CATALOGUE EXTRACT

# MULTIS

## The versatile new range of single & multifunction energy meters

2017
2018




your energy
our expertise

CRITICAL POWER | POWER CONTROL & SAFETY | ENERGY EFFICIENCY | EXPERT SERVICES

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# Selection guide

## Multifunction meters

## *MULTIS m*

Which application ? → Which functions

| | Ammeter | | | | Voltmeter |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| | *MULTIS Im15* p. 4 | *MULTIS Im15* p. 4 | *MULTIS Im35* p. 4 | *MULTIS Im35* p. 4 | *Multis Vm15* p. 4 |
| **Measurements** | | | | | |
| I | • | • | • | • | |
| U | | | | | • |
| F | | | | | |
| V | | | | | |
| P, Q, S, Ea, ER, PF | | | | | |
| Hour run | | | | | |
| Import/export (Active energy & reactive energy) | | | | | |
| THD (V & I) | | | | | |
| AC network | LV single phase | LV single phase | LV three phase | LV three phase | LV single phase |
| Measurement range between phases | | | | | |
| Accuracy | 1% | 1% | 1% | 1% | 1% |
| CT secondary programable | with 1 A secondary | with 5 A secondary | with 1 A secondary | with 5 A secondary | |
| PT programable | | | | | • |
| Max demand indication | | | | | |
| **Communication** | | | | | |
| Type | | | | | |
| **Auxiliary power supply** | | | | | |
| Self supplied | no | no | no | no | no |
| Voltage | 40 … 300 VAC/DC (+/-5%) | 40 … 300 VAC/DC (+/-5%) | 40 … 300 VAC/DC (+/-5%) | 40 … 300 VAC/DC (+/-5%) | 40 … 300 VAC/DC (+/-5%) |
| Frequency | 45 … 65 Hz | 45 … 65 Hz | 45 … 65 Hz | 45 … 65 Hz | 45 … 65 Hz |
| Consumption | < 3 VA | < 3 VA | < 3 VA | < 3 VA | < 3 VA |
| **Case** | | | | | |
| Type | panel mounting | panel mounting | panel mounting | panel mounting | panel mounting |
| Dimensions (H x W x D) (mm) | 96 x 96 x 27 | 96 x 96 x 27 | 96 x 96 x 27 | 96 x 96 x 27 | 96 x 96 x 27 |
| Panel cut out dimensions (H x W) (mm) | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 |
| Weight (Without Packing Box) | 0.31 kg | 0.31 kg | 0.31 kg | 0.31 kg | 0.31 kg |
| Front protection rating | IP50 | IP50 | IP50 | IP50 | IP50 |
| **Operating conditions** | | | | | |
| Operating temperature | 0 … +50°C | 0 … +50°C | 0 … +50°C | 0 … +50°C | 0 … +50°C |
| **Reference** | | | | | |
| Multis | 192J **9025** | 192J **9024** | 192J **9027** | 192J **9026** | 192J **9014** |



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Which dimensions ?

Communication or pulse output ?

| | Voltmeter | Multifunction meter | | | | Dual source | Single source |
|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |
| | *MULTIS Vm35* p. 4 | *MULTIS Lm25* p. 8 | *MULTIS Lm46* p. 10 | *MULTIS Lm55* p. 12 | *MULTIS Lm56* p. 12 | *MULTIS Lm35* p. 6 | *MULTIS Lm42* p. 6 |
| | | • | • | • | • | • | via COM |
| | • | • | • | • | • | • | via COM |
| | | • | • | • | • | • | via COM |
| | • | • | • | • | • | • | via COM |
| | | | • | • | • | • | +/- Ea |
| | | • | • | • | • | • | via COM |
| | | | • | • | • | • | via COM |
| | | | | • | • | • | via COM |
| | LV three phase | LV three phase | LV three phase + neutral | LV or HV three phase + neutral | LV or HV three phase + neutral | 1 phase 2 wire / 3 phase 3 wire / 3 phase 4 wire | 1 phase 2 wire / 3 phase 3 wire / 3 phase 4 wire |
| | | | | 110 … 440 VAC | 110 … 440 VAC | 55 … 498 V LL | 55 … 498 V LL |
| | 1% | 1% | 1% | 1% | 0.50% | Class 1 | Class 1 |
| | | 1 A or 5 A | 1 A or 5 A | 1 A or 5 A | 1 A or 5 A | 1 A or 5 A | 1 A or 5 A |
| | • | • | • | • | • | 110 V L-L / 230 V L-L and 415 V L-L | 110 V L-L / 230 V L-L and 415 V L-L |
| | | | For current, KVA and KW | For current, KVA and KW | For current, KVA and KW | For current, KVA and KW | For current, KVA and KW |
| | | | MODBUS RS485 | MODBUS RS485 | MODBUS RS485 | MODBUS RS485 | MODBUS RS485 |
| | no | no | no | no | no | yes | yes |
| | 40...300 VAC/DC (+/-5%) | 40...300 VAC/DC (+/-5%) | 40...300 VAC/DC (+/-5%) | 100...250 VAC/DC+/-10%) | 100...250 VAC/DC+/-10%) | 60 V – 300 V AC / DC | 60 V – 300 V AC / DC |
| | 45 … 65 Hz | 45 … 65 Hz | 45 … 65 Hz | 45 … 65 Hz | 45 … 65 Hz | 50 Hz / 60 Hz | 50 Hz / 60 Hz |
| | < 3 VA | < 3 VA | < 4 VA | < 4 VA | < 4 VA | < 4 VA | < 4 VA |
| | panel mounting | panel mounting | panel mounting | panel mounting | panel mounting | panel mounting | panel mounting |
| | 96 x 96 x 27 | 96 x 96 x 55 | 96 x 96 x 55 | 96 x 96 x 80 | 96 x 96 x 80 | 96 x 96 x 55 | 96 x 96 x 80 |
| | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 | 92 + 0.8 x 92 + 0.8 |
| | 0.31 kg | 0.32 kg | 0.32 kg | 0.70 kg | 0.70 kg | 0.32 kg | 0.32 kg |
| | IP50 | IP50 | IP50 | IP54 | IP54 | IP54 | IP54 |
| | 0 … +50°C | 0 … +50°C | 0 … +50°C | 0 … +50°C | 0 … +50°C | -10 … +55°C | -10 … +55°C |
| | 192J **9015** | 192J **9101** | 192J **9112** | 192J **9200** | 192J **9201** | 192J **9114** | 192J **9113** |

