

TECHNICAL SPECIFICATIONS OF CST-222

GENERAL TECHNICAL SPECIFICATIONS

Power supply	2x AA battery Alkaline (LR6) or NiMH (HR6)
Battery life (typical)	>100 h
Ingress protection	IP 40
Mass	1.12 kg
Size without cable assembly (W × L × D)	117 × 210 × 45 mm
Input test voltage	Max. 250 VAC (single phase) / 480 VAC (3 phase) 50/60 Hz, max. load current 1 A if not otherwise specified
Measurement category	CAT II 300 V
Protection classification	Class II
Pollution degree	2
Referential temp./humidity range	+23 °C ± 5 °C
Working temp. range	-10 ... 40 °C
Storage temp. range	-20 ... 50 °C
Referential humidity range	30 ... 50 %
Working humidity range	5 ... 85 % (w/o condensation)
Storage humidity range	< 85 % (w/o condensation)
Max. altitude	2000 m
Display	2.4-inch reflective LCD, 128x64 pixels
Auto power off	5 min

FUNCTIONS

PE Pre-test

Indication of present voltage on PE	>50 V
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*User must have a sufficient connection to ground reference for this function to work properly.

Mains voltage presence detection (Phase voltages L1/PE, L2/PE, L3/PE)

Indication of present voltage	>100 V
Connection to mains	AC coupled
Input impedance	4 MΩ

Mains voltage measurement (Phase voltages L1/N, L2/N, L3/N and neutral voltage N/PE)

Display/measuring range	280 V within 40 ... 70 Hz
Connection to mains	AC coupled
Resolution	1 V
Accuracy	± (2 % + 3 D)
Crest factor	2
Input impedance	4 MΩ from L1/L2/L3/N to PE 8 MΩ from L1/L2/L3 to N

Mains frequency measurement

Display/measuring range	40.0 ... 70.0 Hz
Resolution	0.1 Hz
Accuracy	± 2 D
Voltage condition	100 ... 280 V on any Lx to N

Mains state indication

Displayed mains conditions	Not well defined Three-phase sequence – left orientation Three-phase sequence – right orientation Three-phase sequence – undefined orientation Lx and N switched
Three-phase sequence left/right voltage condition	100 ... 280 V on all Lx to N
Three-phase sequence left/right phase imbalance	120° ± 10 %

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Three-phase sequence left/right voltage imbalance	< ± 20 % voltage difference between Lx/N
Lx and N switched voltage condition	100 ... 280 V on any Lx to N 100 ... 280 V on N to PE <100 V on all Lx to PE (mains voltage presence indicators all OFF)
CP Voltage	
Display/measuring range (positive and negative voltage measurements separated)	$\pm (0.50 \dots 15.00 \text{ V})$
Resolution	0.01 V
Accuracy (0.50 ... 2.00)	$\pm (0.5 \% + 3 \text{ D})$
Accuracy (2.01 ... 15.00)	$\pm 0.5 \%$
Frequency condition	DC or 900.0 ... 1100.0 Hz
Duty cycle condition	DC or 3.0 ... 97.0 %
CP Frequency	
Display/measuring range	900.0 ... 1100.0 Hz
Accuracy	$\pm 0.1 \%$
CP Duty cycle	
Display range	2.0 ... 98.0 %
Measuring range	3.0 ... 97.0 %
Accuracy	$\pm 5 \text{ D}$
Frequency condition	900.0 ... 1100.0 Hz
CP Maximum current	
Calculated from CP Duty cycle	Based on Table A.8, IEC 61851-1:2017
CP Voltage state indication	
Calculated from CP Voltage	Based on Table A.4, IEC 61851-1:2017
"CP state" switch positions - voltage at 12V source with 1 kΩ internal resistance	
A - EV in standby (EV not connected)	12 V (>1 M Ω)
B - EV connected, not ready to charge	9 V (2740 Ω)
C - EV ready to charge, no ventilation	6 V (882 Ω)
D - EV ready to charge, ventilation required	3 V (246 Ω)
E - Error state (on diode's cathode)	0 V (<30 Ω)
"PP state" switch positions (cable ampacity selection)	
NC - EV not connected	>100 k Ω
13 A	1500 $\Omega \pm 2 \%$
20 A	860 $\Omega \pm 2 \%$
32 A	220 $\Omega \pm 2 \%$
63 A	100 $\Omega \pm 2 \%$
Error	<30 Ω
Error simulations	
E button - CP error state (on diode's anode)	<30 Ω from CP to PE when pressed
PE button - PE open error	Open circuit from CP to PE when pressed
Diode short button	Short circuit over diode when pressed
Mains test socket	
Max. current	10 A
Max current flow time on/off ratio	1/3
Max time on	0,5 h
Protection	T10 A / 250 V(H), 5 x 20 mm

Reference temperature for all specifications is $+23 \text{ }^{\circ}\text{C} \pm 5 \text{ }^{\circ}\text{C}$ with a temperature coefficient of 0.05%/ $^{\circ}\text{C}$ when outside of the specified reference temperature.

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