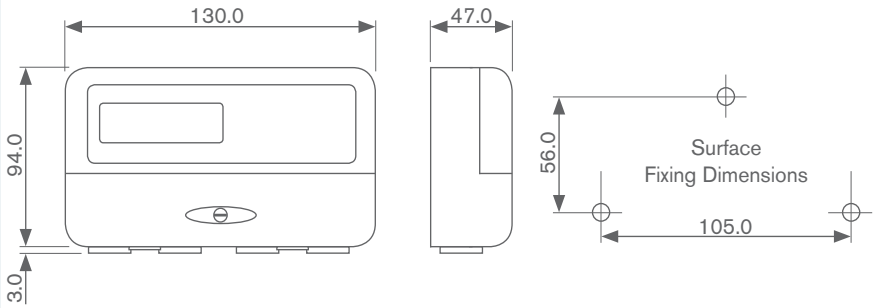
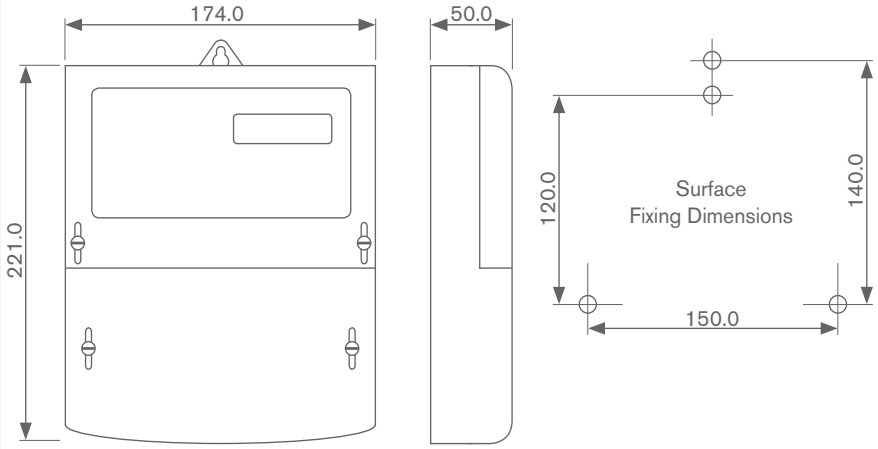
Dimensions

A100C

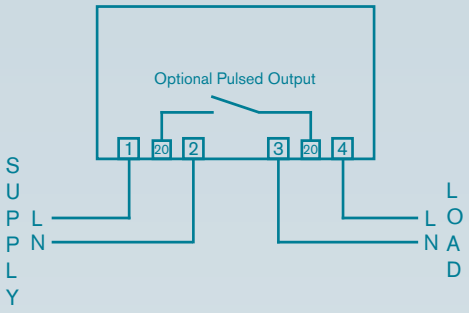


A1100

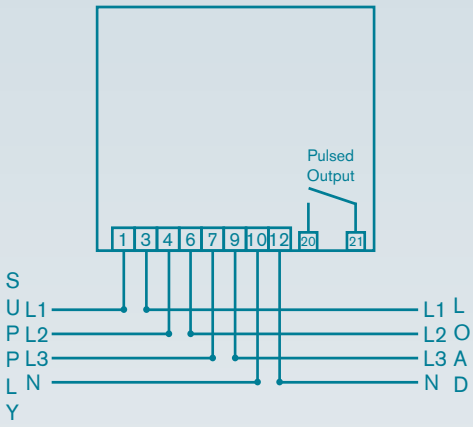


All dimensions in mm

A100C



A1100



Ordering information

Code	Meter Type	Options
A100C	Single Phase 100A kWh Meter	–
A1100	Three Phase 100A kWh Meter	–
P	–	Pulsed Output (Opto-isolated)
Example	**A100C**	**P**

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PETROLEUM RESOURCES

Product Catalogue

Multifunction Monitoring

Global Suppliers of Measurement and Protection Equipment for Industry

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Website: www.petroces.com, Email: info@petroces.com

