

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.

## APPLICATIONS

- › Automotive (e.g. paint drying equipment)
- › Chemical (pipe trace heaters, pre-heating equipment)
- › Furnace construction (industrial, diffusion, drying)
- › 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.

## KEY FEATURES

- › For ohmic or transformer loads
- › Current, voltage, or power switching
- › 230, 400, or 500 V
- › 16 to 280 A
- › Integrated semiconductor fuse
- › Secure isolation between control and power sections
- › Three-phase design by connecting two Thyro-S units
- › DIN rail mounting for 16 A, 30 A, 45 A, 60 A

## ADVANCED COMMUNICATION AND CONTROL

- › Standard system interfaces for connection to an optional bus module:
  - EtherNet/IP®
  - CANopen®
  - DeviceNet™
  - Modbus RTU®
  - Modbus TCP®
  - PROFIBUS® DPV1
  - PROFINET®
- › LED status messages
- › 1:1 operating mode, as well as 1:2, 1:3, 1:5 for commissioning
- › 24 V (> 3 V) or standard system interface logic signal control

## CERTIFICATION AND COMPLIANCE

- › UL 508A (100 kVA SCCR)
- › CE
- › ISO 9001 quality standards

## ADDITIONAL FEATURES FOR H RL1 MODEL

- › 24 VAC/VDC external electronic power supply
- › Load monitoring
- › Alarm relay



## SUMMARY SPECIFICATIONS: THYRO-S H 1 AND THYRO-S H RL1

Type	Current (A)	Unit Rating (kW)			Power Loss (W)	Dimensions (mm)			Weight (kg)
		230 V	400 V	500 V		W	H	D	
	16	3.7	6.4	8	30	45	121	127	0.7
	30	6.9	12	15	47	45	121	127	0.7
	45	10	18	22.5	48	52	190	182	1.7
	60	14	24	30	80	52	190	182	1.7
	100	23	40	50	105	75	190	190	1.9
	130	30	52	65	150	125	320	237	4
	170	39	68	85	210	125	320	237	4
...F...	280	64	112	140	330	125	370	237	5

### RATED VOLTAGE

230 V -57% + 10%	H 1 types
230 V -15% + 10%	H RL1 types > 99 V using an external 24 V electronic power supply
400 V -57% + 10%	H 1 types
400 V -15% + 10%	H RL1 types > 172 V using an external 24 V electronic power supply
500 V -57% + 10%	H 1 types
500 V -15% + 10%	H RL1 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

#### Operating Modes<sup>1</sup>

1:1	All full-waves (default setting) <sup>2</sup>
1:2	Every 2nd full wave cycle <sup>2</sup>
1:3	Every 3rd full wave cycle <sup>2</sup>
1:5	Every 5th full wave cycle <sup>2</sup>

#### 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

#### System Interface

Connections	Optional bus module for Profibus <sup>®</sup> DPV1, Modbus <sup>®</sup> RTU, DeviceNet <sup>™</sup> , CANopen <sup>®</sup> , Profinet <sup>®</sup> , Modbus <sup>®</sup> TCP, Ethernet/IP <sup>®</sup> PC software Thyro-Tool Family via PC adapter
-------------	--

#### Environmental Specifications

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

<sup>1</sup> Load signal (for digital set point = ON)

<sup>2</sup> Without direct current ratio