



THYRO-S[®]
DIGITAL THYRISTOR SWITCH
8 TO 350 A





**Digital,
connection-ready
design;** accurate, reli-
able performance

The digital, communication-enabled Thyro-S® thyristor switch provides a comprehensive set of advanced functions to suit the exacting requirements of a wide variety of applications and process technologies.

Features

- › For ohmic or transformer loads
- › Current, voltage, or power switching
- › 230, 400, or 500 V
- › 8 to 350 A
- › Integrated semiconductor fuse
- › Secure isolation between control and power sections
- › 1-, 2- and 3-phase versions of Thyro-S units
- › DIN rail mounting for 8 A, 16 A, 30 A
- › LED status and level indication
- › USB interface

Applications

- › Automotive (paint drying equipment)
- › Chemical (pipe trace heaters, pre-heating equipment)
- › Furnace construction (industrial, diffusion, drying ovens)
- › Glass processing (drying coatings)
- › Machine building (extruders, plastic presses)
- › Packaging (shrink tunnels)
- › Printing machines (IR drying)

RELIABLE, FAST, ECONOMIC, AND COMMUNICATION-ENABLED

The high-efficiency, connection-ready Thyro-S® thyristor switch delivers accurate, reliable, switch-free performance. It can be connected to bus systems, used as a standalone unit, or used in combination with all established two-point process controllers, PLCs, or computer systems. With simple mounting, minimal space requirements, quick commissioning, and safe operation, Thyro-S thyristor switches are easily integrated into a wide range of applications.

INTEGRATION WITH AUTOMATION SYSTEMS

- › Serial design system interface for connection to an optional bus module (Profibus® DPV1, Modbus® RTU, DeviceNet™, CANopen®, Profinet®, Modbus® TCP, EtherNet/IP®)
- › 24 V (> 3 V) or standard system interface logic signal control

CERTIFICATION AND COMPLIANCE

- › UL 508A (100 kVA SCCR)
- › CE
- › ISO 9001 quality standards
- › Canadian National Standard C22.2 No. 14-95

ADDITIONAL FEATURES FOR H RLP3 MODEL

- › 24 VAC/VDC external electronic power supply
- › Load monitoring
- › Alarm relay
- › Power measurement
- › Analog output



THYRO-S SERIES

Models

1S....	1-phase version for 1-phase load between 2-phases or for 1-phase connected to the neutral phase
2S....	2-phase version for 3-phase load in cost saving 3-phase circuit
3S....	3-phase version for 3-phase load

Rated Voltage ...H 3

230 V -57% + 10%	H 3 types
230 V -15% + 10%	H RLP3 types > 99 V using an external 24 V electronic power supply
400 V -57% + 10%	H 3 types
400 V -15% + 10%	H RLP3 types > 172 V using an external 24 V electronic power supply
500 V -57% + 10%	H 3 types
500 V -15% + 10%	H RLP3 types > 215 V using an external 24 V electronic power supply

Operating Specifications

Network Frequency	All types from 47 to 63 Hz Max. frequency change 5% per half-wave
Load Types	Ohmic loads and transformer loads
Relay Output	1 changeover contact

Rated Current

...-xxx...	8 A, 16 A, 30 A, 45 A, 60 A, 100 A, 130 A, 170 A, 280 A, 350 A
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Digital Set Point Inputs

Set Point 1	Logical input DC 0 ... 24 V $R_i > 3.3 \text{ k}\Omega$ ON > 3 V
Set Point 2	System interface, connection to controlling automation system via optional bus module is possible

Load Types

Types	Ohmic loads Transformer loads
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System Interface

Optional bus module for Profibus® DPV1, Modbus® RTU, DeviceNet™, CANopen®, Profinet®, Modbus® TCP, Ethernet/IP®
Thyro-Tool PC software via USB interface

Environmental Specifications

Ambient Temperature	35°C (95°F) external fan cooling (F-type, with integrated fan) 45°C (113°F) passive convection cooling Operation at higher temperature is possible with reduced current limits: Temperature range up to 55°C (131°F): rated current -2%/°C UL applications: max. 40°C (104°F)
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Type Key Example

Type Key	Thyro-S 2S 400-280 HF RLP3
Explanation	Thyro-S Digital power controller
	2A Thyro-S as 2-phase version, suitable for 3-phase load in cost-saving 3-phase circuit
	400 400 V rated voltage
	-280 280 A rated current
	H Semiconductor fuse
	F Forced ventilation
	R Failure indicator relay
	L Load monitoring, incl. analog output
	P Power measurement
	3 Additional Thyro-S series identification

