

### THYRISTOR POWER CONTROLLER THYRO-A

#### UNIVERSALLY APPLICABLE

The thyristor power controllers of type Thyro-A, consisting of the series A and AX, are used in every field of modern process technology. This includes furnace building (industrial and diffusion furnaces, drying ovens) machine building (extrusion and plastic presses), the chemical industry (pipe-heating and pre-heating systems), the automobile industry (paint-drying facilities), printing machines (IR drying) and the packaging industry (shrink tunnels).

The Thyro-A units are electronic controllers with antiparallel thyristors for AC or 3-phase current. They are activated by a set-value signal and control or switch the electrical power for a consumer rapidly, reliably and free of contact. This takes place either in the Thyrotakt full oscillation cycle mode (i.e. complete mains cycles are either switched on or off), or in the Thyrovar phase-angle mode. The Thyro-A, series A contains the most important basic functions whereas the series AX offers additional possibilities of control as well as monitoring and signaling functions.

The following functions can be set by means of DIP-FIX switches and potentiometers: operating mode, load type, set-value input e.g. 0 – 20mA/0 – 5 V, control initiation "life zero" of the control characteristic line, control method, load monitoring.



- Thyristor power controller Thyro-A
- Secure separation between control and power units VDE 0160
- Connection to SELV circuit
- High efficiency
- Wear-free operation
- Integrated semiconductor fuses
- Thyristor power controller Thyro-A, series AX
- Integrated load-circuit and self monitoring
- Integrated soft start for operation with downstream transformer
- Central fault signal via fault-signaling relay and LED
- Synchronization of several thyristor controllers possible in Thyrotakt mode
- Quality standard to ISO 9001
- CE-compliant



# THYRISTOR POWER CONTROLLER THYRO-A

## TECHNICAL DATA

TYPE SERIES	1A A	2A A	1AX AX	2AX AX	3AX AX
<b>Rated connected voltage</b>	230 ; 400 ; 500 V; 450 V on request				
<b>Type current 230 ; 400 V (A)</b>	30 ; 45 ; 60 ; 100 130 ; 170 ; 280	30 ; 45 ; 60 ; 100 130 ; 170 ; 280	30 ; 50 ; 80 ; 110 130 ; 170 ; 280	30 ; 50 ; 80 ; 110 130 ; 170 ; 280	30 ; 50 ; 80 ; 110 170 ; 280
<b>Type current 500 V (A)</b>	40 ; 60 ; 100 130 ; 170 ; 280	40 ; 60 ; 100 130 ; 170 ; 280	40 ; 80 ; 110 130 ; 170 ; 280	40 ; 80 ; 110 130 ; 170 ; 280	40 ; 80 ; 110 170 ; 280
<b>Circuit</b>	single phase	3-ph. econ. circuit	single phase	3-ph. econ. circuit	3-phase
<b>Operating mode</b>	Thyrotakt Thyrovar	Thyrotakt –	Thyrotakt Thyrovar	Thyrotakt –	– Thyrovar
<b>Control functions</b>	voltage – –	voltage – –	U2 voltage I2 current P power	U2 voltage I2 current P power	U2 voltage I2 current P power
<b>Load-circuit monitoring in Thyrotakt mode</b>	–	–	under- or overcurrent	load asymmetry	–
<b>Thyro-A monitoring</b>	–	–	yes	yes	yes
<b>Operation indication</b>	–	–	via LED	via LED	via LED
<b>Fault signal</b>	–	–	via LED fault-signal relay	via LED fault-signal relay	via LED fault-signal relay
<b>UL approval</b>	UL file, E 135074	UL file, E 135074	–	–	–
<b>Frequency</b>	50 ; 60 Hz $\pm$ 3 Hz $\pm$ 15 %				
<b>Applicable for</b>	ohmic load, transformer load				
<b>Set-value input</b>	0 – 20 mA ; 0 – 5 V				
<b>Control initiation "Life zero"</b>	adjustable				
<b>Operating-temperature range</b>					
- to type current 170 A	–10°C to + 45°C	–10°C to + 45°C	–10°C to + 45°C	–10°C to + 45°C	–10°C to + 45°C
- to type current 280 A	–10°C to + 35°C	–10°C to + 35°C	–10°C to + 35°C	–10°C to + 35°C	–10°C to + 45°C
<b>Storage-temperature range</b>	– 25°C to + 70°C				
<b>Humidity class</b>	DIN 40040 "F"				
<b>Installation height</b>	max. 1000 m amsl at nominal load				
<b>Test voltage</b>	to VDE 0160 table 6				
<b>Conditions of use</b>	fitted unit designed to VDE 0160 5.5.1.3				
<b>Contamination category</b>	2 to VDE 0106 part 100				
<b>Overvoltage category</b>	ÜIII to VDE 0110 part 1				
<b>Safe isolation</b>	VDE 0160 5.6				
<b>Location of use</b>	VDE 0875 part 3				
<b>Design</b>	VDE 0558 part 1				
<b>Installation</b>	vertical				
<b>Size w x h x d (mm)</b>					
30 A ; 40 A ; 45 A ; 50 A	70 x 173 x 135	140 x 173 x 135	70 x 223 x 135	140 x 223 x 135	210 x 223 x 135
60 A ; 80 A ; 100 A ; 110 A	85 x 173 x 170	170 x 173 x 170	85 x 223 x 170	170 x 223 x 170	255 x 223 x 170
130 A ; 170 A	125 x 320 x 227	250 x 320 x 227	125 x 320 x 227	250 x 320 x 227	431 x 320 x 280
280 A	125 x 370 x 227	250 x 393 x 227	125 x 370 x 227	250 x 393 x 227	431 x 320 x 280
<b>Connections</b>	from below				

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