

THYRISTOR POWER CONTROLLER THYRO-P

DIGITAL AND WITH COMMUNICATIONS CAPABILITY

Thyro-P thyristor power controllers can be used wherever voltages, currents or powers have to be controlled/set. With a wide band power supply, optional mains load optimization (ASM procedure, a patented world first) and user-friendly user interface, they take in a wide range of applications such as:

- Glass industry
- Furnace construction
- Engineering
- Painting machines and printers
- Chemicals and mineral oil industry
- Furniture industry
- Automotive industry

The Thyro-P is the result of many years of experience with power controllers. Several operating and control types, ease of connection to the process and automation systems, a high level of control accuracy due to the use of a 32-bit RISC processor combined with ease of handling means that the Thyro-P is setting the trend for new applications as well. The use of the most modern mains thyristors means the type series has been extended to a maximum current of 2900 A, an increase of 1000 A.

Parameters can be adapted using menus. The set and actual values of the process can be transferred to automation systems and other equipment via analog outputs or, as an option, using bus systems.



- Ease of handling for rapid and reliable start-up
- High efficiency, zero-wear operation
- Ease of connection of automation equipment via bus systems
- Installed semiconductor fuses
- Transformer load, ohmic load and heating elements with large R_{hot}/R_{cold}
- Safety separated circuit between control and power section that meets VDE 0160
- Integrated soft-starting for operation with down-circuit transformer
- Connection to SELV/PELF circuit
- Dynamic mains load optimization (patented process, ease of handling)
- Quality standard to DIN EN ISO 9001
- Wide band power supply for control voltage
- UL certification
- 6 LED status messages
- **CE** compliant
- Collective fault message via relay
- Error memory with event time
- Integrated load circuit monitoring
- Graphics-capable control options



THYRISTOR POWER CONTROLLER THYRO-P

TECHNICAL DATA

TYPE	Type 1P	Type 2P	Type 3P
Rated connection voltage (V)	230 – 400; 500; 690 ± 10 %	3 x 230 – 400; 500; 690 ± 10%	3x230 – 400; 500; 690 ± 10%
Circuit	single-phase	3-ph. economy circuit	3-ph. circuit
Control voltage	AC 200 V (-20%) to 500 V (+10%); 50 – 60 Hz		
Communications-capable	see bus interfaces		
Operating mode	Thyro-pulse, Thyrovar Softstart-Softdown	Thyro-pulse Softstart-Softdown	Thyrovar Softstart-Softdown
Current 230 V; 400 V; 500 V (A)	37; 75; 110; 130; 170; 280; 2100; 2900	495; 650; 1000; 1500 2000; 2750	1850; 2600
Current 690 V (A)	80; 200; 300; 780; 1400 2000; 2600	1850; 2400	1700; 2200
Frequency	50 – 60 Hz ± 3 Hz		
Usable for	ohmic load, transformer load		
Setpoint input	0 – 20 mA; 0 – 5 V; 0 – 10 V		
Control start/finish	can be set as desired		
Control possibility	U-voltage, U ² -voltage, I-current, I ² -current, P-power, without control		
Act. value outputs	qty. 3, either 0 – 20 mA, 4 – 20 mA or 0 – 10 V		
Load circuit and self-monitoring	provided		
Operation indicators	via LED		
Fault message	via fault signalling relay		
Error memory	16 messages with event time		
Interfaces	RS232 and fiber optic		
OPTIONS			
Local control and display unit (LBA)	pluggable, operation, parameter setting and display with menus, copy function, 7 x 19 digit display, graphics-capable (line diagrams)		
Cabinet installation kit (SEK)	installation kit for LBA with cable, suitable for installation in switch cabinet door		
Thyrotool-P	PC software with functions such as: loading, saving, editing, comparing and printing parameters, set and actual value processing, line diagrams of process data (with print option), bar charts, simultaneous display of process data from various power controllers, simultaneous connection of up to 998 Thyro-P power controllers.		
Bus interfaces	adapter modules for plugging into the Thyro-P control unit. Interface to various bus systems, e.g. Profibus.		
ASM procedure (patented)	automatic synchronization of multiple power controller applications for dynamic load optimization. minimizes mains load peaks and related system perturbation components.		
GENERAL DATA			
Operating temperature	up to type current 170 A: -10 °C to +45 °C (natural air cooling) from type current 280 A: -10 °C to +35 °C (forced cooling)		
Storage temperature	-25 °C to +70 °C		EN 60146
Humidity class	DIN 40040 "F"		DIN EN 50178 table 7
Site altitude	up to 1000 m above sea level at nominal load		
Test voltage	to VDE 0160, tab. 6		DIN EN 50178 table 18
Device operating conditions	installation device configured to: VDE 0160 5.5.1.3		
Contamination class	2 to VDE 0106 part 100		DIN EN 50178
Surge voltage category	ÜIII to VDE 0110 part 1		DIN EN 50178 table 2
Safe isolation	VDE 0160 5.6		DIN EN 50178 table 3
Application position	VDE 0875 part 3		DIN EN 50178 chapter 3
Version	VDE 0558 part 1		CISPR 3
Radio interference suppression of control unit, class A			DIN EN 60146
Installation	vertical		
Connection	from below/front		

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