

TECHNICAL SPECIFICATION :


Cat. No.:	223-7791	223-7792	223-7794	223-7795
Supply Specifications :				
Supply Voltage (Un ϕ)	208 to 480 VAC+/-23%, 3P3W 120 to 277 VAC+/-23%, 3P4W	415 VAC+/-45%, 3P3W 240 VAC+/-45%, 3P4W	415 VAC+/-45%, 3P3W 240 VAC+/-45%, 3P4W	415 VAC+/-45%, 3P3W
Frequency	47 to 63 Hz			
Power Consumption	16VA at 415V supplied by L1 & L2			
Selectable Supply Voltage through DIP S/W (Refer Functional Settings)	208V-220V-240V-380V-400V-415V-440V-480V Ph-Ph or 120V-127V-139V-220V-230V-240V-256V-277V Ph-N	NA	NA	NA
Trip and Recovery Hysteresis Levels :				
Under Voltage (UV)	-2 to -22% of Un +/-1%	Settable: -5 to -25% of Un +/-1% or Fix: Symmetric 60% of Un +/-1%	Settable: -5 to -25% of Un +/-1% or Fix: Symmetric 80% of Un +/-1%	NA
UV Hysteresis	1% +/-0.5% for <=2% trip setting 2% +/-1% for >=4% trip setting	Settable: 2 to 12% +/-1% or Fix: 2% of Un +/-0.5%	2.7% +/-1%	NA
Over Voltage (OV)	2 to 22% of Un +/-1%	Settable: 5 to 25% of Un +/-1% or Fix: Symmetric 110% of Un +/-1%	Fix : 110% of UN +/-1%	NA
OV Hysteresis	1% +/-0.5% for <= 2% trip setting 2% +/-1% for >= 4% trip setting	Settable: 2 to 12% +/-1% or Fix: 2% +/-1%	2.7% +/-1%	NA
Phase Asymmetry (ASY) (only between Ph-Ph)	Fix 10% +/-1%	Fix 10% +/-1%	Settable: 5 to 25% of Un +/-1% or Fix: 10% +/-1%	Fix 30% +/-4%
Phase Asymmetry Hysteresis	2.7% +/-1%	2.7 % +/-1%	2.7% +/-1%	7% +/-2%
3 Phase Interruption	22 msec +/-1 msec			
Low Voltage Cut off	NA	NA	NA	175V +/-10V Hys.22V +/-10V
High Voltage Cut off	NA	NA	NA	570V +/-20V Hys.20V +/-10V
L3(B) Phase loss	Applicable. In case of L1 or L2 phase loss, product will turn OFF as product supply is taken from L1 & L2 phase.			
Phase Reverse	Applicable	Settable through DIP S/W	Settable through DIP S/W	NA
Release Time (OFF Delay)	Settable: 0 to 15 sec +/-1 sec or Fix: 5 sec +/-1 sec	Settable: 0 to 15 sec +/-1 sec or Fix: 5 sec +/-1 sec	Settable: 0 to 15 second or minute +/-1 second or minute	<=500 msec
	For phase fail, phase reverse & 3 Ph interruption fault, release time is less than 100 msec.			For phase loss, it is <100 msec
Operate Time (ON Delay)	Settable: 0 to 15 sec +/-1 sec or Fix: 5 sec +/-1 sec	Settable: 0 to 15 sec +/-1 sec or Fix: 5 sec +/-1 sec	Settable: 0.5 to 15 second or minute +/-1 second or minute	<=750 msec
Power ON delay	Power ON delay is equivalent to ON delay set or 1.4 sec (whichever is maximum).			

Caution :

- 1) Do not touch the terminals while power is being supplied.
- 2) Tighten terminal screws with the specified torque.
- 3) Always follow instructions stated in product leaflet.
- 4) Before installation, check to ensure that specifications agree with intended application.
- 5) Only qualified persons are authorized to install the product.
- 6) During installation, keep 10mm distance on both sides of product from adjacent devices.
- 7) Suitable dampers should be provided in the event of excessive vibrations.
- 8) Use slow blow fuse of 250mA rating in series with product supply.

Suitability for use :

These are products with Auto reset, hence never use the products for an application involving significant risk to life without ensuring that the system as a whole has been designed to address the risks and that our products are properly rated and installed for the intended use within the entire system or equipment.

Note :

- 1) The technical information provided in this document was correct at the time of going to Press.
- 2) Product innovation being a continuous process, we reserve the right to alter specifications without any prior notice.

