

GAMMA-3330

Shunt Reactor Switching Modules
Datasheet



General Description

GAMMA series thyristor modules are designed for switching three-phase shunt reactors up to 30 kVAr for dynamic power factor control applications. The modules activate the shunt reactors with the application of the trigger signal. It has microprocessor-based architecture. Advantages of GAMMA series thyristor modules:

- Up to 400V, star or delta, symmetrical or asymmetrical loads.
- Easy triggering from PFC relays or PLCs.
- Longer life expectancy.
- Instantaneous triggering.
- Monitors status and temperature.
- Protects shunt reactors through external thermostat connections.
- Maintenance free.
- Quiet operation.



Operation

GAMMA modules are ready for operation by properly connecting terminals L1-R1, L2-R2 and L3-R3. After the modules are energized (external supply connections of GAMMA-3310 modules), starts waiting for a trigger signal from the user. With the application of the trigger signal, the thyristors are triggered and the LEDs L1, L2, L3 light up. Thyristors are deactivated by line commutation when the trigger signal is interrupted. There are 3 LEDs on the GAMMA module. The functions of these LEDs are detailed below.

L1, L2, L3 (red): Lights up as soon as the device connections are made correctly, and the relevant trigger signals are given.

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Technical Specifications

Technical specifications presented here are provided for 40°C ambient temperature and 70°C heat sink temperature, unless otherwise specified. Exceeding these guaranteed ratings will significantly reduce module life expectancy.

Nominal Ratings	Units	Min.	Typ.	Max.
Operating Voltage (line-to-line)	V	360	380	400
Operating Current	A	-	-	16
Trigger Voltage	V	-	24	-
Absolute Maximum Ratings		Typ.		
Blocking Voltage	V	1600		
Current Time Rate of Change (di/dt)	A/ μ s	50		
Voltage Time Rate of Change (dV/dt)	V/ μ s	1000		
$\bar{P}t$ (10 ms)	A ² s	720		
Heat sink Temperature	°C	75±5		
Ambient Temperature at Full Load	°C	45		
Storage Temperature	°C	-40~100		
Relative Humidity	%	5~95		
Wiring and Mounting				
Power Cable Cross Section	mm ²	16		
Triggering Wire Cross Section	mm ²	1.5		
Dry Contact Wire Cross Section	mm ²	1.5		
External Thermostat Wire Cross Section	mm ²	1.5		
Size (W x H x D)	mm	162x125x105		
IP Class	-	20		
Weight	kg	2.9		
Operation				
Switching Time	-	Instantaneous		
Repetitive-switching Time	-	10kVAr (3 Phase)		
Power Loss	W	130		
Overheating Fault Temperature	°C	90±5		
Superfast Fuse Current Rating	A	63 (NH AC 690)		

