

Sag ride-through device



The SRT3 is the latest revision of Eaton's sag ride-through (SRT) products. The operation of the system is designed specifically to meet the demanding requirements of industrial load protection and has the following features:

- High reliability due to the three levels of redundancy offered in the SRT design
- Extremely high electrical efficiency, meaning much lower ongoing cost of ownership than traditional UPS solutions and much less needed heat dissipation from the room in which the SRT is located
- High levels of fault clearing capacity (typically 20 times current short term) to allow for the discrimination of protection systems
- Ability to cope with industrial loads, such as motor drives, which are high in harmonic draw and also loads that may regenerate power

Industries and applications affected by sags

Key industries

- Semiconductor manufacturers
- Communications
- Steel mills
- Petroleum and chemical processing
- Healthcare
- Paper mills
- Automotives
- Textile
- Printing
- Plastics

Equipment or processes

- Manufacturing process controllers
- Variable speed drives
- Robotics
- Motor conductors
- Telephone systems
- HID lighting
- HVAC controls
- Medical equipment

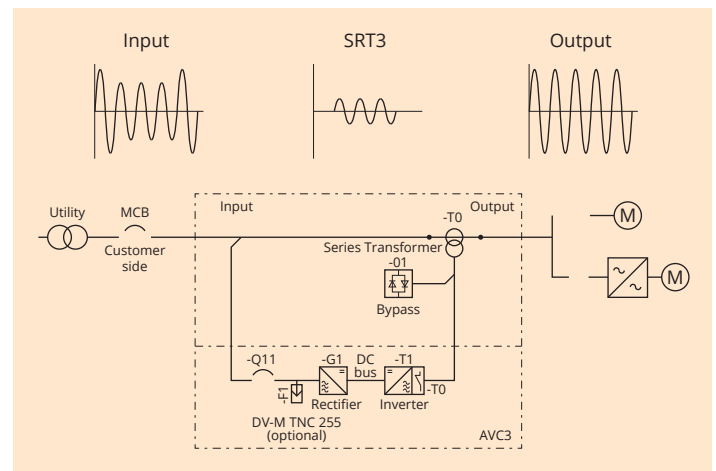
Sag correction using the sag ride-through

The SRT3 power conditioner prevents expensive electrical downtime. It is a state-of-the-art solution to today's power conditioning challenges.

Continuous sag regulation

The sag ride-through is an active voltage conditioner. This means it will constantly respond to voltage sags and swells in the $\pm 10\%$ range with a regulated output in the $\pm 1\%$ range. The SRT3 can be applied to the main service entrance, at branch locations or in front of critical loads. Eaton's SRT3 provides an outstanding return on investment. It delivers operational productivity that is just not possible with traditional tap switching or ferroresonant technologies.

The SRT3 consists of a voltage source inverter, a bypass circuit and an injection transformer connected in series between the incoming utility supply and the load (see diagram below).

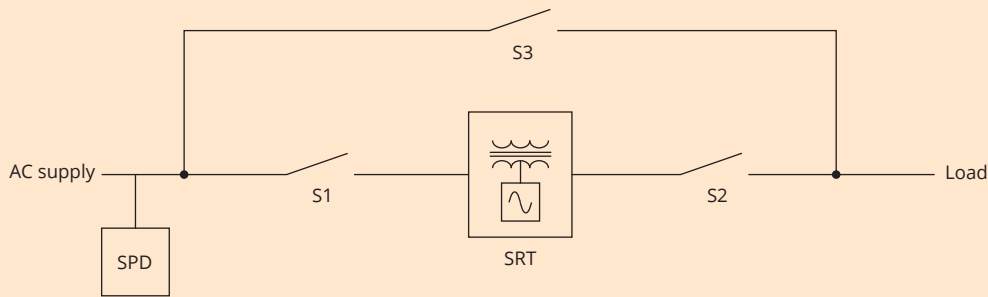


SRT3 active voltage conditioner schematic



Powering Business Worldwide

SRT3 with external maintenance bypass



External three-breaker maintenance bypass is recommended. This is available for quote upon request.

SRT3 features and specifications

Features	Specifications
Load capacity	
Capacity	225–3600 kVA (consult factory for larger kVA sizes and voltages)
Displacement power factor of connected load	0 inductive to 0.9 capacitive
Crest factor for rated kVA	3 at 100% of rated load
Overload capacity	150% for 30 seconds, once per 60 minutes
Input supply	
Nominal supply voltage (according to model)	208–690 V Medium voltage available as custom applications
Power system type	Three-phase, center ground referenced
Operating voltage range for regulation	
Supply voltage for regulation	90–110% of nominal input voltage unit rating
Output supply	
Nominal voltage	Set to match nominal supply voltage
Three-phase voltage regulation range	±10% continuous
Three-phase voltage regulation accuracy	±1%
Three-phase balanced sag/swell correction ability: 40% model	+40% / –10% at least 30 seconds at full load
Sag correction accuracy (within specified range)	±2.5%
Sag correction response: Initial Complete	<250 μs <0.25 cycle
Single-phase sag correction ability: 40% model	90% nominal
Equivalent series impedance (operating)	~3% typical
Efficiency of system	0.98 to 0.99 (refer to model tables)
Bypass	
Capacity	100% model rating (kVA)
Overload capability per contact	Coordinated with recommended MCCB
Equivalent series impedance (in bypass)	<2.5% typical
Interface	
Access protocol	Ethernet connectivity; Modbus® TCP, dry contacts
Environmental	
Enclosure rating	NEMA® 1, IP20
Pollution degree rating	2
Minimum operating temperature	0 °C
Maximum operating temperature	40 °C
Temperature derating	Above 40 °C derate at 2% per °C to a maximum of 50 °C
Storage temperature	Minimum –25° C, maximum 70° C, noncondensing
Capacity elevation derating	–2% every 100 m above 1000 m
Cooling: Inverter Transformer	Forced ventilation Fan assisted ventilation
Humidity	<95%, noncondensing
Noise	75 dBA
Warranty	1 year