E-Waste Regulatory Notice:

Kindly treat, recycle or dispose of this equipment in an environmentally sound manner after End of Life, as per WEEE (Waste Electrical and Electronic Equipment) regulations; or hand it over to Genera Industrial Controls Pvt. Ltd, through website <https://www.gicindia.com/get-in-touch/>

LED Indication : Applicable for MAG03D0424/ MAG03D0425/ MAG03D0426				
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 LEDs can operate indicating multiple faults at a time e.g in case of phase loss, UV and phase asymmetry faults may also occur.
 2. For cat id MAG03D0427,R LED ON indicates healthy supply & OFF indicates Phase loss.
 3. For Outer Mode fault in MAG03D0425 product, UV and OV LED blinks@200 msec.

Relay Output Specification :	
Contact Material	Ag-alloy, Cd free
Contact Rating	1 C/O, 5A @ 250V AC /30V DC(resistive)
Utilization category	AC15-120V/3A, 240V/1.5A & DC13-24V/2A, 125V/0.22A & 250V/0.1A
Mechanical Life Expectancy	1x10 ⁶ operations
Electrical Life Expectancy	5x10 ⁴ operations
Environmental Specification :	
Operating temperature	-20°C to 60°C
Storage temperature	-25°C to 70°C
Humidity	95% RH (Non-condensing)
Max operating altitude	2000m
Pollution Degree	2

EMI / EMC Standard Compliance :		Environmental Standard Compliance :		Safety Standard Compliance :	
Harmonic Current Emission	IEC 61000-3-2 Class A	Voltage Dips & Interruption	IEC 61000-4-11	Test voltage between I/P & O/P	IEC 60947-5-1 2KV
ESD	IEC 61000-4-2 Level II	Radiated & Conducted Emission	CISPR-11 Class A	Impulse voltage between I/P & O/P	IEC 60947-5-1 Level IV
Radiated Susceptibility	IEC 61000-4-3 Level III	Cold Heat	IEC 60068-2-1	Single Fault	IEC 61010-01 Level IV
Electrical Fast transient	IEC 61000-4-4 Level IV	Dry Heat	IEC 60068-2-2	Insulation Resistance	UL508 >50KΩ
Surge	IEC 61000-4-5 Level IV	Vibration	IEC 60068-2-6 10Hz to 55Hz	Leakage Current	UL508 <3.5mA
Conducted Susceptibility	IEC 61000-4-6 Level III				

MULTIFUNCTION SUPPLY MONITORING RELAY

FEATURES :

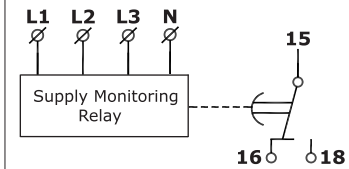
- > True RMS measurement
- > Configurable for 3 Phase 3 Wire or 3 Phase 4 Wire supply
- > Monitors own supply and detects fault conditions on one or more phases
- > Protection against Under Voltage(UV), Over Voltage(OV), Phase Asymmetry, Incorrect phase sequence, Phase loss and 3 phase interruption
- > Selectable supply voltage through DIP S/W and adjustable UV, OV or Phase asymmetry trip settings through pot in selected cat ids
- > Selectable ON or OFF delay through DIP S/W and adjustable delay time settings through pot
- > LED indication for supply and fault status
- > 1 SPDT relay output
- > 17.5mm DIN-rail housing



OPERATION :

The product operates in healthy condition, when all 3 phases with neutral(as per supply type) are present, phase sequence is correct and phase-phase voltage levels are within the set limits. If one or more phase-phase or phase-neutral voltage exceeds the upper set level(OV) or drops below the lower set level(UV), then the respective fault LED turns on and output relay trips after set OFF delay time. If phase sequence is incorrect or if L3 phase lost, the output relay trips immediately.

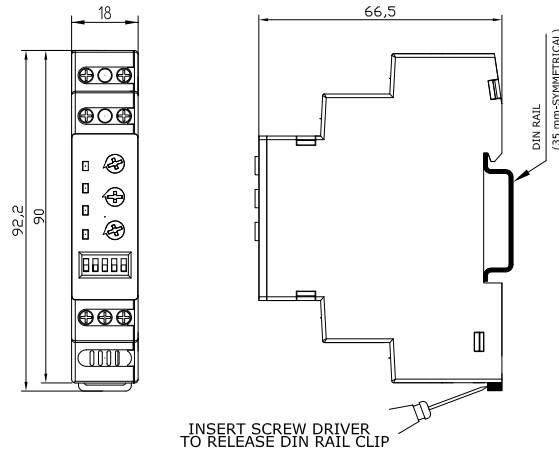
CONNECTION DIAGRAM :



TERMINAL DETAILS :

	Torque-0.4Nm(3.6lb.in) Terminal Screw-M3
	1 x 2.5mm ² Solid/Stranded Wire
AWG	1 x 24 to 12

PRODUCT DIMENSIONS AND MOUNTING :

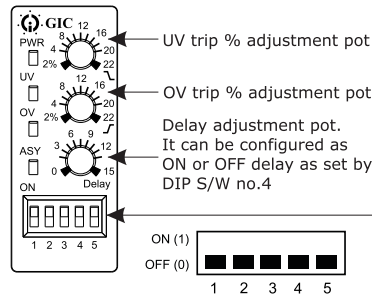


Mechanical Specification :

Housing	Flame Retardant UL 94-V0
Dimensions in mm (W x L x D)	18 x 90 x 66.5
Degree of protection	IP20 for Terminals IP30 for Enclosure
Weight (unpacked)	75 gms approx.