Single-circuit metering, measurement & analysis

# MULTIS Im15/Im35/Vm15/Vm35

## Measurement devices

one or three phases - current, voltage measurement - 96 x 96 mm



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### Function

The single and three phase Socomec MULTIS m range, 96 x 96 mm ensures an accurate measurement of electrical parameters I and V.

### Applications

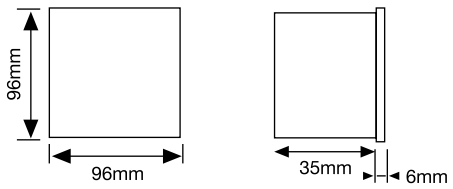
- The **MULTIS Im15** is a single phase digital ammeter for AC network.
- The **MULTIS Im35** is a 3 phase digital ammeter for AC network.
- The **MULTIS Vm15** is a single phase digital voltmeter for AC network.
- The **MULTIS Vm35** is a 3 phase digital voltmeter for AC network.

### Advantages

- Made of sturdy polycarbonate housing.
- Resistant to high shock level and adapted for working in a high pollution environment.
- Adapted for 3 phase 3 wire or 3 phase 4 wire network types.
- Bright LED 1 line, 4 digit, 14 mm high display.
- On site selection of auto scroll for Im35.

## Ammeter MULTIS Im15 / Im35

### Dimensions




| | |
|---|---|
| Type | panel mounting |
| Dimensions W x H x D | 96 x 96 x 40 mm |
| Panel cut out dimensions (H x W) | 92+0.8 mm x 92+0.8 mm |
| Front protection rating | IP50 |
| Weight | 0.31 kg |

### Electrical characteristics

| | |
|---|---|
| **Measurements** | |
| AC network | LV single + Three phase |
| Current range | 10...120% of rated value |
| Frequency | 45 ... 65Hz |
| Accuracy | 1% |
| Nominal input current range | 1A or 5A AC RMS (to be specified while order) |
| **Auxiliary power supply** | |
| AUX supply | 40 ... 300 V AC/DC (+5%) |
| Frequency | 45 ... 65 Hz |
| VA burden | 3 VA |
| **Operating conditions** | |
| Operating temperature | 0 ... +50 °C |



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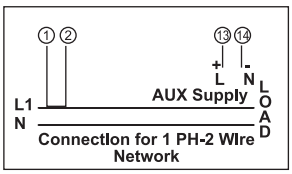
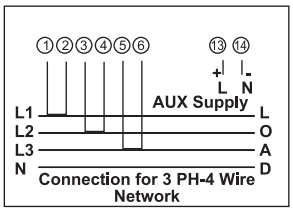
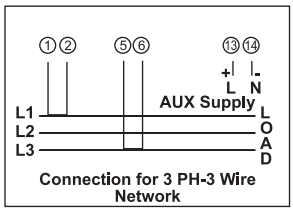
## Connection



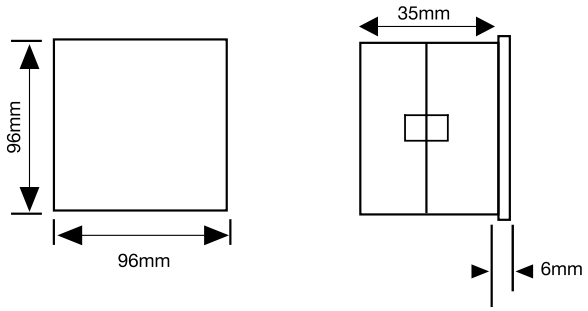




## References

| Auxiliary supply | Frequency | CT | MULTIS Im15 Reference | MULTIS Im35 Reference |
|---|---|---|---|---|
| 40 … 300 VAC/DC | 45 … 60 Hz | 1 A | 192J **9025** | 192J **9027** |
| | | 5 A | 192J **9024** | 192J **9026** |

