



CVMk2 Panel Mount Power Quality Analyzer

Measured Parameters:

PARAMETER	UNIT	L1	L2	L3	N	III
Ph-N VOLTAGE	V	•	•	•	•	•
Ph-Ph VOLTAGE	V	•	•	•	•	•
VOLTAGE V_{REF} (GND)-NEUTRAL	V				•	
CURRENT	A	•	•	•	•	•
FREQUENCY	Hz	•				
ACTIVE POWER (Consumption and Generation)	kW	•	•	•	•	•
INDUCTIVE POWER (Consumption and Generation)	kvar L	•	•	•	•	•
CAPACITIVE POWER (Consumption and Generation)	kvar C	•	•	•	•	•
APPARENT POWER (Consumption and Generation)	kV-A	•	•	•	•	•
POWER FACTOR	PF	•	•	•	•	•
COS ϕ	Cos ϕ	•	•	•	•	•
MAXIMUM ACTIVE POWER DEMAND	Pd				•	
MAXIMUM APPARENT POWER DEMAND	Pd				•	
MAXIMUM CURRENT DEMAND	Pd	•	•	•	•	•
NEUTRAL LINE CURRENT	I_n				•	
VOLTAGE THD (RMS AND FUNDAMENTAL)	U_{THD}	•	•	•	•	•
CURRENT THD (RMS AND FUNDAMENTAL)	I_{THD}	•	•	•	•	•
VOLTAGE HARMONICS 2 nd ...50 th	harm V	•	•	•	•	•
CURRENT HARMONICS 2 nd ...50 th	harm A	•	•	•	•	•
ACTIVE ENERGY (Consumption and Generation)	kW-h					•
INDUCTIVE ENERGY (Consumption and Generation)	kvar-h L					•
CAPACITIVE ENERGY (Consumption and Generation)	kvar-h C					•
APPARENT ENERGY (Consumption and Generation)	kV-A-h					•
TOTAL ACTIVE ENERGY and Tariff (Consum. and Gen.)	kW-h					•
TOTAL INDUCT. ENERGY and Tariff (Consum. and Gen.)	kvar-h L					•
TOTAL CAPAC. ENERGY and Tariff (Consum. and Gen.)	kvar-h C					•
TOTAL APPARENT ENERGY and Tariff (Consum. and Gen.)	kV-A-h					•
FLICKER (VA and PST)	Wa	•	•	•		
K-FACTOR (current)		•	•	•		
CREST FACTOR (voltage)		•	•	•		
UNBALANCE (voltage and current)		•	•	•		
ASYMMETRY (voltage and current)		•	•	•		
PHASE DIFFERENCE BETWEEN VOLTAGES						



Specifications:

VOLTAGE INPUTS	
Measuring range	from 5 to 120% of U_n for $U_n = 300$ Vac (f-N) from 5 to 120% of U_n for $U_n = 520$ Vac (f-f)
Frequency	45...65 Hz
Maximum measured voltage	360 Vac
Acceptable overvoltage	750 Vac
Maximum Consumption (limited current)	< 0.6 V·A
CURRENT INPUTS	
Measuring range	from 1 to 120% of I_n for $I_n = 5$ A
Secondary for the TCs (I_n)	1 or 5 A
Primary current measured	Programmable <30000A
Acceptable overload	6 A continuous, 100 A $t \leq 1$ s
Consumption	< 0.45 V·A
AUXILIARY POWER SUPPLY	
Power supply	85 to 265 V ac (50...60 Hz) (consumption < 30 V·A) 90 to 300 V dc (consumption < 25 W)
MECHANICAL	
Maximum torque	0.8 Nm
Maximum wire rigid diameter	4.5 mm ²

Compliance:

Accuracy: ANSI C12.16
FCC: Class A Part 15
UL/CUL/CSA
Michigan Compliant

Models:

CODE	TYPE	VALID FOR .../5 AND .../1 A TRANSFORMERS	THREE PHASE 50...60HZ	TRUE RMS VALUE (TRIMS)	INSULATED CURRENT INPUTS ITF	COMMUNICATION PORTS (*)	EXPANSION SLOTS	ANALYSIS OF VOLTAGE (50 th) AND DISTURBANCE DETECTION	MULTI-TARIFF EQUIPMENT (9 TARIFF)	4 QUADRANTS	VOLTAGE AND CURRENT WAVE FORMS	CLASS 0.5 (POWER AND ENERGY)	CLASS 0.2 (POWER AND ENERGY)	NETWORK PROTOCOL	COMMUNICATION PROTOCOL
M54400	CVMK2-ITF-405	•	•	•	•	•	•	•	•	•	•	•	•	RS485	Modbus-RTU
M54402	CVMK2-ITF-402	•	•	•	•	•	•	•	•	•	•	•	•	RS485	Modbus-RTU

Two Piece Unit: Meter with Display
Mounts Through 4" ANSI Hole

Software:

Power Analyzing and Trending (Powerstudio)

