinforced insulation (300 V)
RoHS Directive

EXTERNAL VIEW



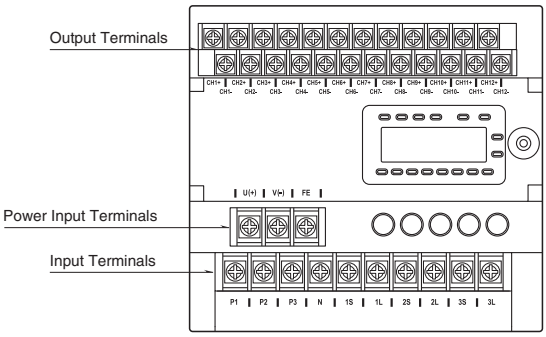
MG CO., LTD.
www.mgco.jp

TERMINAL CONNECTIONS

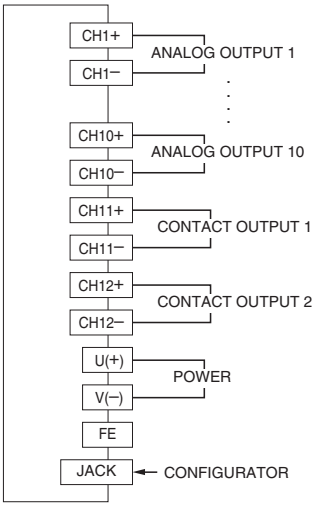
Note: In order to improve EMC performance, bond the FE terminal to ground.

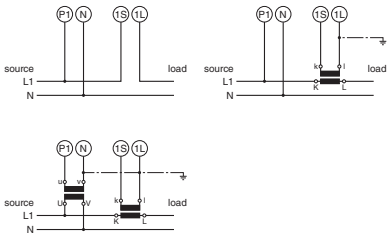
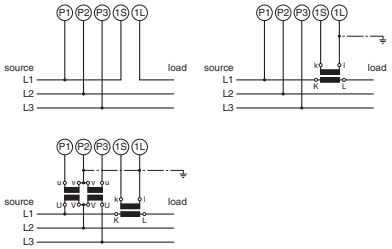
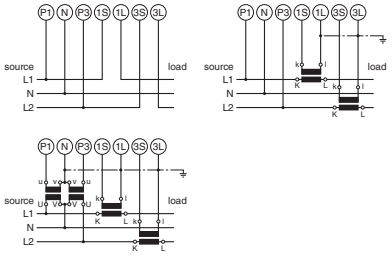
Caution: FE terminal is NOT a protective conductor terminal.

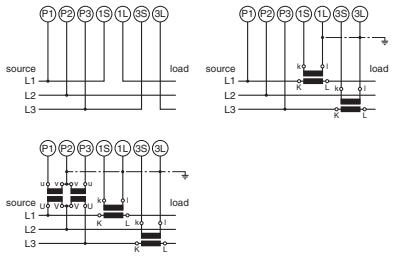
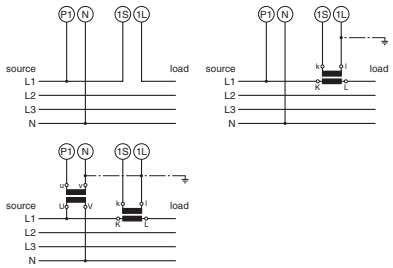
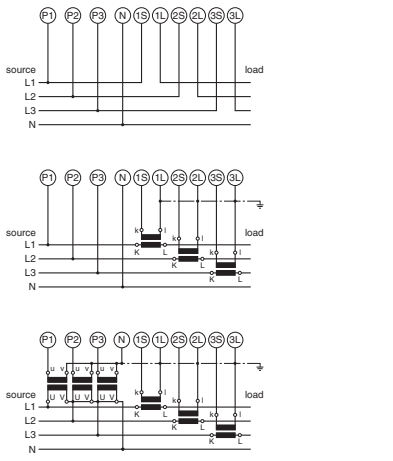
■ **TERMINAL ASSIGNMENT**



