

# Control your Power

## Thyro-A Next Gen Thyristor Power Controller 2 - 1.500A

The success story continues – Just in time for the 50th anniversary of the Thyristor Power Controllers Thyro-A series, the next generation of completely digital Thyro-A modules has now been launched. Named after its famous predecessor, it follows in the footsteps of the world's most successful and top-selling power controller series.

Since the market launch of the very first power controller SEMITAKT in 1961, AEG Power Solutions has understood the importance of know-how, innovation and technology transfer for its products with a focus on the demands and desires of the customer. This is due not least to AEG's position as market leader in the power controller field, and justifiably, customers' first choice.

In use for over a decade in uninterrupted operation for the most diverse applications, the tried and tested Thyro-A power controllers have been rightly considered the standard on the market to date. The new Thyro-A generation has been specially designed to maintain the strengths and advantages of its predecessor, at the same time setting new standards in terms of security, flexibility, operator convenience and handling. Also functionality, accuracy and energy efficiency have been redefined.

Available as one, two and three-phase units, the new Thyro-A series supports voltages of 24V to 600V offering a unique product range of 2A up to 1,500A. It has a new and revolutionary connection concept, FlexConnect, for flexible mains and load connections. A world first is the new power controller's full-graphics touch display which allows for extremely intuitive handling, thus offering new possibilities in terms of visualization and parameter setting.

In addition to Ethernet, USB2.0 is now also included as a standard interface for setting parameters in the power controller even when it is disconnected. As an alternative browser-based option, parameters can also be set and visualization effected by an integrated web server.



Communication-enabled for the interplay between master control systems in the process and automation environment, optional bus modules are now available for TCP/IP- based communication in addition to the traditional field bus protocols. Stand-alone installations or those with direct temperature controls are of course also available.

Suitable for all applications in the fields of heating, melting and casting, the Thyro-A power controllers are also ideally suited for diverse process technology applications including:

- Furnace construction (industrial, diffusion and drying furnaces)
- Glass processing (sheet glass plants, feeders, finishing plants)
- Machine building (extruders, plastic presses)
- Chemical industry (pipe heating, pre-heating equipment)
- Automobile industry (lacquer drying systems)
- Printing machines (IR drying)
- Packing industry (shrink tunnels)

# Highlights/Benefits



Supporting nominal currents of 2A to 1.500A and voltages of 24V to 600V, the new Thyro-A power controller generation caters to the widest power range on the market in one single series. From the wide scope of output levels offered, customers can select the most cost-effective design which is best suited for their specific needs.



A world premiere, a full-graphics touch display, allows for extremely intuitive handling and offers new possibilities in terms of visualization and parameter setting. Setpoints and actual values, parameters, and operating and error modes are displayed in plain text with changing-color backlights.



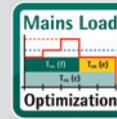
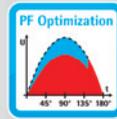
Living up to its name, the menu-guided Easy Start function enables customers to start up the power controllers easily, step-by-step, without in-depth knowledge being required. If desired, customer requirements can be recorded (after replying to a few simple questions) and automatically implemented as parameters.



In addition to Ethernet, USB2.0 is now also included as a standard interface for setting parameters in the power controller even when it is disconnected from the mains. Further functions such as parameter management, data recording and logging via USB stick are soon to be available.



As an alternative to parameter setting and visualization by touch display or Thyro-Tool software via USB, another browser-based option is available: an integrated web server that can be accessed via PC or Notebook. Remote access is also available via inhouse networks or, if desired via the Internet.



Revolutionary and unique, our new connection concept, FlexConnect, represents a new dimension in terms of flexibility. The well-planned design enables mains and load lines to be connected alternatively from the top or the bottom of the unit. This allows the Thyro-A to be integrated cost-effectively into any installation.



The units in the Thyro-A series are available in one, two and three-phase designs. The 2-A version used in TAKT mode also includes a three-phase power controller with two power circuits. This is ideally suited for three-phase, two-leg economic circuits that reduce investment costs and power loss considerably.