# Voltmeter MULTIS Vm15 / Vm35

## Dimensions

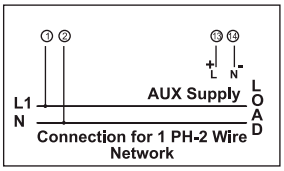


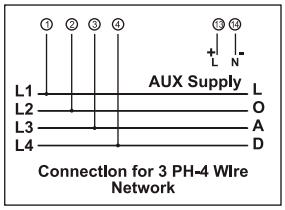

| | |
|---|---|
| Type | panel mounting |
| Dimensions W x H x D | 96 x 96 x 40 mm |
| Panel cut out dimensions (H x W) | 92+0.8 mm x 92+0.8 mm |
| Front protection rating | IP50 |
| Weight | 0.31 kg |

## Electrical characteristics

| | |
|---|---|
| **Measurements** | |
| AC network | LV single + Three phase |
| Voltage range | 57… 600 VAC |
| Accuracy | ± 1% |
| Voltage overload | 2X rated value for 1s, repeated 10 times at 10s interval |
| **Auxiliary power supply** | |
| AUX supply | 40 … 300 V AC/DC (+5%) |
| Frequency | 45 … 65 Hz |
| VA burden | 3 VA approx |
| **Operating conditions** | |
| Operating temperature | 0 … +50 °C |

## Connection




## References

| Auxiliary supply | Frequency | MULTIS Vm15 Reference | MULTIS Vm35 Reference |
|---|---|---|---|
| 40 … 300 VAC | 45 … 65 Hz | 192J **9014** | 192J **9015** |

# MULTIS Lm35 / Lm42

## Energy meters with port

three phases - dual source and single source - 96 x 96 mm

*MULTIS Lm35*

*MULTIS Lm42*

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### Function

**MULTIS Lm35** & **Lm42** are new versatile range of dual and single source energy meters with display of all energy and power parameters (only in Lm42, all the values except energy are accessed via RS485 port).

### Applications

- MULTIS Lm35 is an LCD digital panel meter, with dual source energy metering with a 96 x 96 mm display and built in RS485 port for measurement of utility mains as well as DG emergency source power consumption, with programmable CT PT, encompassing all energy and power parameters, across 4 quadrants. MULTIS Lm42 is only for mains utility source energy measurements, with the other parameters via RS485 port

### Advantages

- Made of sturdy polycarbonate housing.
- Resistant to high shock level and adapted for working in a high pollution environment.

- Multis Lm35 a highly adapted feature rich dual source, energy metering device, incorporating various power monitoring parameters.
- At a time upto 3 parameters are displayed on the LCD screen, balance in scroll mode.
- There are additional indications for the max demand threshold for power and energy.
- Multis Lm42 is an energy measurement device, with key power parameters accessible through the integrated RS485 port.
- Lm42 is designed for 4 quadrant energy measurement.



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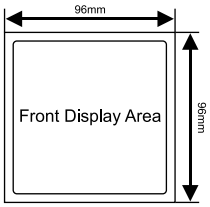
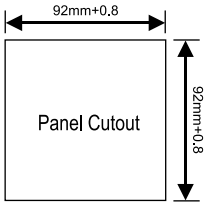
## Dimensions



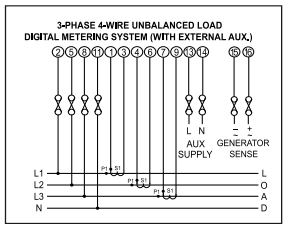



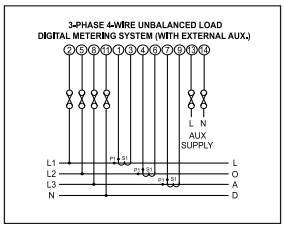

| | |
|---|---|
| Type | panel mounting |
| Dimensions W x H x D | 96 x 96 mm |
| Panel cut out dimensions (H x W) | 92+0.8 mm x 92+0.8 mm |
| Front protection rating | IP50 |
| Weight | 0.32 kg |

## Electrical characteristics

| | |
|---|---|
| **Auxiliary power supply** | |
| Voltage | 60 … 300 V AC/DC |
| Frequency | 50 … 60 Hz |
| Consumption | 6 VA with RS485 port |
| **Operating conditions** | |
| Operating Temperature | -10 … +55 °C |

## Connection




## Measurement

| | |
|---|---|
| **Current measurements** | |
| System CT secondary | 1 A & 5 A |
| System CT primary | from 1 A up to 9999 A |
| Accuracy | ± 1.0% |
| **Voltage measurements** | |
| Nominal input voltage | P-N > 250V, P-P > 500V |
| System PT secondary | 110V L-L / 230V L-L / 415V L-L |
| System PT primary | 110V L-L / 230V L-L / 415V L-L |
| Max. continuous input voltage | + 20% of rated value |
| Accuracy | ± 1.0% |
| **Frequency measurement** | |
| Energy accuracy | active |
| Reactive energy | ± 1.0% |