THYRO-S 1S H 3/H RLP3 SINGLE-PHASE POWER CONTROLLER



...H 3	...H RLP3	Current (A)	Unit Rating (kVA)			Power Loss (W)	Dimensions			Approx. Weight
			230 V	400 V	500 V		W	H	D	
		8	3.2	3.2	4	9	45 mm (1.8")	136 mm (5.4")	129 mm (5.1")	0.7 kg (1.5 lb)
		16	3.7	6.4	8	30	45 mm (1.8")	136 mm (5.4")	129 mm (5.1")	0.7 kg (1.5 lb)
		30	6.9	12	15	47	45 mm (1.8")	136 mm (5.4")	129 mm (5.1")	0.7 kg (1.5 lb)
		45	10	18	22.5	52	52 mm (2.0")	203 mm (8.0")	184 mm (7.2")	1.7 kg (3.8 lb)
		60	14	24	30	80	52 mm (2.0")	203 mm (8.0")	184 mm (7.2")	1.7 kg (3.8 lb)
		100	23	40	50	105	75 mm (3.0")	203 mm (8.0")	193 mm (7.6")	1.9 kg (4.2 lb)
		130	30	52	65	150	125 mm (4.9")	320 mm (12.6")	241 mm (9.5")	4 kg (8.8 lb)
		170	39	68	85	210	125 mm (4.9")	320 mm (12.6")	241 mm (9.5")	4 kg (8.8 lb)
...F...	...F...	280	64	112	140	330	125 mm (4.9")	370 mm (14.6")	241 mm (9.5")	5 kg (11.0 lb)
...F...	...F...	350	80	140	175	390	125 mm (4.9")	400 mm (15.8")	261 mm (10.3")	8.4 kg (18.5 lb)

THYRO-S 2S H 3/H RLP3 DUAL-PHASE POWER CONTROLLER FOR THREE PHASE LOADS WITH THREE-PHASE CIRCUIT



...H 3	...H RLP3	Current (A)	Unit Rating (kVA)		Power Loss (W)	Dimensions			Approx. Weight
			400 V	500 V		W	H	D	
		8	6	7	18	89 mm (3.5")	136 mm (5.4")	129 mm (5.1")	1.4 kg (3.1 lb)
		16	11	14	60	89 mm (3.5")	136 mm (5.4")	129 mm (5.1")	1.4 kg (3.1 lb)
		30	21	26	94	89 mm (3.5")	136 mm (5.4")	129 mm (5.1")	1.4 kg (3.1 lb)
		45	31	39	96	104 mm (4.1")	203 mm (8.0")	184 mm (7.2")	3.4 kg (7.5 lb)
		60	42	52	160	104 mm (4.1")	203 mm (8.0")	184 mm (7.2")	3.4 kg (7.5 lb)
		100	69	87	210	150 mm (5.9")	203 mm (8.0")	193 mm (7.6")	3.8 kg (8.4 lb)
		130	90	112	300	250 mm (9.8")	320 mm (12.6")	241 mm (9.5")	8 kg (17.6 lb)
		170	118	147	420	250 mm (9.8")	320 mm (12.6")	241 mm (9.5")	8 kg (17.6 lb)
...F...	...F...	280	194	242	660	250 mm (9.8")	393 mm (15.5")	241 mm (9.5")	11 kg (24.3 lb)
...F...	...F...	350	242	303	780	250 mm (9.8")	430 mm (16.9")	261 mm (10.3")	16.7 kg (36.9 lb)



THYRO-S 3S H 3/H RLP3 THREE-PHASE POWER CONTROLLER

....H 3H RLP3	Current (A)	Unit Rating (kVA)		Power Loss (W)	Dimensions			Approx. Weight
			400 V	500 V		W	H	D	
		8	6	7	27	135 mm (5.3")	136 mm (5.4")	129 mm (5.1")	2.1 kg (4.6 lb)
		16	11	14	90	135 mm (5.3")	136 mm (5.4")	129 mm (5.1")	2.1 kg (4.6 lb)
		30	21	26	141	135 mm (5.3")	136 mm (5.4")	129 mm (5.1")	2.1 kg (4.6 lb)
		45	31	39	144	156 mm (6.1")	203 mm (8.0")	184 mm (7.2")	5.1 kg (11.2 lb)
		60	42	52	240	156 mm (6.1")	203 mm (8.0")	184 mm (7.2")	5.1 kg (11.2 lb)
		100	69	87	315	225 mm (8.9")	203 mm (8.0")	193 mm (7.6")	5.7 kg (12.6 lb)
		130	90	112	450	375 mm (14.8")	320 mm (12.6")	241 mm (9.5")	12 kg (26.5 lb)
		170	118	147	630	375 mm (14.8")	320 mm (12.6")	241 mm (9.5")	12 kg (26.5 lb)
...F...	...F...	280	194	242	990	375 mm (14.8")	393 mm (15.5")	241 mm (9.5")	15 kg (33.1 lb)
...F...	...F...	350	242	303	1170	375 mm (14.8")	430 mm (16.9")	261 mm (10.3")	25.5 kg (56.2 lb)



For international contact information, visit advanced-energy.com.