PETROLEUM RESOURCES

LDA-C

Models Available

LDA-C 3 Phase Multifunction Monitor

Product Features

- Measures over 30 electrical parameters
- 3 phase 4 wire or 3 wire unbalanced
- 4 quadrant measurement
- Volts, Amps, Watts, Vars
- Neutral current, Hz, cosØ, kWh
- Max demand A, kW, kVA, KVar
- Maximum and minimum values
- Measures total harmonic distortion
- True RMS readings
- DIN96 metal enclosure
- 3 line LCD screen
- User programmable CT and VT ratios
- 2 pulsed outputs / alarm outputs
- RS485 serial port
- Software available

The LDA-C multifunction monitor is suitable for the measurement of over 30 parameters of a three phase electrical system in one auxiliary powered instrument. The large LCD screen and compact DIN96 enclosure ensures suitability for a wide range of industrial applications.

The LDA-C can be programmed through the front built-in keypad buttons or remotely via the serial port. The RS485 serial port uses the MODBUS RTU communication protocol and up to 32 units can be connected in one network.

Two voltage free output relays can be configured as either pulsed outputs for energy or alarm contacts for any parameter. Optional meter reading software and full data analysis software are available.

For measuring over 30 electrical parameters of a 3 phase electrical system

Specification

Safety Standard:
- EN 61010 Class 2 (Category III)

Input Current, *In*:
- 1A or 5A CT operated
- Measuring range 1-120% *In*

Input Voltage, *Un*:
- 100, 110, 230, 400V or VT ratio
- Measuring range 20-120% *Un*

Frequency:
- 50/60Hz

Overload:
- 1.2 x *In* or *Un* for 2 hours
- 6 x *In* for 5 seconds

Test Voltage:
- 2kV rms for 1 minute

Burden:
- Voltage circuit: 1mA per phase
- Current circuit: 0.2VA per phase

Auxiliary Power Supply:
- 63.5/110Vac or 230/400Vac (±20%)
- Burden 3VA

Accuracy:
- See table

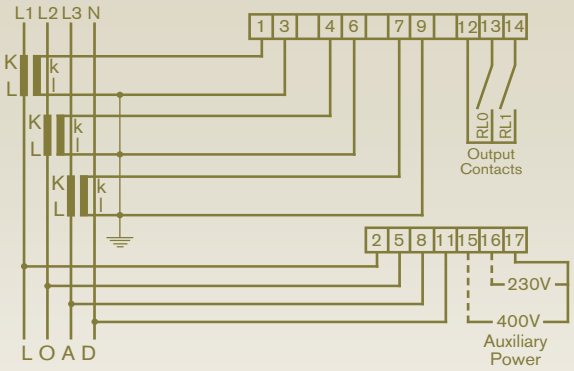
Output Contacts:
- 2 voltage free relay contacts (N/O)

Contact Rating:
- 3A at 250Vac

Impulse Duration:
- > 100ms

Operating Temperature:
- -5°C to 55°C

Connections



3 Phase 4 Wire Unbalanced

Electrical Parameter	Operating Range	Accuracy
Voltage	20 to 120%	0.3% of (reading + full scale)
Current	1 to 120%	0.3% of (reading + full scale)
Active Power (P)	1 to 120%	0.3% of (reading + full scale)
Reactive Power (Q)	1 to 120%	0.3% of (reading + full scale)
Apparent Power (S)	1 to 120%	0.5% of(reading + full scale)
Power Factor (cosØ)	-0.5 to +0.5	0.6% of reading
Frequency	45 to 65Hz	0.2% of rated frequency
Active Energy	5 to 120%	1% of reading
Reactive Energy	5 to 120%	2% of reading

Ordering information

Code	Description	Auxiliary
LDA-C	96 x 96mm 3 Phase Multifunction Monitor	–
63.5/110Vac	–	63.5Vac and 110Vac
230/400Vac	–	230Vac and 400Vac
Example	**LDA-C**	**230/400V**

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Programming

The LDA-C can be programmed through the keypad or remotely via the serial port.
The following details can be programmed:
· Instrument identity code
· Primary voltage / VT ratio
· Primary current / CT ratio
· Relay operation (pulse output or alarm contact)
Multiple programming can be achieved when units are linked in a communication network.
The LDA-C can be factory programmed if required.