■ **ELECTRICAL CONNECTION**

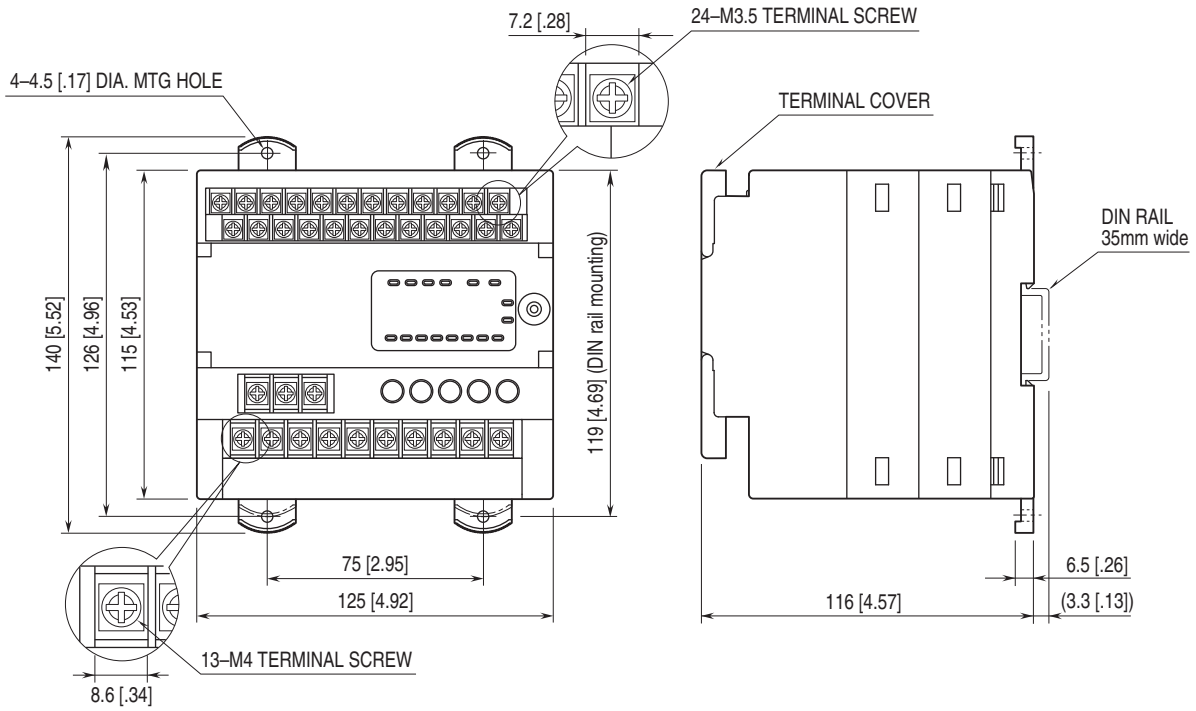


System / Application	Terminal
Single phase / 2-wire	
3-phase / 3-wire, balanced load	
Single phase / 3-wire	

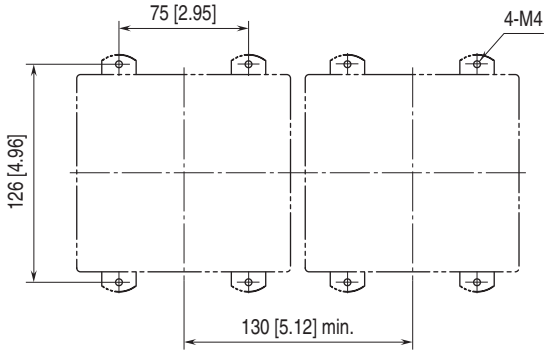
System / Application	Terminal
3-phase / 3-wire, unbalanced load	
3-phase / 4-wire, balanced load	
3-phase / 4-wire, unbalanced load	

MG CO., LTD.
www.mgco.jp

EXTERNAL DIMENSIONS unit: mm [inch]



MOUNTING REQUIREMENTS unit: mm [inch]



⚠ Specifications are subject to change without notice.

MG CO., LTD.
www.mgco.jp