DUCA-LCD96 – Technical characteristics

POWER SUPPLY			
Voltage	*Frequency*	*Power consumption*	*Fuse*
24÷240VAC/DC (-5% +10%) 48÷240VAC/DC (-5% +10%) – only for models: DUCA-LCD96 IO, DUCA-LCD96 PROFI and DUCA-LCD96 ETH	45 ÷ 65Hz	< 7VA	**Fit external fuse**: T 0.5A from 24V to 100V T 0.25A from 100V to 240V

MEASUREMENTS AVAILABLE ON THE DISPLAY	
Measurements	*Notes*
Frequency	
Phase-to-Neutral Voltage [$V_{L1-N}, V_{L2-N}, V_{L3-N}$]	True RMS
Phase-to-Phase Voltage [$V_{L1-L2}, V_{L2-L3}, V_{L1-L3}$] and Three-Phase Voltage	True RMS
Line and Three-Phase Current	True RMS
Line and Three-Phase Active, Reactive and Apparent Power	With inductive and capacitive symbols for reactive power and sign for active power
Single-Phase and Three-Phase Power Factor (PF)	With inductive and capacitive symbols
Line and Three-Phase Active, Reactive and Apparent Energy	All energies are measured both in absorption and generation
Voltage and current Single-Phase Total Harmonic Distortion Factor	

MAX, MIN AND AVERAGE (15 MINUTES CALCULATION PERIOD) VALUES			
Max values	*Min values*	*Average values*	*Max – Demand*
Phase-to-Neutral Voltage [$V_{L1-N}, V_{L2-N}, V_{L3-N}$]	Phase-to-Neutral Voltage [$V_{L1-N}, V_{L2-N}, V_{L3-N}$]	Line and Three-Phase Active Power	Line and Three-Phase Active Power
Linked Voltage [$V_{L1-L2}, V_{L2-L3}, V_{L3-L1}$] and Three-Phase voltage	Linked Voltage [$V_{L1-L2}, V_{L2-L3}, V_{L3-L1}$] and Three-Phase voltage		
Line Current	Line Current	Line and Three-Phase Reactive Power	Line and Three-Phase Apparent Power
Line and Three-Phase Active, Reactive and Apparent Power	Line and Three-Phase Active, Reactive and Apparent Power	Line and Three-Phase Apparent Power	

QUANTITIES SELECTABLE FOR ALARMS
Phase-to-Phase Voltage [$V_{L1-L2}, V_{L2-L3}, V_{L1-L3}$] and Three-Phase Voltage
Phase-to-Neutral Voltage [$V_{L1-N}, V_{L2-N}, V_{L3-N}$]
Line and Three-Phase Current
Active, Reactive and Apparent Single-Phase and Three-Phase Power
Single-Phase and Three-Phase Power Factor (PF)
"Count-down" counter
Frequency

ACCURACY OF THE MEASUREMENTS	
Voltage:	±0,5% F.S. ±1 digit in the range 10Vac÷500Vac rms V_{L-N}
Current:	±0,5% F.S. ±1 digit in the range 50mA÷5A rms
Active Power:	±1% ±0,1% F.S. (from cosφ = 0,3 Ind. to cosφ = -0,3 Cap.)
Frequency:	40.0 ÷ 99.9Hz: ±0,2% ±0,1Hz 100 ÷ 500Hz: ±0,2% ±1Hz

VOLTMETER INPUTS	
Range:	10 ÷ 500V rms (L-N)
Max non destructive value:	550V rms
L-N input impedance:	About 1MΩ

AMMETER INPUTS	
Range:	50mA ÷ 5A rms
Overload:	1,3 permanent – models with internal CT 1,1 permanent – DUCA-LCD96 BASE model
Max dispersed power:	10mW (with Imax = 5A rms for each phase input) 1,4W (with Imax = 5A rms for each phase input) – DUCA-LCD96 BASE model
Direction of CTs current:	Detection and automatic adjustment at power up, independent for each phase

DIGITAL OUTPUTS	
Pulse duration:	50ms OFF (min)/50ms ON
Vmax on contact:	48V (peak DC or AC)
Max power dissipation:	450mW
Max frequency:	10 pulses/sec
Imax on contact:	100mA (peak DC or AC)
Insulation:	750Vmax

June 2012

ALARM RELAY (only DUCA-LCD96 RELE model)	
Nominal current:	16A AC1 – 3A AC15
Max instant current:	30A
Nominal voltage:	250VAC
Max instant voltage :	400VAC
Nominal load:	4000VA AC1 – 750VA AC15
ANALOG OUTPUTS (only DUCA-LCD96 IO model)	
Span:	0÷20mA o 4÷20mA
Load:	Typical 250Ohm, max 600Ohm
DIGITALI INPUTS (only DUCA-LCD96 IO model)	
Nominal voltage:	24 VDC
Max Voltage:	32 VDC
Max voltage for OFF state:	8 VDC
Min voltage for ON state:	18 VDC
ENERGY COUNT	
Max value for the single and three-phase energy:	4294,9MWh (MVArh) con KA = KV = 1
Accuracy:	Class 1
AVAILABLE INTERFACES	
RS485 serial interface with galvanic insulation (available protocols: ASCII Ducati and ModBus-RTU) – DUCA-LCD96 485-XXX models	
Profibus interface optically insulated with DP-slave option according to IEC-61158 – DUCA-LCD96 PROFI model	
Ethernet RJ45 insulated interface with MDI/MDX auto-crossover functionality (available Modbus-TCP protocol and Webserver functionality) –DUCA-LCD96 ETH model	
Large white-backlit LCD	
DIMENSIONS AND WEIGHT	
Dimensions : 96mm x 96mm x 77mm (LxHxW) – IEC61554 (58mm depth inside panel)	
Weight: about 400g	
PROTECTION	
IP50 on the front panel and IP25 on the terminal blocks	
OPERATIVE CONDITIONS	
Storage temperature:	-10°C ÷ 60°C
Operating temperature:	-5°C ÷ 55°C
Relative humidity:	93% max. (without condense) at 40°C

June 2012