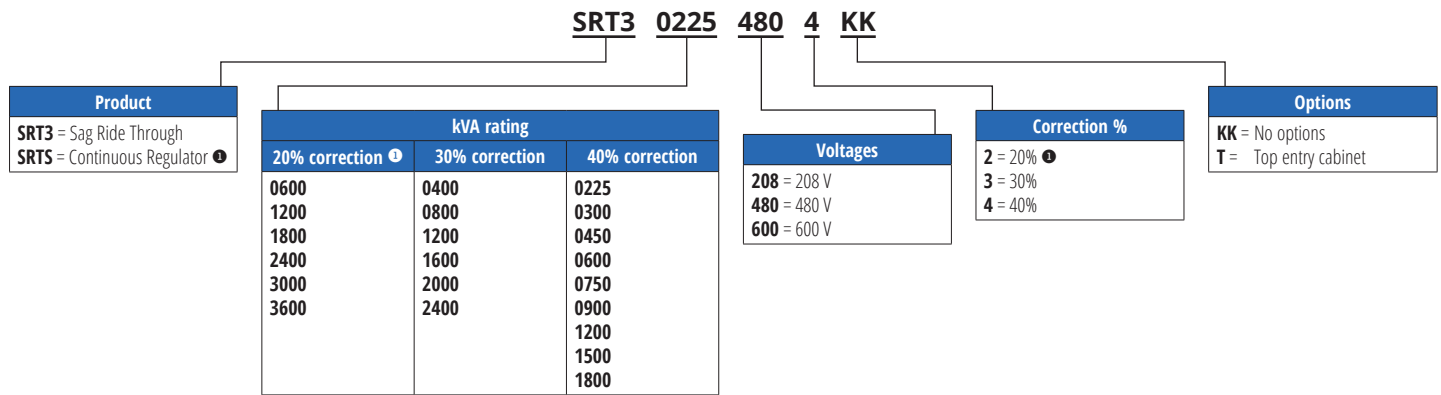
Note: Avoid power factor capacitor (PFC) banks on the output side; technical requirements within this specification can't be kept with PFC.

