FEATURES

- Compact 17.5mm wide
- True RMS Voltage measurement to the 13th Harmonic
- Measures Phase Loss, Sequence & Asymmetry, Under and Over-Voltage.
- Multi-voltage, DIP Switch selectable 3-Phase 3-wire 208-480VAC Ph-Ph 3-Phase 4-wire 120-277VAC Ph-N
- Selectable Over/Under Voltage, Asymmetry, Phase Loss/Sequence,
- SPCO Alarm Relay
- 3 x LED fault Indicators

Multi-function 3-Phase Voltage Monitoring Relay

RS Stock No.: 223-7791, 223-7792, 223-7794, 223-7795

RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

A compact, flexible fully featured 3-phase Voltage Monitoring Relay

- *Popular in Switchgear, Control Gear, Machine Control and Mains Distribution Systems*
- *Monitors 3-phase supply for phase faults to protect motors, machines & installations*
- *Voltage selection allows for use on most global 3-Phase supply voltages (223-7791)*

General Specifications

Type	3-Phase Voltage Monitoring Relays
Input Voltage	3-phase AC, 3-Wire Ph-Ph & 4-wire Ph-N. See versions below
AC or DC Output Voltage	AC / DC via volt free, fail-safe alarm relay
Number of Outputs	1 X volt free change-over relay.
Special Features	17.5mm Slim Design / Measures True RMS Voltage / Measures up to the 13th Harmonic / Wide selection of alarm types / works on 3-wire and 4-wire 3-phase systems / Wide 3-phase voltage selection covers global supplies (223-7791)
Mounting Type	DIN Rail Mount
Connection Type	Screw terminal type
Indication of Phase fault	Displayed on 3 x LED's. (Healthy, OV, UV, Loss, Reverse, AS'Y
Internal Surge Voltage Protection	Varistor
For Use With	Incoming 3-Phase Supplies
DIP Switches	Used to Select Voltage Range, OV, UV, 3 or 4 -wire, Alarm Mode and Delay Timing function

Versions

RS Stock#	3-Wire Ph-Ph	4-Wire Ph-N	Setting range	Phase Asymmetry (ASY)
223-7791	208–480VAC	120–277VAC	+/- 23%	Fixed 10% +/-1%
223-7792	415VAC	240VAC	+/- 45%	Fixed 10% +/-1%
223-7794	415VAC	240VAC	+/- 45%	5-25% of Un +/-1% or Fixed 10% +/1%
223-7795	415VAC	---	+/- 45%	Fixed 30 +/-4%

Supply Voltage Specifications	
223-7791 223-7792 223-7794 223-7795	120-480VAC Selectable by DIP Switches from Monitored supply Self-powered from Monitored supply Self-powered from Monitored supply Self-powered from Monitored supply
Input Electrical Phase	3-Phase 3-wire or 3-phase 4-wire. See versions previous page
Line Frequency	47 to 63Hz
Power Consumption (max)	16VA @ 415VAC, supplied by L1 & L2
Trip Settings	
Phase Loss Trip time	Max. 22mS /-1mS
Phase Reversal	Enable/Disable buy DIP Switch (Not 223-7795)
Phase Asymmetry	See versions previous page
Under-Voltage, 4-Wire	See versions previous page
Under-Voltage, 3-Wire	See versions previous page
Under-Voltage Hysteresis	3 – 20VAC +/- 2V (7V Default)
Over-Voltage, 4-Wire	See versions previous page
Over-Voltage, 3-Wire	See versions previous page
Over-Voltage Hysteresis	3 – 20VAC +/- 2V (7V Default)
Asymmetry	See versions previous page
Hysteresis for Asymmetry	223-7791, 223-7792, 2237794 2.7% +/-1%. 223-7795 7% +/-2%.
Trip Modes	
223-7791 223-7792 223-7794 223-7795	UV, OV, ASY, Loss, Reverse. UV, OV, Inner(Active Band) Outer(Dead Band), ASY, Loss, Reverse UV, OV, ASY, Loss, Reverse ASY, Loss
Trip Delay Modes	
Operate Delay: ON Delay 223-7791 223-7792 223-7794	Selectable mode by DIP Switch: Adjustable 0-15 seconds +/- 1 Second, OR Fixed 5 Seconds +/- 1 Second. Note: DIP Switch Selection. If adjustable ON Delay selected OFF Delay (below) is Fixed and vice versa.
223-7795	Fixed <= 750mS
Trip Delay: OFF Delay 223-7791 223-7792 223-7794	Selectable mode by DIP Switch: Adjustable 0-15 seconds +/- 1 Second, OR Fixed 5 Seconds +/- 1 Second. Note: DIP Switch Selection. If adjustable OFF Delay selected, ON Delay (above) is Fixed and vice versa.
223-7795	Fixed <= 500mS
Output Relay	
Contact Rating	1 x SPCO rated 5A @ 240VAC/30VDC resistive
Electrical Life	$1X10^4$ Operations
Mechanical Life	$1X10^7$ Operations