## Electrical parameter

| **Lm35 Dual Source meter** |
|---|
| KWh, KVARh, KVAh |
| KW, KVAR, KVA |
| PF |
| Demand: for current, kVA and kW (including max demand values) |
| On hrs, run hrs, interuppts, rpm, old values |
| Current |
| Voltage |
| Neutral current |
| THD V&I |
| Reversal of phase |
| Reversal of current |
| Phase absence indication |

| **Lm42(1) Single Source meter** |
|---|
| KWh, KVARh, KVAh, |
| KW, KVAR, KVA |
| 4 quadrant import export |
| PF |
| Demand: for current, kVA and kW (including max demand values) |
| On hrs, run hrs, interuppts, rpm, old values |
| Current |
| THD V&I |
| Voltage |
| Neutral current |

*(1) Except kWH rest all parameters is possible to observe via RS485.*

## References

| **Auxiliary supply** | **Frequency** | **MULTIS Lm35 Reference** | **MULTIS Lm42 Reference** |
|---|---|---|---|
| 60....300 VAC/DC | 45 … 65 Hz | 192J **9114** | 192J **9113** |



# MULTIS Lm25

## Measurement devices

three phases - VAF meter - 96 x 96 mm


multi_083_a

*MULTIS Lm25*

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## Function

The three phase Socomec Multis Lm25 range, 96 x 96 mm ensures an accurate measurement of electrical parameters I, V and Hz.

## Applications

- **MULTIS Lm25** is a digital LV and HV three phase measurement device. It displays three phase voltage / current / frequency.

## Advantages

- Made of sturdy polycarbonate housing.
- Resistant to high shock level and adapted for working in a high pollution environment.
- Suitable for 3 phase 3 wire or 3 phase 4 wire network types.
- Both CT as well as PT are programmable.
- The measurement chain comprises system current, voltage and frequency, with min and max values.
- Both line as well as phase voltages are displayed, additional RPM and run hrs also get displayed.
- Advanced features include password protection and a high overload withstand capability
- Bright LED display spans 3 line, 4 digits, 14 mm high.



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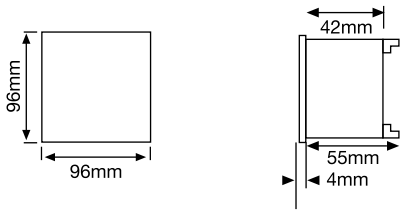
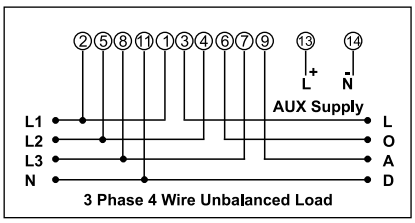
## Dimensions




| | |
|---|---|
| Type | panel mounting |
| Dimensions W x H x D | 96 x 96 x 46 mm |
| Panel cut out dimensions (H x W) | 92+0.8 mm x 92+0.8 mm |
| Front protection rating | IP50 |
| Weight | 0.32 kg |

## Connection




## Electrical characteristics

| | |
|---|---|
| **Auxiliary power supply** | |
| AUX supply | 40 V … 300 VAC-DC (±5%) |
| Frequency | 45 … 65 Hz |
| VA burden | 3 VA |
| **Operating conditions** | |
| Operating temperature | 0 … +50 °C |

## Measurement

| | |
|---|---|
| **Current measurements** | |
| Nominal input current | 5 A AC |
| System CT secondary | 1 A & 5 A |
| System CT primary | from 1 A up to 9999 A |
| Max. continuous input current | 120 % of rated value |
| Accuracy | ± 1.0 % |
| **Voltage measurements** | |
| Nominal input voltage | PN-290 V , PP-500 V |
| System PT secondary | 100V LL to 500V LL |
| System PT primary | 100V LL to 692K LL |
| Max. continuous input voltage | 120% of rated value |
| Accuracy | ± 1.0% |
| **Frequency measurement** | |
| Frequency range | 45 … 65 Hz |
| Accuracy | ± 0.5 % |

## References

| Auxiliary supply | Frequency | MULTIS Lm25 Reference |
|---|---|---|
| 40 … 300 VAC | 45 … 65 Hz | 192J **9101** |



# MULTIS Lm46

## Measurement devices

three phases - all electrical parameters - 96 x 96 mm


multi_084_a

*MULTIS Lm46*

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## Function

The Socomec MULTIS Lm46 range, 96 x 96 mm ensures an accurate measurement of all electrical parameters I, V, Hz, P, Q, S & E.

## Applications

- **MULTIS Lm46** is a digital three phase multifunction meter for measuring electrical value like voltage, current, energy with on site programmable functions of CT / PT, RS485 modbus Communication.

## Advantages

- Made of sturdy polycarbonate housing.
- Resistant to high shock level and adapted for working in a high pollution environment.
- Suitable for 3 phase 3 wire or 3 phase 4 wire network types.
- Both CT as well as PT are programmable.
- A very comprehensive parameter profile for energy measurement and power monitoring, that includes phase angle for current and voltage.
- Active, reactive as well as apparent powers are displayed.
- RPM, run hrs, ON hrs and interrupt are indicated.
- Key demand parameters are measured, including current, KVA, KW with nominal as well as maximum values.
- Characterized by high overload withstand, password protection.
- With annunciation of -ve sign display for the active power in 2nd or 3rd quadrant.