SRT3 ordering information

Description	Correction %	Rated power (kVA)	Module pairs	W x D x H (mm)	Weight (kg)	Catalog number
SRT3—480 V active voltage stabilizer 40%, 50/60 Hz (380/400/415 V)						
SRT3 480-225-40%	40%	225	1	800 x 800 x 2200	900	SRT302254804KK
SRT3 480-300-40%	40%	300	1	800 x 800 x 2201	900	SRT303004804KK
SRT3 480-450-40%	40%	450	2	1600 x 800 x 2200	1800	SRT304504804KK
SRT3 480-600-40%	40%	600	2	1600 x 800 x 2200	1800	SRT306004804KK
SRT3 480-750-40%	40%	750	3	2000 x 800 x 2200	2350	SRT307504804KK
SRT3 480-900-40%	40%	900	3	2000 x 800 x 2200	2350	SRT309004804KK
SRT3 480-1200-40%	40%	1200	4	1600 x 2000 x 2200	3100	SRT312004804KK
SRT3 480-1500-40%	40%	1500	5	1600 x 2000 x 2200	3700	SRT315004804KK
SRT3 480-1800-40%	40%	1800	6	1600 x 2000 x 2200	4100	SRT318004804KK
SRT3—480 V active voltage stabilizer 30%, 50/60 Hz (380/400/415 V)						
SRT3 480-400-30%	30%	400	1	800 x 800 x 2200	900	SRT304004803KK
SRT3 480-800-30%	30%	800	2	1600 x 800 x 2200	1800	SRT308004803KK
SRT3 480-1200-30%	30%	1200	3	2000 x 800 x 2200	2350	SRT312004803KK
SRT3 480-1600-30%	30%	1600	4	1600 x 2000 x 2200	3100	SRT316004803KK
SRT3 480-2000-30%	30%	2000	5	1600 x 2000 x 2200	3700	SRT320004803KK
SRT3 480-2400-30%	30%	2400	6	1600 x 2000 x 2200	4100	SRT324004803KK
SRTS—480 V active voltage stabilizer 20%, 50/60 Hz (380/400/415 V)						
SRTS 480-600-20%	20%	600	1	800 x 800 x 2200	900	SRTS06004802KK
SRTS 480-1200-20%	20%	1200	2	1600 x 800 x 2200	1800	SRTS12004802KK
SRTS 480-1800-20%	20%	1800	3	2000 x 800 x 2200	2350	SRTS18004802KK
SRTS 480-2400-20%	20%	2400	4	1600 x 2000 x 2200	3100	SRTS24004802KK
SRTS 480-3000-20%	20%	3000	5	1600 x 2000 x 2200	3700	SRTS30004802KK
SRTS 480-3600-20%	20%	3600	6	1600 x 2000 x 2200	4100	SRTS36004802KK
SRT3—208 V active voltage stabilizer 40%, 50/60 Hz (240 V)						
SRT3 220-225-40%	40%	225	1	800 x 800 x 2200	1200	SRT302252084KK
SRT3 220-300-40%	40%	300	1	800 x 800 x 2200	1200	SRT303002084KK
SRT3 220-450-40%	40%	450	2	1600 x 800 x 2200	2100	SRT304502084KK
SRT3 220-600-40%	40%	600	2	1600 x 800 x 2200	2100	SRT306002084KK
SRT3 220-750-40%	40%	750	3	2000 x 800 x 2200	2900	SRT307502084KK
SRT3 220-900-40%	40%	900	3	2000 x 800 x 2200	2900	SRT309002084KK
SRT3 220-1200-40%	40%	1200	4	1600 x 2000 x 2200	3800	SRT312002084KK
SRT3—208 V active voltage stabilizer 30%, 50/60 Hz (240 V)						
SRT3 220-400-30%	30%	400	1	800 x 800 x 2200	1200	SRT304002083KK
SRT3 220-800-30%	30%	800	2	1600 x 800 x 2200	2100	SRT308002083KK
SRT3 220-1200-30%	30%	1200	3	2000 x 800 x 2200	2900	SRT312002083KK
SRTS—208 V active voltage stabilizer 20%, 50/60 Hz (240 V)						
SRTS 220-600-20%	20%	600	1	800 x 800 x 2200	1200	SRTS06002082KK
SRTS 220-1200-20%	20%	1200	2	1600 x 800 x 2200	2100	SRTS12002082KK
SRT3—600 V active voltage stabilizer 40%, 50/60 Hz (690 V)						
SRT3 600-225-40%	40%	225	1	800 x 800 x 2200	1200	SRT302256004KK
SRT3 600-300-40%	40%	300	1	800 x 800 x 2200	1200	SRT303006004KK
SRT3 600-450-40%	40%	450	2	1600 x 800 x 2200	2100	SRT304506004KK
SRT3 600-600-40%	40%	600	2	1600 x 800 x 2200	2100	SRT306006004KK
SRT3 600-750-40%	40%	750	3	2000 x 800 x 2200	2900	SRT307506004KK
SRT3 600-900-40%	40%	900	3	2000 x 800 x 2200	2900	SRT309006004KK
SRT3 600-1200-40%	40%	1200	4	1600 x 2000 x 2200	3800	SRT312006004KK
SRT3 600-1500-40%	40%	1500	5	1600 x 2000 x 2200	4600	SRT315006004KK
SRT3 600-1800-40%	40%	1800	6	1600 x 2000 x 2200	5100	SRT318006004KK
SRT3—600 V active voltage stabilizer 30%, 50/60 Hz (690 V)						
SRT3 600-400-30%	30%	400	1	800 x 800 x 2200	1200	SRT304006003KK
SRT3 600-800-30%	30%	800	2	1600 x 800 x 2200	2100	SRT308006003KK
SRT3 600-1200-30%	30%	1200	3	2000 x 800 x 2200	2900	SRT312006003KK
SRT3 600-1600-30%	30%	1600	4	1600 x 2000 x 2200	3800	SRT316006003KK
SRT3 600-2000-30%	30%	2000	5	1600 x 2000 x 2200	4600	SRT320006003KK
SRT3 600-2400-30%	30%	2400	6	1600 x 2000 x 2200	5100	SRT324006003KK
SRTS—600 V active voltage stabilizer 20%, 50/60 Hz (690 V)						
SRTS 600-600-20%	20%	600	1	800 x 800 x 2200	1200	SRTS06006002KK
SRTS 600-1200-20%	20%	1200	2	1600 x 800 x 2200	2100	SRTS12006002KK
SRTS 600-1800-20%	20%	1800	3	2000 x 800 x 2200	2900	SRTS18006002KK
SRTS 600-2400-20%	20%	2400	4	1600 x 2000 x 2200	3800	SRTS24006002KK



Catalog numbering system



❶ SRTS only available with 20% correction while SRT3 is available with 30% or 40% correction.

Notes:

NEMA 4 option available upon request, additional cost will be incurred.
Some units may require wood crating for shipping, additional shipping costs may be added.
External three-breaker maintenance bypass is recommended. This is available for quote upon request.

For more information, contact your local Eaton sales representative, visit Eaton.com/pc or call 1-877-ETN-CARE, option 2, option 5, option 2, option 2.

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