

CONTROL AND PROTECTION

TIME RELAYS



Electronic time relays are microprocessor-based control devices used in time-critical processes. These devices are specially designed to activate or deactivate a circuit or a system within the set time and function. This relay group, which is generally used in the control panels of power circuits, can basically control the system by changing the relay positions with or without delay.

In terms of operating function, there are basically two types of time relays: pull delayed and drop delayed. Pull delay relays are known as straight time relays and drop delay relays are known as reverse time relays.

This group of relays, which has many different models, has varieties such as flasher model that can operate on and off, the right-left relay known as the inversion relay in the industry, which is used as an automatic position (direction) changer in automatic systems and repeats this process at intervals determined by the time setting on it, the triggered time relay that can operate with trigger detection, and the star-delta time relay that controls the star-delta connection on a time basis.

VOLTAGE PROTECTION RELAYS

These are devices used to protect motors and systems against neutral break, phase absence, high voltage, low voltage and phase sequence lines.

PHASE PROTECTION RELAYS

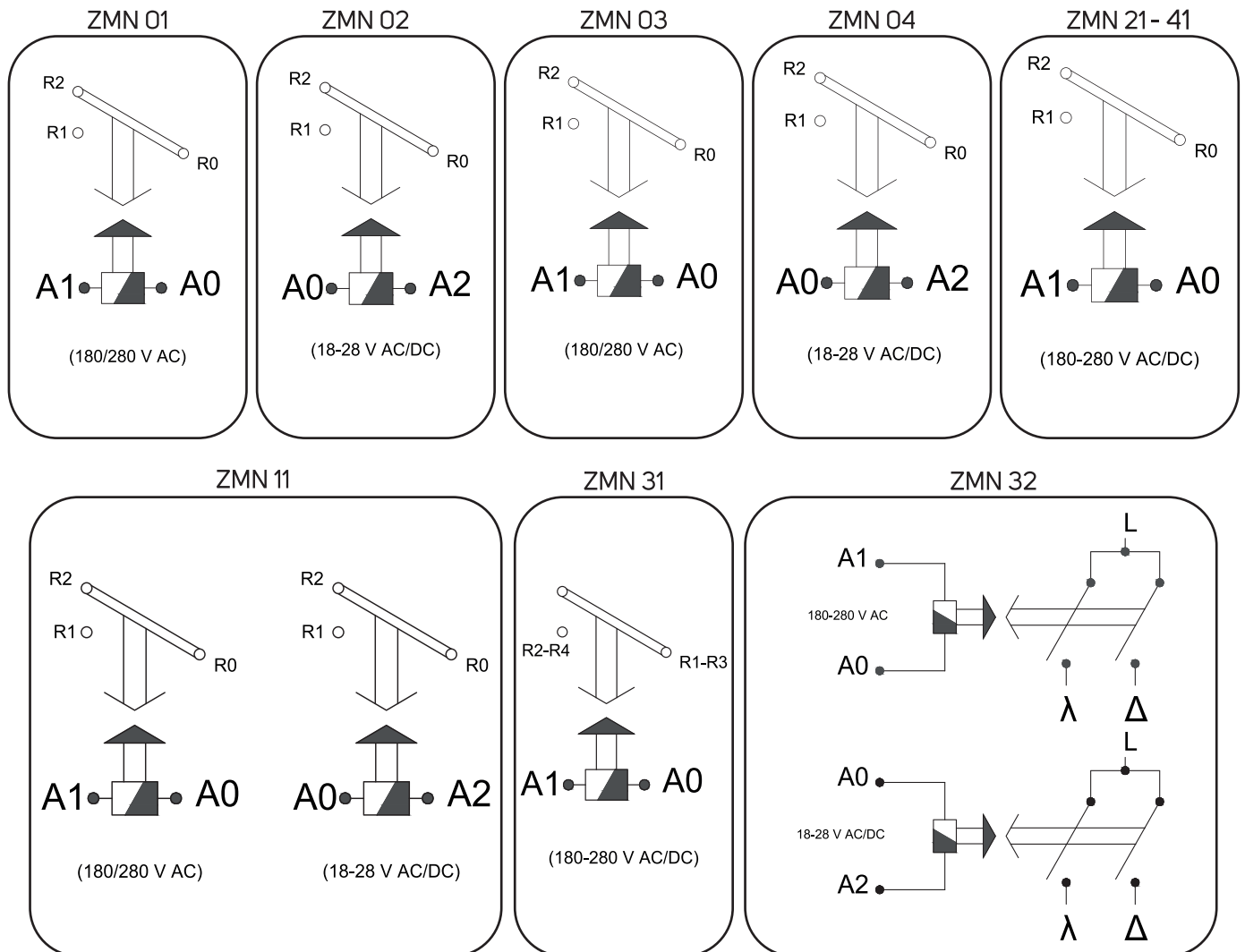
They are devices used to prevent damage to motors by overheating due to phase absence, high voltage, or voltage imbalance and to prevent problems that may arise from phase sequence error. There are types operating according to fixed or adjustable asymmetry.