FUNCTIONAL SETTINGS :

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5 Pole DIP Switch Settings :

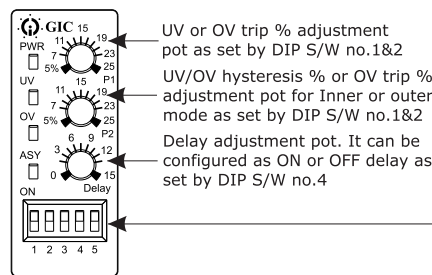
1	480	277
2	440	256
3	415	240
4	400	230
5	380	220
6	240	139
7	220	127
8	208	120
1 2 3	Ph - Ph (VAC)	Ph - N (VAC)

Supply Voltage Setting ON or OFF Delay Setting

NOTE : (Applicable for all cat IDs)

- 1) DIP S/W settings can not be changed in power ON condition.
- 2) If DIP S/W is changed during power ON, then all LEDs on product start blinking.
- 3) New DIP S/W settings can be applied only if product supply is turned OFF and ON.
- 4) Pot settings can be changed in power ON condition also.

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5 Pole DIP Switch Settings :

1	Settable UV with fix OV*
2	Settable OV with fix UV*
3	Inner Mode
4	Outer Mode
1 2	Function
1	Phase Seq. Disable
2	Phase Seq. Enable
3	Function
1	Settable OFF Delay Fix ON Delay
2	Settable ON Delay Fix OFF Delay
4	Delay
1	Ph - Ph
2	Ph - N
5	Supply Type

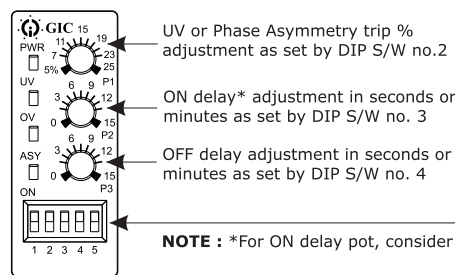
NOTE :

- 1) If Pot-P1 is set as UV or OV through DIP S/W setting, then pot-P2 is used to set hysteresis ranging from 2% to 12%. Here pot P2 scale 5% to 25% is divided by 2 and remainder is not considered to set hysteresis range from 2% to 12%.
- 2) If hysteresis % is more than trip % then it is considered as 2%.

Inner Mode Functionality : In this operating mode, if supply voltage falls below under voltage threshold (set by Pot-P1) or exceeds the over voltage threshold (set by Pot-P2) then relay trips. If supply voltage is within the threshold settings of UV and OV, then relay turns ON.

Outer Mode Functionality : In this operating mode, if any of the phase/line voltage is within the threshold level set by Under voltage Pot-P1 and Over voltage Pot-P2, then relay trips. If all phase/line voltages are outside the threshold levels set by UV and OV pot, then relay turns ON.(Refer Operation diagram)

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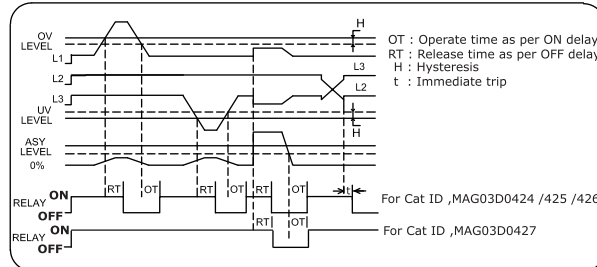


5 Pole DIP Switch Settings :

1	Phase Seq. Disable
2	Phase Seq. Enable
1 2	Function
1	Settable (POT-P2) ON Delay in sec
2	Settable (POT-P2) ON Delay in min
3	Delay
1	Ph - Ph
2	Ph - N
5	Supply Type
1	Settable UV(POT-P1) with fix asymmetry
2	Settable ASY (POT-P1) with fix UV
1 2	Function
1	Settable (POT-P3) OFF Delay in sec
2	Settable (POT-P3) OFF Delay in min
4	Delay

NOTE : *For ON delay pot, consider 0 marking as 0.5

OPERATION DIAGRAM :



223-7792: OUTER MODE