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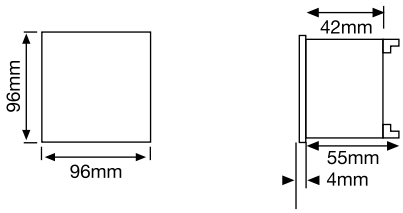
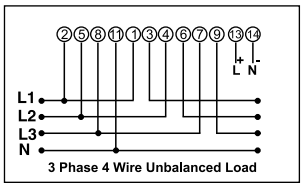
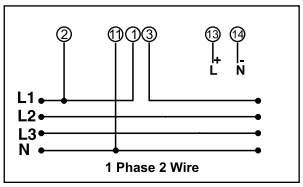
## Dimensions




| | |
|---|---|
| Type | panel mounting |
| Dimensions W x H x D | 96 x 96 x 46 mm |
| Font IP | IP50 |
| Rear IP | IP20 |
| Weight | 0.32 kg |

## Connection




## Electrical characteristics

| | |
|---|---|
| **Auxiliary power supply** | |
| Voltage | 40 V … 300 VAC-DC (±5%) |
| Frequency | 45 … 65 Hz |
| Consumption | < 4 VA approx |
| **Operating conditions** | |
| Operating temperature | 0 … +50 °C |

## Measurement

| | |
|---|---|
| **Current measurements** | |
| System CT secondary | 1 A & 5 A |
| System CT primary | from 1 A up to 9999 A |
| Max. continuous input current | 120 % of rated value |
| Accuracy | ± 1.0 % |
| **Voltage measurements** | |
| Nominal input voltage | PN-290 V , PP-500 V |
| System PT secondary | 100V LL to 500V LL |
| System PT primary | 100V LL to 692K LL |
| Max. continuous input voltage | 120% of rated value |
| Accuracy | ± 1.0% |
| **Frequency measurement** | |
| Frequency range | 45 … 65 Hz |
| Accuracy | ± 0.5 % |
| **Energy accuracy** | |
| Active energy | ± 1.0% |
| Reactive energy | ± 1.0% |

## References

| Auxiliary supply | Frequency | MULTIS Lm46 Reference |
|---|---|---|
| 40 ... 300 VAC | 45 … 65 Hz | 192J **9112** |



# MULTIS Lm55 / Lm56

## Measurement devices

three phases - all electrical parameters - 96 x 96 mm


MULTIS Lm55


MULTIS Lm56

multi_085_a multi_086_a

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### Function

The Socomec MULTIS range is a three phase multifunction measurement device.
It measures three phase voltages, current, power, frequency, PF, THD with max demand and Import / Export feature. In addition it also has RS485 communication port.

### Applications

- **MULTIS Lm55** & **Lm 56** are digital LV and HV three phase measurement device. They display the most important electrical values needed in an energy efficiency process.

### Advantages

- Made of sturdy polycarbonate housing.
- Resistant to high shock level and adapted for working in a high pollution environment.
- Suitable for 3 phase 3 wire or 3 phase 4 wire network types.
- Both CT as well as PT are programmable.
- A very comprehensive parameter profile for energy measurement and power monitoring, that includes phase angle for current and voltage.
- Active, reactive as well as apparent powers are displayed.
- RPM, run hrs, ON hrs and interrupt are indicated.
- Key demand parameters are measured, including current, KVA, KW with nominal as well as maximum values.
- Characterized by high overload withstand, password protection.
- With annunciation of -ve sign display for the active power in 2nd or 3rd quadrant.
- Dedicated indication for phase rotation error and for the correct phase sequence.
- Versions for CI-1 as well as CI-0.5 class of accuracy.
- Power monitoring via THD on current and voltage.



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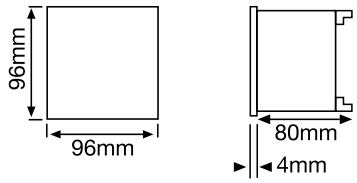
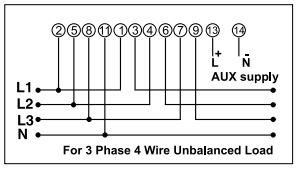
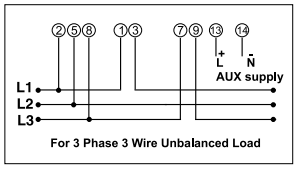
## Dimensions

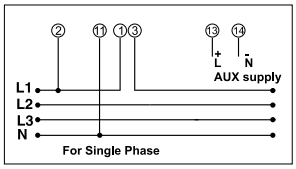



| | |
|---|---|
| Type | panel mounting |
| Dimensions W x H x D | 96 x 96 x 80 mm |
| Font IP | IP54 |
| Rear IP | IP20 |
| Weight | 0.62 kg |

## Connection




## MULTIS Lm55

### Electrical characteristics

| | |
|---|---|
| **Auxiliary power supply** | |
| Voltage | 100V … 250 VAC - DC (± 10% ) |
| Frequency | 45 … 66 Hz |
| Consumption | < 4 VA approx |
| **Operating conditions** | |
| Operating temperature | 0 … +50 °C |

