

Thyro-AX™

Thyristor Power Controller (SCR)

16 A - 1,500 A

With numerous new performance features the Thyro-AX is recognized as the new generation of digital thyristor power controllers within Advanced Energy's established Thyro-Family.



parameterization, completely new options are offered. Set- and actual points as well as operating modes etc. are shown in plain text. Operating modes are signalized via changing background lighting. In addition to the standard interfaces, Ethernet as well as USB2.0 have been added. By Thyro-Tool AX, parameterization via USB2.0 interface is possible even without external supply.

For communication with higher control systems bus modules are available such as DeviceNet, Modbus RTU, PROFIBUS and CANopen as well as TCP/IP based communication incl. PROFINET, Modbus TCP and EtherNet/IP.

The new series of Thyro-AX supports voltages from 24 V to 600 V and offering a product scope from 16 A to 1,500 A available as single, dual and three-phase units. With flexible connection technology the power controller can be connected from below and/or from above.

The full graphic touch display allows the user a high level of intuitive unit operation. Regarding the handling of the power controller, especially for visualization and

A further important and specific feature of the new generation is the application of intelligent technologies to compensate system perturbations as well as mains load optimization to reduce costs.

Including e. g.:

- Internal mains load optimization for up to 12 power controllers

Optional:

- Thyro-Power Manager
- dASM bus module (in preparation)

Applications

- Automotive industry (paint drying equipment)
- Chemical industry (pipe trace heaters, pre-heating equipment)
- Crystal growing (sapphire, silicon)
- Furnace construction (industrial, diffusion, drying ovens)
- Glass industry (plate glass equipment, feeders, finishing equipment)
- Crystal growing (sapphire, silicon)
- Machine building industry (extruders, plastic presses)
- Packaging industry (shrink tunnels)
- Printing machines (IR drying)

High efficiency levels to save energy within the ongoing operation mode is a standard for the power controller series Thyro-AX like for all power controllers of the Thyro-Family.

The thyristor power controller Thyro-AX can be used for all applications including heating, melting, forming and drying. Versatile and easy to handle, it is used in many fields of applications in modern process engineering.

Thyro-AX		
Operating modes		
TAKT: full frequency package control	frequency package control	
VAR: phase-angle	firing of each sinus half-wave	
QTM: half-wave frequency package control	quick operating mode for ohmic load without a transformer	
SWITCH: full-wave frequency	switch operating mode, also for transformer load	
Thyro-AX		
1A...	1-phase version for 1-phase load between 2-phases or for 1-phase connected to the neutral phase	
	operating modes: TAKT, VAR, QTM, SWITCH	
2A...	2-phase version for 3-phase load in cost saving 3-phase circuit	
	operating modes: TAKT, SWITCH	
3A...	3-phase version for 3-phase load	
	operating modes: TAKT, VAR, SWITCH	
Rated voltage		
230 V	24 V - 253 V	
400 V	24 V - 440 V	
500 V	24 V - 550 V	
600 V	24 V - 660 V	
Network frequency	for all types from 47 Hz to 63 Hz max. the frequency change is 5 % per half-wave	
Rated current		
...-xxx...	16 A, 30 A, 45 A, 60 A, 100 A, 130 A, 170 A, 230 A, 280 A, 350 A, 495 A, 650 A, 1,000 A, 1,400 A, 1,500 A	
Load types		
	ohmic load employed at a R_{warm}/R_{cold} -ratio up to 6; limitation of $3 \times I_{nom}$; transformer load	
Mains load	internal network load optimization for the operating modes QTM and TAKT interface for external network load optimization available, e.g. Thyro-Power Manager	
Functional features		
...F...	forced ventilation	
...H RLP2	set point inputs	2 set point inputs, 2 digital inputs and 1 switch input
		input of analog set point, signal intervals, each of: 0(4) - 20 mA / 0(1) - 5 V / 0(2) - 10 V
		control input for switch operation mode - dual point control is possible ($U_{ON} = 3 - 24 V$)
		digital set point is provided by the process computer or bus system
	control types	$U_{eff} / U_{eff}^2 / I_{eff} / I_{eff}^2 / P$
	load monitoring	via an adjustable response threshold
	limitations	current limitation I_{eff} current peak limitation to $\hat{I} = 3 \times I_{nom}$ for operation mode VAR
	relay output	exchanger, max. contact load 250 V, 4 A, 180 W, 1,500 VA
	analog output	3 analog outputs each with signal levels of 0(2) - 10 V / 0(4) - 20 mA, max. compliance voltage 10 V
	external supply	85 V - 265 V (47 Hz - 63 Hz)
operational display	via display and relay output (exchanger, indications adjustable)	
System interface		
Serial system interface for connection of optional bus module, e.g. for CANopen, DeviceNet, EtherNet/IP, Modbus RTU, Modbus TCP, PROFINET, PROFIBUS DPV1		



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