Serial Port Communication

The LDA-C has a serial port with a programmable baud rate between 300 and 19200 bps, communicating using the RS485 standard. The standard baud rate is 9600 bps with 8 data bits, no parity and 1 stop bit. It allows the transmission of the measured values to a computer or PLC. The connection is done on 2 wires half duplex. The RS485 uses the MODBUS RTU communication protocol. The standard configuration permits connection of up to 32 units in one network. Optional software is available to allow meter reading or full data analysis.

Pulse / Alarm Outputs

The output relay contacts can be programmed to operate as follows:
· Active energy (kWh) or reactive energy (kVarh) indicated by voltage free pulse contacts.
· Any specified parameter can have one or two alarm contacts.
Both contact outputs can be programmed and activated through the serial port.

Maximum Demand

Maximum demand values for I1, I2, I3, IN, P, Q and S can all be displayed. The integration period can be selected as 15 or 30 minutes.

Display / Keypad

A custom LCD display has been developed to show more than 30 electrical parameters by sequential pages, selected by the up and down keys. The meter has 5 keys to select the parameters displayed and for programming.

Minimum / Maximum Values

The LDA-C is capable of displaying the minimum and maximum values of the following parameters: V1, V2, V3, V12, V23, V31, I1, I2, I3, P1, P2, P3, P, Q, S, cosØ and Hz.

Parameters Measured

Electrical Parameter	Symbol	System	Line 1	Line 2	Line 3	Reset
Voltage (Line-Neutral)	V		X	X	X	
Voltage (Line-Line)	V		X	X	X	
Current	A		X	X	X	
Neutral Current	A	X				
Active Power (P)	kW	X	X	X	X	
Reactive Power (Q)	kVAr	X	X	X	X	
Apparent Power (S)	KVA	X	X	X	X	
Power Factor (cosØ)	PF	X	X	X	X	
Maximum Demand Current	A		X	X	X	
Maximum Demand P	kW	X				
Maximum Demand Q	kVAr	X				
Maximum Demand S	KVA	X				
Frequency	Hz	X				
THD Current	A		X	X	X	
THD Voltage	V		X	X	X	
Consumed Active Energy (EP+)	kW-h	X				X
Generated Active Energy (EP-)	-kW-h	X				X
Consumed Inductive Reactive Energy (EP+)	kvarL-h	X				X
Consumed Capacitive Reactive Energy (EP-)	kvarC-h	X				X

Specification Continued

Communication Standard:
- RS485 (2 wire half duplex)
- baud rate 300 to 19200 bps
- (9600 bps standard)

Maximum Length Of Net Per Line:
- 1250m without repeater

Maximum Number Of Units Per Line:
- 32

Enclosure:
- DIN96 metal and ABS (UL94 V0)
- Panel mounting with LCD screen
- 14mm high digits

Enclosure Code:
- Case front IP54, terminals IP20

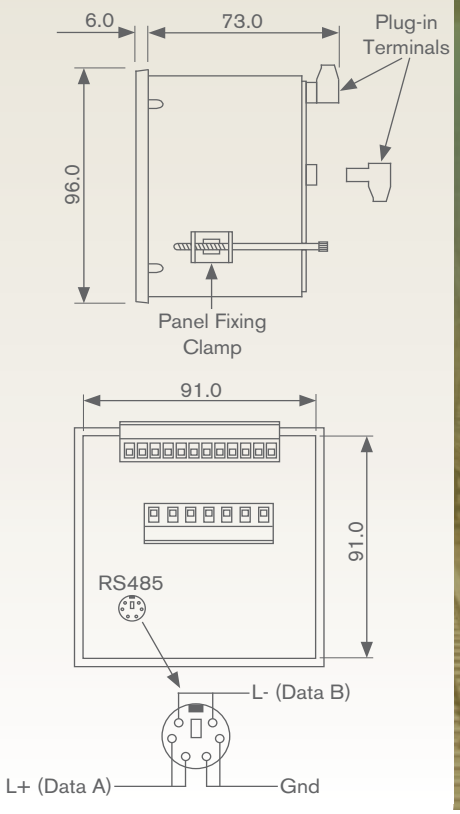
Input/Output Connectors:
- Plug-in type
- 2.5mm² maximum cable entry

Weight:
- 600 grams

Markings:
- CE marked

Specification subject to change without notice.