### Measurement

| | |
|---|---|
| **Current measurements** | |
| System CT secondary | 1 A & 5 A |
| System CT primary | from 1 A up to 9999 A |
| Max. continuous input current | 120 % of rated value |
| Accuracy | ± 1.0 % |
| **Voltage measurements** | |
| Nominal input voltage | PN-290 V , PP-500 V |
| System PT secondary | 100V LL to 500V LL |
| System PT primary | 100V LL to 692K LL |
| Max. continuous input voltage | 120% of rated value |
| Accuracy | ± 1.0% |
| **Frequency measurement** | |
| Frequency range | 40 …70 Hz |
| Accuracy | ± 0.2 % |
| **Energy accuracy** | |
| Active energy | ± 1.0% |
| Reactive energy | ± 1.0% |
| Apparent energy | ± 1.0% |
| Active / reactive / apparent power | ± 0.5% |
| Total harmonic distortion | ± 1.0% |

## MULTIS Lm56

### Electrical characteristics

| | |
|---|---|
| **Auxiliary power supply** | |
| Voltage | 100V … 250 VAC - DC (± 10% ) |
| Frequency | 45 … 66 Hz |
| Consumption | < 4 VA approx |
| **Operating conditions** | |
| Operating temperature | 0 … +50 °C |

### Measurement

| | |
|---|---|
| **Current measurements** | |
| System CT secondary | 1 A & 5 A |
| System CT primary | from 1 A up to 9999 A |
| Max. continuous input current | 120 % of rated value |
| Accuracy | ± 1.0 % |
| **Voltage measurements** | |
| Nominal input voltage | PN-290 V , PP-500 V |
| System PT secondary | 100V LL to 500V LL |
| System PT primary | 100V LL to 692K LL |
| Max. continuous input voltage | 120% of rated value |
| Accuracy | ± 1.0% |
| **Frequency measurement** | |
| Frequency range | 40 …70 Hz |
| Accuracy | ± 0.2 % |
| **Energy accuracy** | |
| Active energy | ± 0.5% |
| Reactive energy | ± 0.5% |
| Apparent energy | ± 0.5% |
| Active / reactive / apparent power | ± 0.5% |
| Total harmonic distortion | ± 1.0% |

## References

| Auxiliary supply | Frequency | MULTIS Lm55 Reference | MULTIS Lm56 Reference |
|---|---|---|---|
| 40 ... 300 VAC | 45 … 65 Hz | 192J **9200** | 192J **9201** |

Single-circuit metering, measurement & analysis

# MULTIS L50

## Digital panel meter

three phases - via CT up to 6000 A dimensions 96 x 96 mm

new


multi_076_a_1_cat.eps

*MULTIS L50*

### The solution for

- Industry
- Infrastructure

### Strong points

- Large backlit LCD display
- Direct display of multimeasurement and metering values
- RS485 MODBUS communication
- Inputs/Output for control/ command ou pulses

### Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-23 class 2

IEC

## Function

The **MULTIS L50** is a panel mounted digital meter displaying multi-measurement and energy values directly on its large backlit LCD display. It is designed for utilisation on three-phase or single-phase networks with connection via CT and is suitable for applications of up to 6000 A. The product can be configured by the user via the keypad and the display.

## Advantages

**Easy to use**

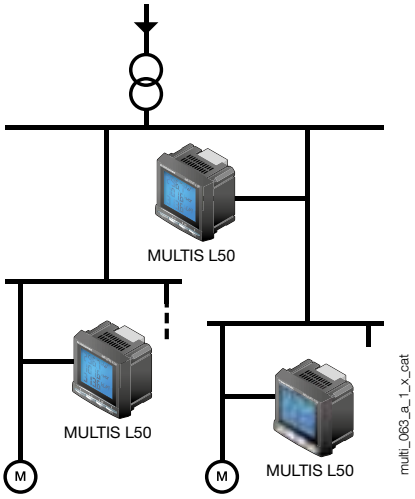
Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, MULTIS L50 provide clear readings and are easy to use.

They directly display a number of multi-measurement and metering values.

**Advanced functionalities**

The MULTIS L50 offers input/output functions as standard and has a pulse output or RS485 MODBUS communication output.

## Principle diagram




multi_063_a_1_x_cat

## Functions

**Multi-measurement**
- Currents
  - instantaneous: I1, I2, I3, In
  - maximum average: I1, I2, I3, In
- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - maximum average: ΣP, ΣQ, ΣS
  - unbalance: U unb
- Power factors
  - instantaneous: 3PF, Σ

**Metering**
- Active energy: ± kWh
- Reactive energy: ± kvarh
- Hours:

**Harmonic analysis**
- Total harmonic distortion (level 51)
  - Currents: thd I1, thd I2, thd I3
  - Phase-to-neutral voltage: thd V1, thd V2, thd V3
  - Phase-to-phase voltage: thd U12, thd U23, thd U31

**Communications(1)**

RS485 with MODBUS protocol

**Output**
- Remote command of device
- Pulse report

**Inputs**
- Remote status device

*(1) Available as an option (see the following pages).*



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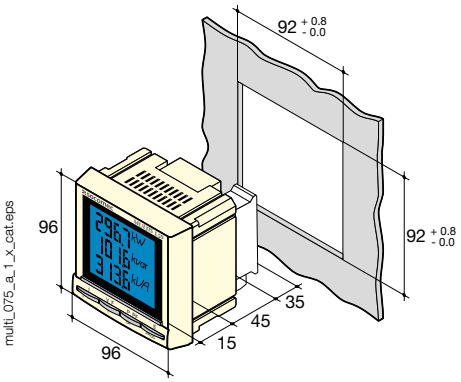
## Front panel


1. Backlit LCD display.
2. Direct access key for currents (instantaneous and max. values), current THD.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive, and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies, hour meter and programming menu.