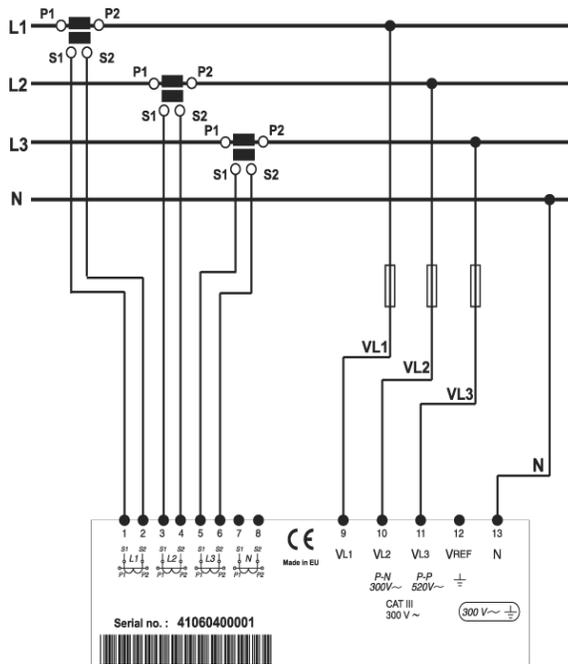
Current Transformers:

Includes 3 – LX400 CTs
(+/- 1% between 4 – 400 Amps)
Other Solid Core – Bar Type – Split Cores CTs up to 10,000 Amps Available

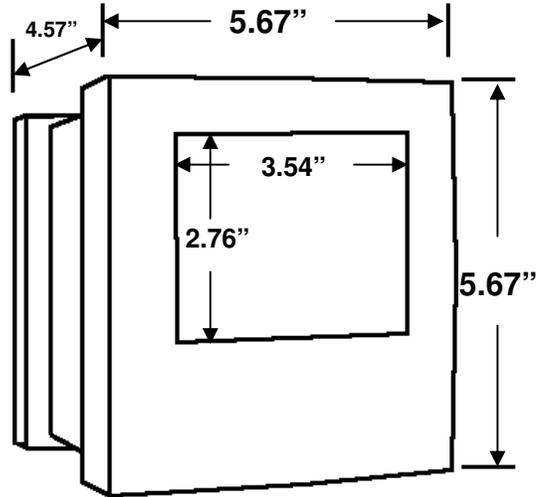
Communication Options:

Hard Wired Modbus Data...
(up to 255 meters on one 2 wire circuit)
One LCD screen can Display up to 32 Meters
Power Line Carrier
Ethernet TCIP

Typical Wiring Diagram



Dimensions



Detailed Specifications

VOLTAGE INPUTS	
Minimum measurable voltage	10 V a.c
Measuring range	from 5 to 120% of U_n for $U_n = 300$ V a.c. (f-N) from 5 to 120% of U_n for $U_n = 520$ V a.c (f-f)
Frequency	45...65 Hz
Maximum measured voltage	360 Vac
Acceptable overvoltage	750 Vac
Consumption	< 0.6 V•A
CURRENT INPUTS	
Minimum measurable current	20 mA
Measuring range	from 1 to 120% of I_n for $I_n = 5$ A
Secondary for the TCs (I_n)	1 or 5 A
Primary current measured	Programmable < 30.000 A
Acceptable overload	6 A continuous, 100 A $t < 1$ s
Consumption for (.../5 and .../1)	< 0.45 V•A
AUXILIARY POWER SUPPLY	
Power supply	85 to 265 Vac (50-60 Hz) (consumption < 30 V•A) 90 to 300 Vdc (consumption < 25 W)
Digital inputs (Ton or counter pulse)	
Use voltage	24 to 60 Vdc \pm 20%
Minimum signal width	30 ms
Consumption (each input)	< 0.5 W
Precision (type 402)	
Currents I	\pm 0.2% from 10% to 120% of I_n
Voltages	\pm 0.2% from 20% to 120% of U_n
Active power P	\pm 0.2% from 10% to 120% of I_n
Reactive power Q	\pm 0.5% from 10% to 120% of I_n
Apparent power S	\pm 0.5% from 10% to 120% of I_n
Frequency F	\pm 0.01 Hz from 45 to 65 Hz
Active energy	\pm 0.2%
Reactive energy	\pm 0.5%
Apparent energy	\pm 0.5%

DIGITAL PULSE OUTPUTS	
Type:	Optocoupler
Use voltage	24 V d.c
Maximum power (per output)	0.8 W
Maximum R_{ON}	35 Ω
RELAY DIGITAL OUTPUTS	
Type:	Mechanical relay
Use voltage	250 V a.c
Maximum current (resistive charge)	3 A
ANALOGUE OUTPUT	
Scale	from 0 ... 20 mA or 4 ... 20 mA
Maximum acceptable charge	500 Ω
Response time	< 2 s
Output range points	4000
COMMUNICATIONS	
Network protocol	RS-485
Communication protocol	Modbus/RTU
Speed (configurable)	9600, 19200, 38400, 57600 baud
Parity	even, odd or no parity
Stop bits	1 or 2
ETHERNET OUTPUT	
Network protocol	RJ-45 ETHERNET
Communication protocol	Modbus/TCP
Speed	10baseT / 100baseTx compatible
ENVIRONMENT	
Operating temperature	- 10... + 50 °C
Storage temperature	- 20... + 65°C
Relative Humidity	95% with no condensation
Facility category	CAT III in accordance with CEI 61010
Degree of contamination	2 in accordance with IEC 61010
Protection index	IP51 front - IP20 rear
MECHANICAL	
Connection	Terminal board with screws for rigid 2.5 mm (4.5 mm ²) or flexible wires (AWG 11)
STANDARDS	
EMC	61000-4-2, 61000-4-3, 61000-4-11, 61000-4-4, 61000-4-5
	Listed for industrial control equipment miscellaneous device. FILE: NMTR E227534