

# 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
- Suitable for transformer load
- Integrated semiconductor fuse
- Standard system interface for connection to an optional bus module (e.g. for CANopen, DeviceNet, EtherNet/IP, Modbus RTU, Modbus TCP, PROFIBUS DPV1, PROFINET)
- LED status messages
- Operating modes 1:1, as well as 1:2, 1:3, 1:5 (e.g. for commissioning)
- Logical signal control 24 V (> 3 V) or standard system interface
- Secure isolation between control and power sections
- 3-phase design by connecting two Thyro-S units
- DIN rail mounting for 16 A, 30 A, 45 A, 60 A
- UL approval of UL 508 A (100k 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

### Technical data (excerpt) Thyro-S 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	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

<b>Rated voltage</b>	
<b>230 V -57% + 10%</b>	for H1 types
<b>230 V -15% + 10%</b>	for H RL1 types > 99 V when using an external 24 V electronic power supply
<b>400 V -57% + 10%</b>	for H1 types
<b>400 V -15% + 10%</b>	for H RL1 types > 172 V when using an external 24 V electronic power supply
<b>500 V -57% + 10%</b>	for H1 types
<b>500 V -15% + 10%</b>	for H RL1 types > 215 V when using an external 24 V electronic power supply
<b>Network frequency</b>	
	all types ranging from 47 Hz to 63 Hz max. frequency change 5% per half-wave
<b>Load type</b>	
	ohmic load
	transformer load
<b>Operating modes</b>	
	<b>load signal (for digital set point = ON)</b>
<b>1:1</b>	= all full-waves (default setting)*
<b>1:2</b>	= every 2nd full wave cycle*
<b>1:3</b>	= every 3rd full wave cycle*
<b>1:5</b>	= every 5th full wave cycle* *without direct current ratio
<b>Digital set point inputs</b>	
<b>Set point 1</b>	logical input DC 0 ... 24 V $R_i > 3,3 \text{ k}\Omega$ ON > 3 V
<b>Set point 2</b>	system interface, connection to controlling automation system via optional bus module is possible
<b>System interface</b>	
<b>Connection for</b>	optional bus module PROFIBUS DPV1, Modbus RTU, DeviceNet, CANopen, PROFINET, Modbus TCP/IP, EtherNet/IP connection of PC software Thyro-Tool Family via PC adapter
<b>Relay output</b>	
	1 changeover contact
<b>Ambient temperature</b>	
	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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