## Case




| | |
|---|---|
| Type | panel mounting |
| Dimensions W x H x D | 96 x 96 x 60 mm |
| Case degree of protection | IP30 |
| Front degree of protection | IP52 |
| Display type | backlit LCD display |
| Terminal block type | fixed or plug-in |
| Voltage and other connection cross-section | 0.2 … 2.5 mm$^2$ |
| Current connection cross-section | 0.5 … 6 mm$^2$ |
| Weight | 400 g |

## Plug-in modules

**MULTIS L50**



### 1 Output

1 output assignable to:
- Pulses: configurable (type, weight, duration) in kWh or kvarh.
- Remote command of device.


### Communication

RS485 link with JBUS / MODBUS protocol
(speed up to 38400 bauds)


### 3 inputs, 1 output

3 inputs assignable to:
- Remote status device.

1 output assignable to:
- Pulses: configurable (type, weight, duration) in kWh or kvarh.
- Remote command of device.

## Accessories

**Current transformers (contact us)**



**IP65 protection**


**Panel mounting kit for a 144 x 96 mm cut-out**

# MULTIS L50

Digital panel meter

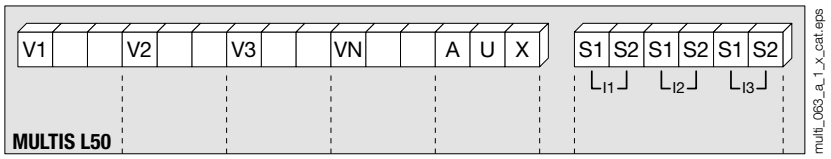
three phases - via CT up to 6000 A dimensions 96 x 96 mm

## Electrical characteristics

| | |
|---|---|
| **Current measurement (TRMS)** | |
| Via CT primary | 9 999 A |
| Via CT secondary | 5 A |
| Measurement range | 0 … 11 kA |
| Input consumption | 0.6 VA |
| Measurement updating period | 1 s |
| Accuracy | 1% |
| Permanent overload | 6 A |
| Intermittent overload | 10 $I_n$ for 1 s |
| **Voltage measurements (TRMS)** | |
| Direct measurement between phases | 50 … 500 VAC |
| Direct measurement between phase and neutral | 28 … 289 VAC |
| Input consumption | ≤ 0.1 VA |
| Measurement updating period | 1 s |
| Accuracy | 1% |
| Permanent overload | 800 VAC |
| **Power measurement** | |
| Measurement updating period | 1 s |
| Accuracy | 1% |
| **Power factor measurement** | |
| Measurement updating period | 1 s |
| Accuracy | 1% |
| **Frequency measurement** | |
| Measurement range | 45 … 65 Hz |
| Measurement updating period | 1 s |
| Accuracy | 0.1 % |

| | |
|---|---|
| **Energy accuracy** | |
| Active (according to IEC 62053-21) | Class 1 |
| Reactive (according to IEC 62053-23) | Class 2 |
| **Auxiliary power supply** | |
| Alternating voltage | 110 … 250 VAC |
| AC tolerance | ± 10 % |
| Direct voltage | 120 … 250 VDC |
| DC tolerance | ± 10% |
| Frequency | 50 / 60 Hz |
| Consumption | 10 VA |
| **Pulse or alarm output** | |
| Number | 1 |
| Type | 100 VDC - 0.5 A - 10 VA |
| Max. number of operations | ≤ $10^8$ |
| **Inputs** | |
| Number | 3 |
| Power supply | 10 … 30 VDC |
| Minimum signal width | 10 ms |
| Minimum duration between 2 pulses | 18 ms |
| Type | Phototransistors |
| **Communication** | |
| Link | RS485 |
| Type | 2 … 3 half duplex wires |
| Protocol | MODBUS RTU |
| MODBUS® speed | 1400 … 38400 bauds |
| **Operating conditions** | |
| Operating temperature | - 10 … + 55 °C |
| Storage temperature | - 20 … + 85 °C |
| Relative humidity | 95 % |

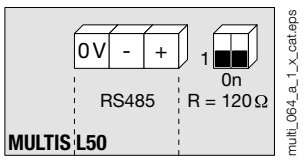
## Terminals




**S1 - S2:** current inputs.

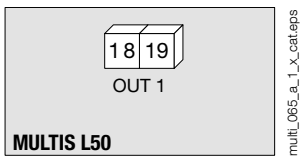
**AUX:** auxiliary power supply $U_s$.
**V1, V2, V3 & VN:** voltage inputs.