Dimensions



LCC

Models Available

LCC 3 Phase Multifunction Monitor

Product Features

- Measures over 30 electrical parameters
- 3 phase unbalanced or balanced
- 4 quadrant measurement
- Volts, Amps, Watts, Vars
- Neutral current, Hz, cosØ, kWh
- Max demand A, kW, kVA, KVar
- Maximum and minimum values
- True RMS readings
- DIN96 ABS enclosure
- Backlit 3 line LCD screen
- User programmable CT and VT ratios
- 2 pulsed outputs / alarm outputs
- Port for RS485 communications
- Software available

The LCC multifunction monitor is suitable for the measurement of over 30 parameters of a three phase electrical system in one self powered instrument. The large backlit LCD screen and compact DIN96 enclosure ensures suitability for a wide range of industrial applications.

The LCC can be programmed through the front built-in keypad buttons or remotely via the serial port. The RS485 serial port uses the MODBUS RTU communication protocol and up to 16 units can be connected in one network.

Two voltage free output relays can be configured as either pulsed outputs for energy or alarm contacts for any parameter. Optional meter reading software and full data analysis software are available.

For measuring over 30 electrical parameters of a 3 phase electrical system

Specification

Safety Standard:
- EN 61010 Class 2 (Category III)

Input Current, *In*:
- 1A or 5A CT operated
- Measuring range 1-120% *In*

Input Voltage, *Un*:
- 400VL-L
- Measuring range 80-120% *Un*

Frequency:
- 50/60Hz

Overload:
- 1.2 x *In* or *Un* for 2 hours
- 6 x *In* for 5 seconds

Test Voltage:
- 2kV rms for 1 minute

Burden:
- Voltage circuit: 20mA per phase
- Current circuit: 0.2VA per phase

Accuracy:
- See table

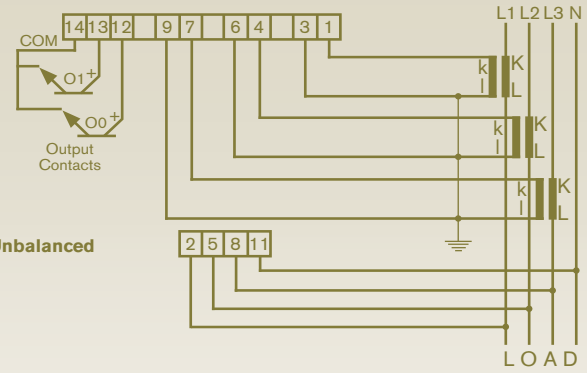
Output Contacts:
- 2 optocoupler contacts (N/O)
- < 48Vc.c. (24Vc.c. 1kW)

Impulse Duration:
- 100ms

Pulse Resolution (Energy):
- 1pulse/kWh or 1pulse/10kWh

Operating Temperature:
- -5°C to 55°C

Connections



3 Phase 4 Wire Unbalanced

Electrical Parameter	Operating Range	Accuracy
Voltage	80 to 120%	0.3% of (reading + full scale)
Current	1 to 120%	0.3% of (reading + full scale)
Active Power (P)	1 to 120%	0.3% of (reading + full scale)
Reactive Power (Q)	1 to 120%	0.3% of (reading + full scale)
Apparent Power (S)	1 to 120%	0.5% of(reading + full scale)
Power Factor (cosØ)	-0.5 to +0.5	0.6% of reading
Frequency	45 to 65Hz	0.2% of rated frequency
Active Energy	5 to 120%	1% of reading
Reactive Energy	5 to 120%	2% of reading

Ordering information

Code	Description	Options
LCC	96 x 96mm 3 Phase Multifunction Monitor	–
MC-LCC	–	RS485 Communication Module
Example	**LCC**	**with MC-LCC**

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