

# Thyro-S

## THYRISTOR SWITCH

### SECURE, FAST, ECONOMIC AND COMMUNICATION-ENABLED

The digital, communication-enabled thyristor switch Thyro-S is equipped for an extended application field with numerous advanced functions supporting the system features of the user.

As a connection ready thyristor switch with secure operational behavior and load monitoring, it switches electric loads, e.g. current, voltage, power. It can be connected to bus systems, used as standalone operation, or used in combination with all established 2-point process controllers, PLC or computer systems.

Owing to simple mounting, quick commissioning and safe operating, the Thyro-S can be integrated easily into the wide field of applications in today's process technology, e.g.:

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

#### KEY FEATURES

In addition to wear-free operation and high efficiency further features of this product series include:

- » Simple handling and small space requirements
- » Rated voltages 230 V, 400 V, 500 V



- » Rated currents 16 A - 280 A
- » Integrated semiconductor fuse
- » Standard system interface for connection to an optional bus module (e.g. for PROFIBUS DPV1, Modbus RTU, CANopen, DeviceNet)
- » LED status display
- » Operating modes 1:1, as well as 1:2, 1:3, 1:5 (e.g. for commissioning)
- » Logical signal control of 24 V (> 3 V) or standard system interface
- » Secure isolation between control and power sections
- » 3-phase design by connecting two Thyro-S units
- » Isolation between control and power sections
- » UL approval of UL 508 A (100,000 A S.C.C.R.)
- » Quality standards in accordance with ISO 9001
- » CE-compliant

#### additional for H RL1 type

- » external electronic power supply 24 V AC/DC
- » load monitoring
- » alarm relay

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TYPE SERIES AND TECHNICAL  
DATA (EXCERPT)

Thyro-S 1S H1, H RL1	Current (A)	Unit rating (kW)			Power loss (W)	Dimensions (mm)			Weight (kg) approx.
		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	52	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 %;			for H1					
	230 V – 15 % + 10 %;			> 99 V for H RL1 with additional 24V electronic power supply					
	400 V – 57 % + 10 %;			for H 1					
	400 V – 15 % + 10 %;			> 172 V for H RL1 with additional 24V electronic power supply					
	500 V – 57 % + 10 %;			for H 1					
	500 V – 15 % + 10 %;			> 215 V for H RL1 with additional 24V electronic power supply					
NETWORK FREQUENCY									
	of all types ranging from 47 Hz to 63 Hz								
	max. frequency change 5% per half-wave								
LOAD TYPE									
	ohmic load								
OPERATING MODES									
	name	load signal (for digital set point = ON)							
	1:1	= all full-waves (default setting) *							
	1:2	= every 2nd full wave cycle*							
	1:3	= every 3rd full wave cycle*							
	1:5	= every 5th full wave cycle*							
		* without direct current ratio							
DIGITAL SET POINT INPUTS									
	set point 1 logical input DC 0 ... 24 V    R <sub>i</sub> > 3,3 kΩ    ON > 3 V								
	set point 2 system interface, connection to controlling automation system via optional bus module is possible								
RELAY OUTPUT									
	1 changeover contact								
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								
	with UL applications max. 40 °C								

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