TIME RELAYS



Product code	Product name	Product Description	Time Interval	Contact output		Trigger	Neutral Triggered	24V AC/ DC	220 V AC	Delayed on Pull	Delayed on Release	Open Flasher	Closed Flasher	Symmetric Flasher	Star-Delta	Control Input	Delayed on Pull	Delayed Drop On	Falling Edge Pull On	Rising Edge	Delayed on trigger pull	1 second delayed in pulse trigger release	Trigger Floor Automatic	Smart Test Mode	
				1C/O, 5A, 1250VA	2N/O, 5A, 1385 VA																				
GA8101	ZMN01	Timer Relay (0.1- 30 sec)	0.1sn - 30 sn	✓				✓	✓	✓															
GA8102	ZMN02	Timer Relay (0.1- 60 sec)	0.1sn - 60 sn	✓				✓	✓	✓															
GA8103	ZMN03	Timer Relay (0.1 sec - 30 h)	0.1sn - 100 saat	✓				✓	✓	✓															
GA8104	ZMN04	Timer Relay (0.1 sec - 999 min)	0.1sn - 999 dk	✓				✓	✓	✓	✓														
GA8111	ZMN11	Flasher Relay	0.1sn - 100 saat	✓				✓	✓			✓	✓	✓											
GA8121	ZMN21	Multifunctional Timer Relay	0.1sn - 99 saat	✓	✓			✓	✓	✓	✓			✓		✓		✓				✓			
GA8131	ZMN31	Right-Left Timer Relay (Off-Start)	0.1sn - 100 saat	✓		✓			✓																
GA8132	ZMN32	Star-Delta Timer Relay	Y-U:10-500ms Y:1-60sn	✓				✓							✓										
GA8141	ZMN41	Fire / Electronic Staircase Timer	0,1 sn - 8dk	✓		✓		✓															✓	✓	

CONNECTION DIAGRAM

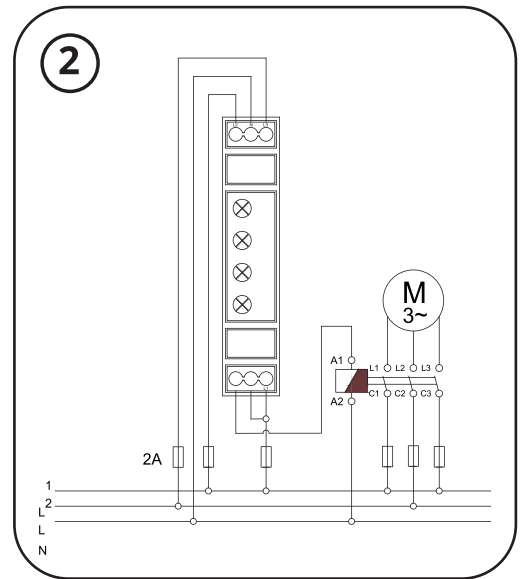
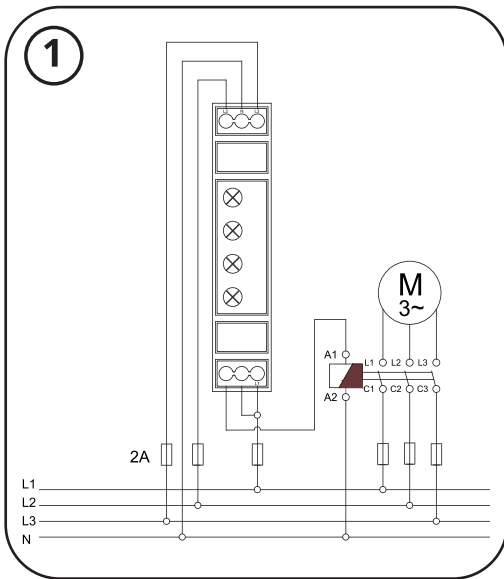