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Wiring Diagram

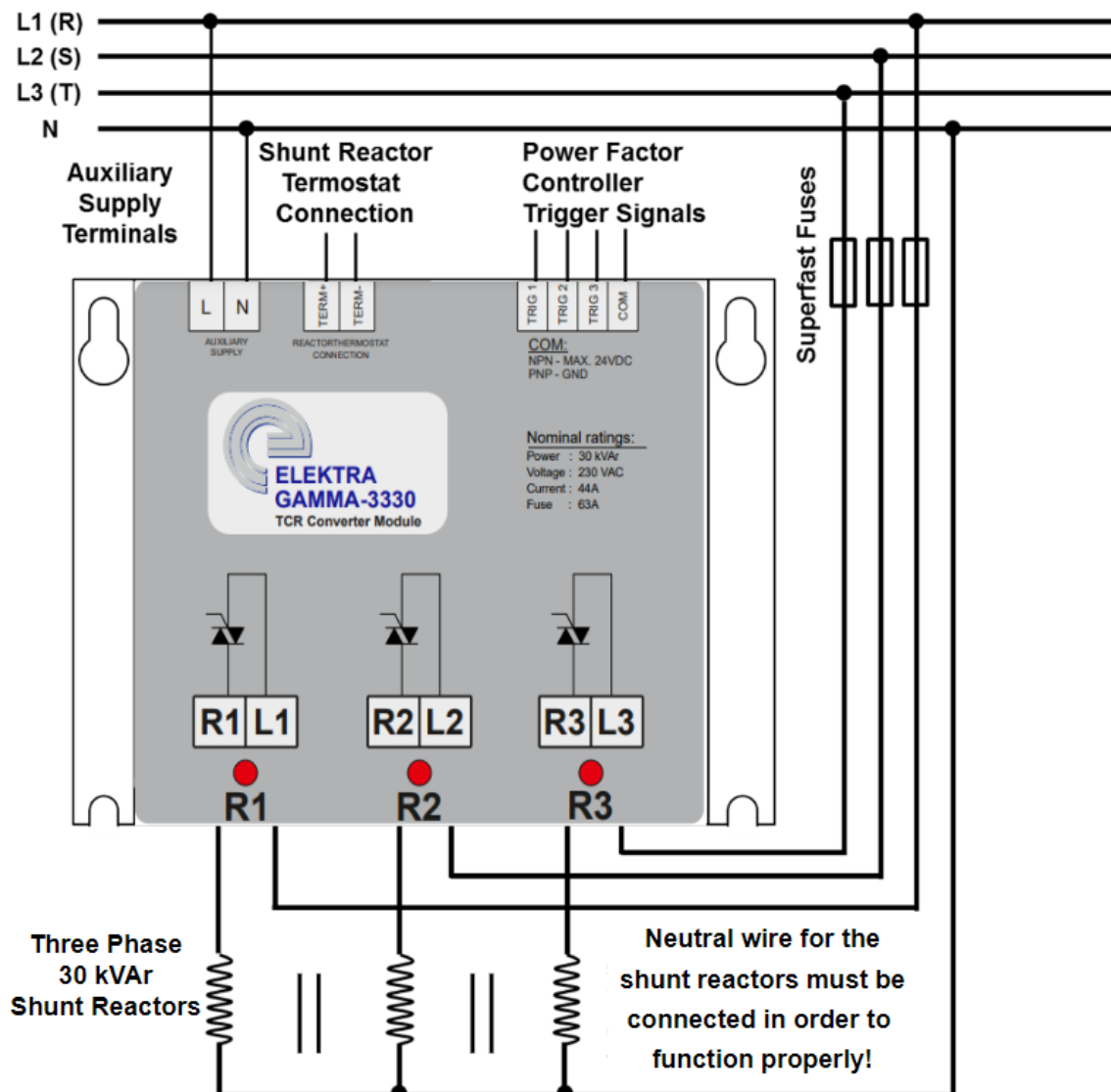


Figure 1: Wiring Schematic of GAMMA-3330 Module

Technical Drawings

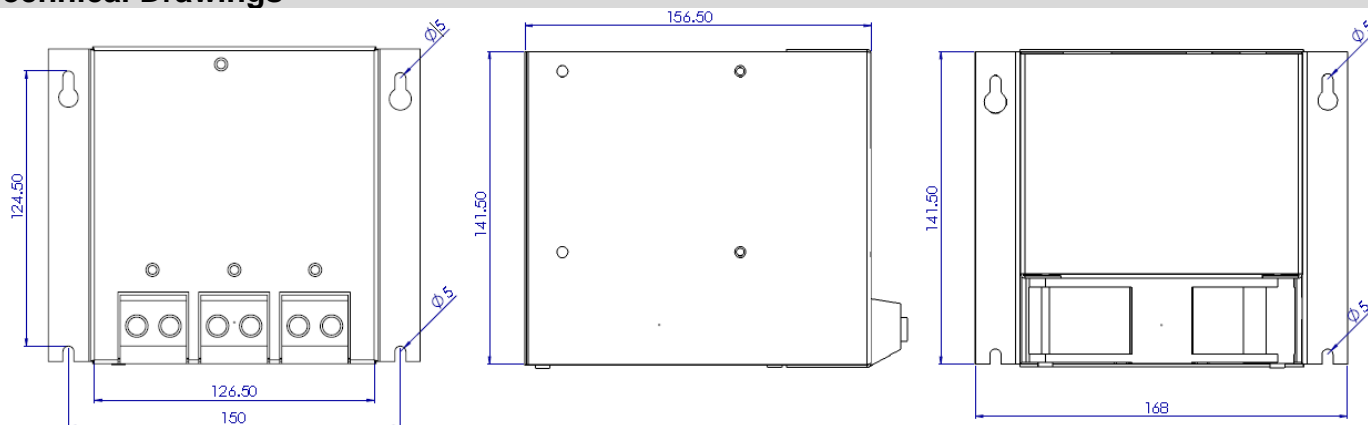


Figure 2: Technical Drawing of GAMMA-3330 Module

Tolerance $\pm 0.5\text{mm}$.

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Cautions

Please follow safety instructions!

- GAMMA modules may only be utilized according to their intended use.
- Appropriate safety measures have to be taken with GAMMA modules, such as using superfast fuses, surge arresters, etc.
- GAMMA modules have to be sufficiently ventilated and protected against dust and humidity.
- GAMMA modules must not be triggered unless all life-threatening risks are eliminated.
- GAMMA modules must be protected by superfast electronic fuses.
- Installation must be done by skilled personnel only.
- Before installation, repair, and maintenance operations, make sure that the power of the system is cut off.

Noncompliance with these instructions and warnings may lead to death, serious injury or major damage to equipment.
FAILURE TO FOLLOW CAUTIONS MAY RESULT IN FAILURES AND/OR PHYSICAL INJURY.s

Terms and Conditions

GAMMA modules are warranted against manufacturing defects for 1 (one) year. If the modules are used with ELEKTRA shunt reactors, then the warranty covers them for 2 (two) years. The modules are out of warranty in case of user error, uses not in accordance with recommended practice presented in this datasheet, internal circuits are tampered with and/or the cover is removed.

The manufacturer is not responsible for:

- Any costs resulting from a failure if the installation, setup, repair, alteration, or ambient conditions of the module do not follow the requirements specified in the documentation delivered with the module and other relevant documentation.
- Modules subjected to misuse, negligence, or accident.

In no event shall the manufacturer, its suppliers or subcontractors be liable for special, indirect, incidental, or consequential damages, losses or penalties. If you have any questions concerning your GAMMA modules, please contact the local distributor or ELEKTRA A.Ş. The technical data, information and specifications are valid at the time of printing. The manufacturer reserves the right to make modifications without prior notice.