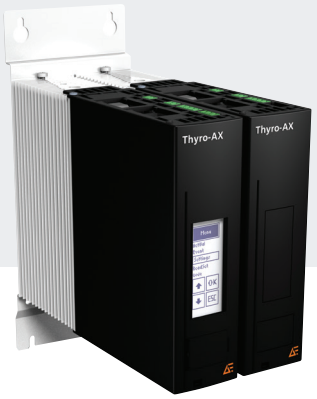
THYRO-AX

DIGITAL THYRISTOR SCR POWER CONTROLLERS

16 TO 1500 AMPS



With numerous new performance features, flexible and reliable handling, and an integrated touch display, the Thyro-AX® SCR power controller precisely and reliably controls power.

PRODUCT HIGHLIGHTS

- Wide performance range with rated currents from 16 to 1500 A and rated voltages from 24 to 600 V
- Single, dual, and three-phase units
- Fully-integrated touch display enabling intuitive operation and advanced visualization and parameterization options
- High efficiency for ongoing energy savings

TYPICAL APPLICATIONS

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

SPECIFICATIONS

Thyro-AX Series	
Operating Modes	
TAKT	Full frequency package control
VAR (phase-angle firing)	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 Model Features	
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 to 253 V
400 V	24 to 440 V
500 V	24 to 550 V
600 V	24 to 660 V
Network Frequency	For all types from 47 to 63 Hz max.
	Frequency change: 5% per half-wave
Rated Current	
...-xxx...	16, 30, 45, 60, 100, 130, 170, 230, 280, 350, 495, 650, 1000, 1400, and 1500 A
Load Types	
Types	Ohmic loads employed at a Rwarm/Rcold-ratio up to 6; limitation of 3 x Inom
	Transformer loads
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 (UOn = 3 to 24 V)
	Digital set point is provided by the process computer or bus system
Control types	U_{eff} / U^2_{eff} / I_{eff} / I^2_{eff} / P
Load monitoring	Via an adjustable response threshold
Limitations	Current limitation Ieff current peak limitation to $\hat{I}$ = 3 x Inom for operation mode VAR
Relay output	Exchanger, max. contact load 250 V, 4 A, 180 W, 1500 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 to 265 V (47 to 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®, DeviceNetTM, EtherNet/IP®, Modbus® RTU, Modbus® TCP, PROFINET®, PROFIBUS® DPV1

SPECIFICATIONS (CONTINUED)

Thyro-AX 1A ...H RLP2

Current (A)	Power (kW)				Power Loss (W)
	230 V	400 V	500 V	600 V	
16	3	6	8		25
30	7	12	15		40
45	10	18	22		51
45			27	61	
60	14	24	30		66
60			36	72	
100	23	40	50	100	116
100			60	130	
130	30	52	65		159
130			78	182	
170	39	68	85		180
170			102	211	
230	53	92	115		280
240			138	332	
280	64	112	140	168	352
350	80	140	175	210	399
1000		400		1317	
1000			500	600	1401
1400			700	840	1721
1500	600			1761	

Thyro-AX 2A ...H RLP2

Current (A)	Power (kW)			Power Loss (W)
	400 V	500 V	600 V	
16	11	14		49
30	21	26		80
45	31	39		121
45			47	
60	41	52		131
60			62	144
100	69	86		231
100			104	260
130	90	112		318
130			135	368
170	117	147		360
170			176	422
230	159	199		600
240			239	664
280	194	242		702
350	242	303	363	79
1000	693			2654
1000		866	1039	2922
1400		1212	1455	3462
1500	1039			3542

SPECIFICATIONS (CONTINUED)

Thyro-AX 3A ...H RLP2				
Current (A)	Power (kW)			Power Loss (W)
	400 V	500 V	600 V	
16	11	14		73
30	21	26		121
45	31	39		151
45			47	182
60	41	52		197
60			62	216
100	69	86		346
100			104	390
130	90	112		475
130			135	544
170	118	147		540
170			176	632
230	159	199		840
240			239	995
280	194	242	291	1054
350	242	303	363	1194
1000	693			3891
1000		866	1039	4143
1400		1212	1455	5102
1500	1039			5223

ORDERING INFORMATION

For ordering information, please contact your local Advanced Energy sales representative.

ABOUT ADVANCED ENERGY

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AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

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