VOLTAGE PROTECTION RELAYS



Product code	Product name	Product Description	Contact output										Dial	supply						
			1N/O, 5A, 1385 VA	Neutral Connection	Non-Neutral Connection	Neutral break Detection	3-Phase Usage	Single Phase Use	Phase Sequence Control	Phase absence Detection	High Voltage Control	Over Voltage Instant-on Protection			Low Voltage Control	Low Voltage Instant-on Protection	Adjustable on Delay	Insufficient - Overfeed Warning	Neutral - Phase Reverse Warning	
GA8201	GRL01	Voltage Protection Relay (Single-Phase Support)	✓	✓			✓	✓		✓	✓	A	✓	A	✓	✓	✓	✓	Single-Phase	3 Phase - Neutral
GA8202	GRL02	Voltage Protection Relay(Three-Phase support)	✓	✓		✓	✓			✓	✓	A	✓	A	✓	✓	✓	✓	Three-Phase	3 Phase - Neutral
GA8203	GRL03	Voltage Protection Relay W/Phase Sequence	✓	✓		✓	✓		✓	✓	✓	A	✓	A	✓	✓	✓	✓	Three-Phase	3 Phase - Neutral
GA8211	GRL11	Voltage Protection Relay W/O Neutral	✓		✓		✓			✓	✓	A	✓	A	✓	✓	✓	✓	Three-Phase	3 Phase
GA8212	GRL12	Voltage Protection Relay W/Phase Sequence W/O Neutral	✓	✓		✓	✓		✓	✓	✓	A	✓	A	✓	✓	✓	✓	Three-Phase	3 Phase