**Communication module**



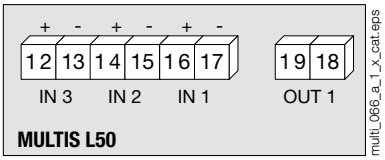

**RS485 link.**
**R = 120 Ω:** selectable internal resistance for RS485 end of line termination.

**Output or alarm module**




**18 - 19:** output n°1

**3 inputs, 1 output module**



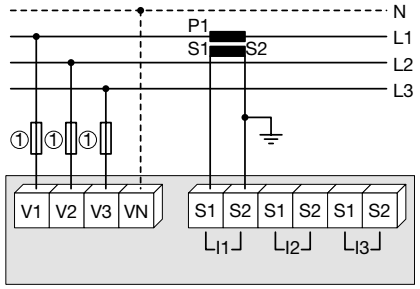

## Connection

**Recommendation:**

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.

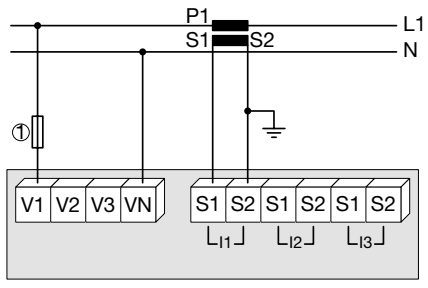
### Low voltage balanced network

**3/4 wires with 1 CT**



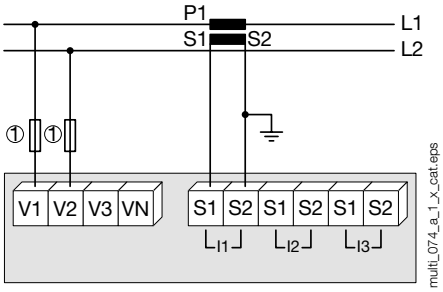

Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
*1. Fuses 0.5 A gG / 0.5 A class CC.*

**Single-phase**




*1. Fuses 0.5 A gG / 0.5 A class CC.*

**Two-phase**




*1. Fuses 0.5 A gG / 0.5 A class CC.*



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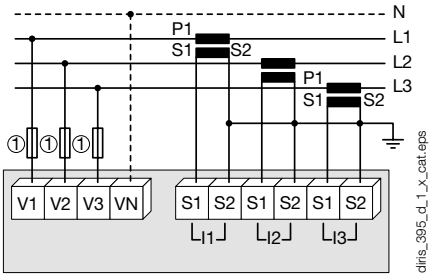
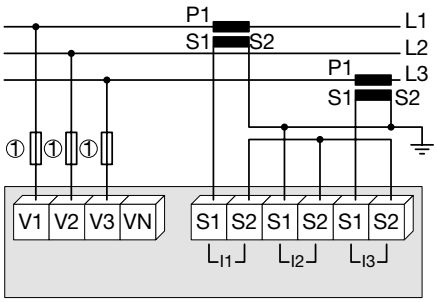
## Low voltage unbalanced network

### 3/4 wires with 3 CTs




*1. Fuses 0.5 A gG / 0.5 A class CC.*

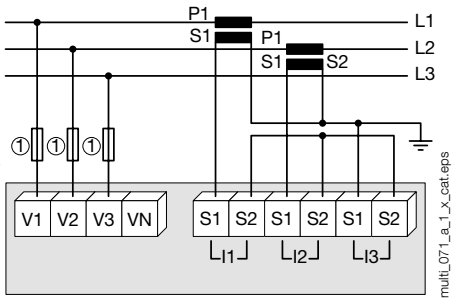
### 3 wires with 2 CTs




Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

*1. Fuses 0.5 A gG / 0.5 A class CC.*

### 3 wires with 2 CTs

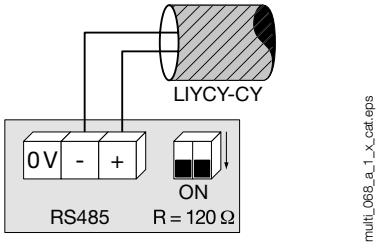



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

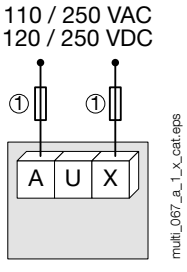
*1. Fuses 0.5 A gG / 0.5 A class CC.*

## Additional information

### Communication via RS485 link




### AC & DC auxiliary power supply




*1. Fuses 0.5 A gG / 0.5 A class CC.*

## References

| **Basic device** | | **MULTIS L50 Reference** |
|---|---|---|
| MULTIS L50 | | 192J **9120** |
| **Optional plug-in modules** | | **Reference** |
| 1 output | | 4825 **0080** |
| RS485 MODBUS® communication | | 4825 **0082** |
| 3 inputs, 1 output | | 4825 **0083** |
| **Accessories** | | |
| **Description of accessories** | **To be ordered in multiples of** | **Reference** |
| IP65 protection | 1 | 4825 **0089** |
| Panel mounting kit for a 144 x 96 mm cut-out | 1 | 4825 **0088** |
| Fuse holder for the protection of voltage inputs (type RM) 3 poles | 4 | 5601 **0018** |
| Fuse holder for the protection of the auxiliary supply (type RM) 1 pole + neutral | 6 | 5601 **0017** |
| Fuse type gG 10x38 0.5 A | 10 | 6012 **0000** |
| Ferrite to be associated with communication modules | 1 | 4899 **0011** |
| Current transformer range | 1 | Contact us |

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