In addition to passive cooling and forced air cooling, the new Thyro-A generation offers an array of other sophisticated cooling concepts as well. Even the standard units can be cooled directly via existing water cooling systems, or as a further option, via adapter plates directly fixed to water-cooled back panels.



MultiCom stands for the most versatile communication spectrum on the market by far. Optional bus systems for standard field buses such as Modbus RTU, DeviceNet, Profibus DPV1 and CANopen can be used as well as modern TCP/IP-based real-time Ethernet systems such as Profinet, Ethernet IP and Modbus TCP.



The current Thyro-A series is unquestionably the most widely sold power controller in the world. That is why AEG has ensured that the current series and the new generation of power controllers are compatible. Even though the scope of functions of the new series has been considerably extended, the overall width remains the same, thereby ensuring easy replacement of the units.

## Specification – type series and technical data (excerpt)

<b>Operating Modes</b>	TAKT, burst firing control	full wave switching	
	VAR, phase-angle	firing of each sinus half-wave	
	QTM, half-wave switching control	quick operating mode for ohmic load without a transformer	
	VAR, full wave	switch mode	
<b>Thyro-A</b>	1A...	single-phase version, for single-phase load between dual phases, or for a single phase connected to the neutral phase Operating modes: TAKT, VAR, QTM, SWITCH	
	2A...	dual-phase version for three-phase load in cost-saving three-phase circuit Operating mode: TAKT, SWITCH	
	3A...	three-phase version, for three-phase load Operating modes: TAKT, VAR, SWITCH	
	Rated Voltage ...H RL2 and H RLP2	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	of all types ranging from 47 Hz to 63 Hz Max. frequency change 5 % per half-wave	
<b>Rated Current</b>	...-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 Type	Load types for ohmic load employed at a $R_{warm}/R_{cold}$ ratio of up to 6; Transformerload	
	Network load	optimization via internal network load optimization for the operating modes QTM and TAKT Interface for external network load optimization available, e.g. Thyro-Power Manager	
<b>Functional Features</b>	...F...	forced ventilation	
		Setpoint inputs	2 analogue setpoints, 2 digital setpoints, 1 digital input
			Input of analog setpoint, signal intervals: 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)
			The digital setpoint is provided by the process computer or bus system
	...H RL2	Control types	$U_{eff}$ , $U_{eff}^2$ , $I_{eff}$ , $I_{eff}^2$
		Load monitoring	via an adjustable response threshold
		Limitations	current limitation $I_{eff}$ , $\hat{I}$ in VAR mode, current peak limitation to $\hat{I} = 3 \times I_{nom}$
		Relay output	exchanger, max. contact load 250 V, 6 A, 180 W, 1500 VA
		Analog output	3 analogue outputs each signal level 0(2)-10 Volt / 0(4)-20 mA, maximum voltage 10 V
		external supply	85 V - 265 V (47 Hz - 63 Hz)
		Operational display	via display and relay outputs (changeover, indications adjustable)
	...H RLP1	functional features	as ... H RL2, however
		control types	$U_{eff}$ , $U_{eff}^2$ , $I_{eff}$ , $I_{eff}^2$ , P, R
	<b>System interface</b>	Optional bus module for Profibus DPV1, Modbus RTU, DeviceNet, CANopen, ProfiNet. Projected:	
ModBus TCP/IP, Ethernet IP, USB, Ethernet for interfacing the PC software of the Thyro-Tool Family version 2			
<b>Examples regarding the type key</b>	Thyro-A 2A 400-170 HRLP2		
	2A = dual phase version for three phase load in cost-saving three-phase circuit, 400 = 400 V rated voltage		
	170 = 170 A rated current, H = semi-conductor fuse, R = failure indicator relay		
	L = load monitoring + analog output, P = performance control display, 2 = Next Gen		

AEG is a registered trademark used under license from AB Electrolux.

AEG Power Solutions GmbH  
Emil-Siepmann-Str. 32  
59581 Warstein-Belecke  
Germany  
Tel.: +49 2902 763 520  
Fax: +49 2902 763 1201

www.aegpowercontrollers.com · www.aegps.com

PERFECT IN FORM AND FUNCTION