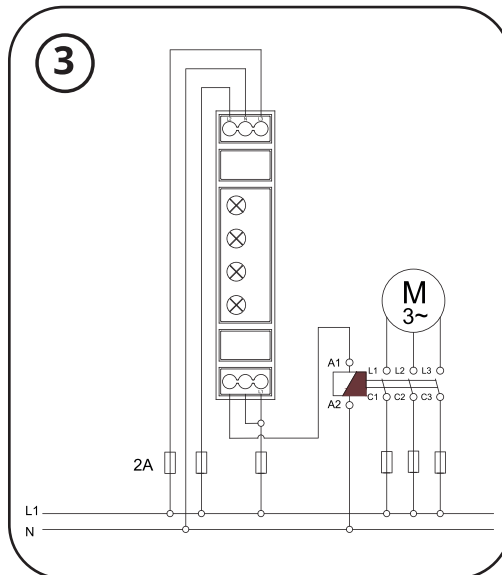
CONNECTION DIAGRAM



1
Voltage Protection Relays 3
Phase Connection Diagram

2
Voltage Protection Relays 2
Phase Connection Diagram

3
Voltage Protection Relays 1
Phase Connection Diagram

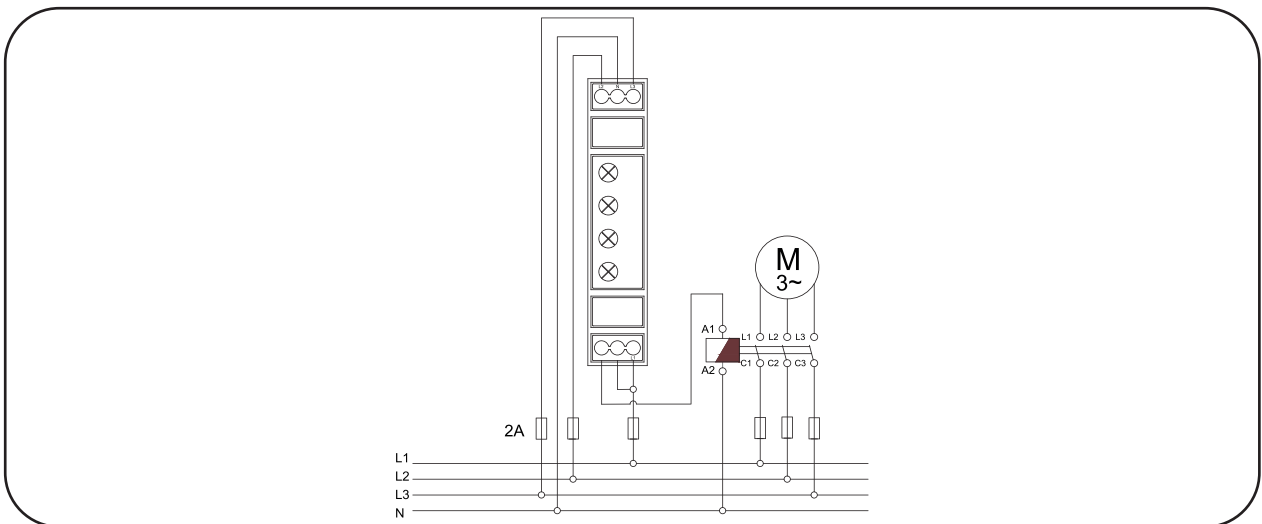


PHASE PROTECTION RELAYS



Product code	Product name	Product Description	Contact output	Neutral Connection	Non-Neutral Connection	Neutral Break Detection	Phase Sequence Control	Phase absence Detection	Fixed Asymmetry	Adjustable Asymmetry	Adjustable Pull delay	Adjustable on Delay	Insufficient - Overfeed Warning	Low Voltage Control	High Voltage Control	supply
			1N/O, 5A, 1385 VA													
GA8301	FAZ01	Phase Protection Relays(%20 Asymmetry)	✓	✓		✓	✓	✓	20%				✓			3 Phase - Neutral
GA8302	FAZ02	Phase Protection Relays (%5-35 Adjustable Asymmetry)	✓	✓		✓	✓	✓		5-35%	✓	✓	✓			3 Phase - Neutral
GA8303	FAZ03	Phase Protection Relays W/Phase Sequence (%40 Asymmetry)	✓	✓		✓	✓	✓	40%				✓			3 Phase - Neutral
GA8304	FAZ04	Phase Protection Relays W/Phase Sequence (%5-35 Adjustable Asymmetry)	✓	✓		✓	✓	✓		5-35%	✓	✓	✓			3 Phase - Neutral
GA8311	FAZ11	Phase Protection Relay W/Phase Sequence W/O Neutral (%5-40 Asymmetry)	✓		✓	✓	✓	✓		5-40%			✓			3 Phase
GA8312	FAZ12	Phase Protection Relay W/Phase Sequence W/O Neutral(%5-35 Adjustable Asymmetry)	✓		✓	✓	✓	✓		5-35%	✓	✓	✓			3 Phase
GA8313	FAZ13	Voltage Controlled Phase Protection Relay W/Phase Sequence W/O Neutral (%5-40 Adjustable Asymmetry)	✓		✓	✓	✓	✓		5-40%		✓	✓	A	A	3 Phase

PHASE PROTECTION RELAY CONNECTION DIAGRAM



CONTROL and PROTECTION GROUP PRODUCTS TECHNICAL DRAWING