Output Relay (Cont'd)	
Utilization Category	
AC-15	120V/3A, 240V/1.5A
DC-13	24V/2A, 125V0.22A & 250V/0.1A

Mechanical Specifications

Height	90mm
Depth	66mm
Width	18mm
Weight	75g
Case Material	Flame Retardant UL 94-V0

Operation Environment Specifications

Operating Humidity	**95% (Rh) Non-Condensing**
Operating Temperature Range	**-20 to 60°C**
Storage Temperature Range	**-25 to 70°C**
Cooling	**Natural convection**
Altitude During Operation	**2000m**
Electrostatic Discharge	IEC 61000-4-2 Level 2
Pollution Degree	**2**
Vibration Resistance	**According to IEC 60068-2-6 10Hz to 55Hz**

Protection Category

IP Rating	IP20 Terminals, IP30 Enclosure

Approvals

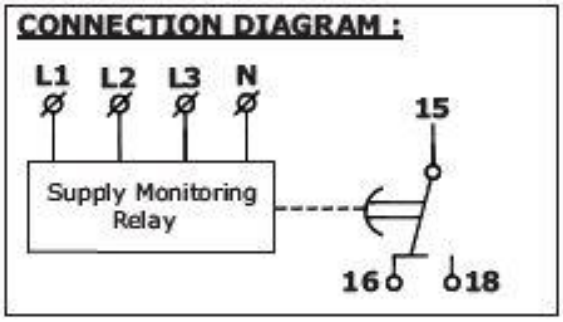
Declarations	CE and UKCA Declaration of Conformity
Standards Met	CE / IEC / CISPR11 / UL 508 (Safety)
Hazardous Area Certification	No

LED Fault indication matrix

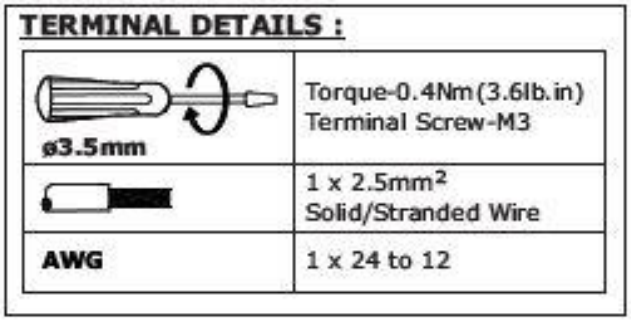
Condition	PWR LED(Green)	UV(Red)	OV(Red)	ASY(Red)
Supply Healthy	ON	OFF	OFF	OFF
Under Voltage	ON	ON	OFF	OFF
Over Voltage	ON	OFF	ON	OFF
Phase Asymmetry	ON	OFF	OFF	BLINK@1sec
L3 Phase Loss*	BLINK@1sec	OFF	OFF	OFF
Phase Reverse	ON	OFF	OFF	ON
3Ph Interruption	OFF	OFF	OFF	OFF
DIP S/W Change	All LED blinks@200 msec rate if DIP S/W set in run time.			

1) Multiple LED's can operate indicating multiple faults at one time e.g. in case of phase loss, UV and phase asymmetry faults may also occur.
2) For 223-7795, R LED ON indicates healthy supply & LED OFF indicated phase loss
3) For Outer (Dead Band) fault in 223-7792, UV and OV LED's flash at 200mS

Connection Diagram:



Terminal Torque and Capacity:



Dimensions