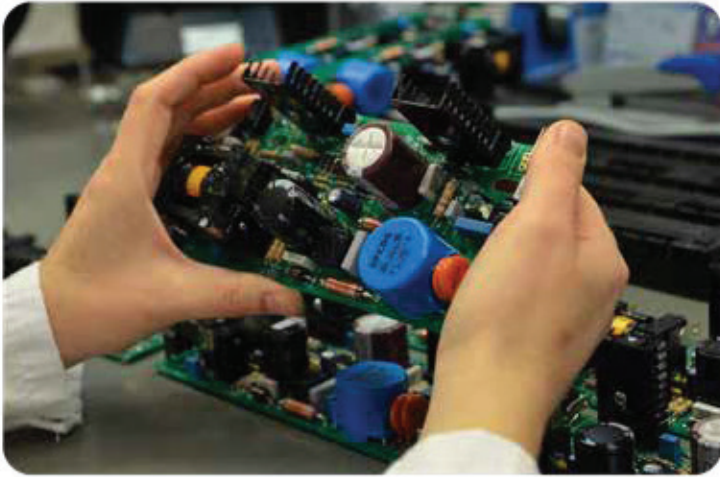


THE GLOBAL EXPERTS

SOLCON

IN SOFT STARTERS



PRODUCT GUIDE



WATER



OIL & GAS



INDUSTRY



MINING



MARINE



HVAC





CONTENTS

Medium Voltage Soft Starters & Software

- 1. HRVS-DN PowerStart
 SCR-Based Medium Voltage Soft Starter 2.3 - 13.8kV4
- 3. DriveStart²
 IGBT-Based Medium Voltage Soft Starter up to 11kV6

Low Voltage Soft Starters

- 1. iStart
 Advanced, Digital Low Voltage Soft Starter 17-1100A, 208-690V8
- 2. RVS-DN
 Heavy Duty, Digital Low Voltage Soft Starter 8-3000A, 220-1200V 10
- 5. RVS-AXO
 Compact, Low Voltage Soft Starter 3-75A, 220-500V 12
- 3. RVS-AX
 Analog, Low Voltage Soft Starter 8-170A, 220-600V 13
- 4. Solbrake
 DC Injection Brake 8-820A, 208-690V 13

Control Products

- 1. TPS
 Low Voltage Thyristor Power Systems up to 1200V 14
- 2. MV-TPS
 Medium Voltage Thyristor Power Systems up to 4.16kV 15
- 4. HRVS-TX
 Medium Voltage Inrush Current Limiter up to 100MVA, 36kV 16

Protection Relays

- 1. MPS-3000
 Motor Protection Relay..... 17
- 2. MPS-6
 Motor Protection Relay..... 18
- 3. TPR-6
 Temperature Protection Relay 19
- 4. MIP-6
 Motor Insulation Protection Relay.....20

Switchgear

- ProGear Type Tested Switchgear Cabinet.....21

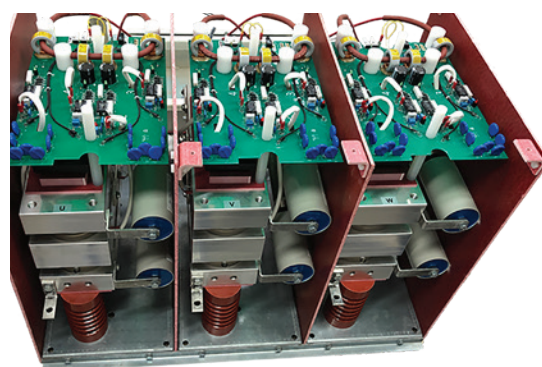
MEDIUM VOLTAGE SOFT STARTERS

HRVS-DN PowerStart

Digital, Heavy Duty, Medium Voltage Soft Starter
 2.3-13.8kV, up to 48MW

The HRVS-DN is a heavy duty Medium Voltage Soft Starter, designed for all Medium Voltage AC induction motors. The HRVS-DN's advanced motor control technology ensures smooth acceleration and deceleration as it minimizes the effect of high in-rush current and mechanical torque shock. Advanced features include customizable starting curves, unique voltage and current measurements, as well as monitoring capabilities. The flexible design, enhanced motor protection and a superior global reputation make the HRVS-DN the starting solution of choice for Medium Voltage applications - even under the most demanding conditions.

The HRVS-DN's flexible configuration is designed to meet the requirements of new applications, retrofits and OEM customization. It is available with Marine approvals and with ProGear, Solcon's fully Type Tested Arc Resistant switchgear.



Advanced Features

- Configurable starting & stopping characteristics
- Enhanced motor protection package
- User friendly setup and operation
- Multi-soft start and multi-soft stop
- Unique synchronous motor starting module
- Pump and load control
- Advanced Electronic Current & Potential Transformer (ECPT) utilizes fiber optics for complete isolation between Low and Medium Voltage sections
- Partial Discharge test according to EN50178/625.1
- Direct Power Factor Capacitor connection
- 45-65Hz Auto-tracking frequency range
- Easy to conduct Low Voltage test
- EMC compliant design and tested
- Communication :Modbus / Profibus / DeviceNet / Anybus
- Compact 2-phase control configuration (optional)
- Event recorder logs 99 events and includes real-time clock
- Connex Data Logger (optional) - For remote monitoring
- Multi-language interface

Integral Protections

- Bypass open
- Under Voltage
- Under current
- Current unbalance
- Phase sequence
- Maximum start time
- Electronic overload
- Instantaneous over current 100-850%
- Time over current
- Over Voltage
- Number of starts
- Under/over frequency
- External fault
- Power ON no start
- Thermal modeling
- Phase loss
- Shorted SCR
- Over load class trip



Control Panel (MVCP)

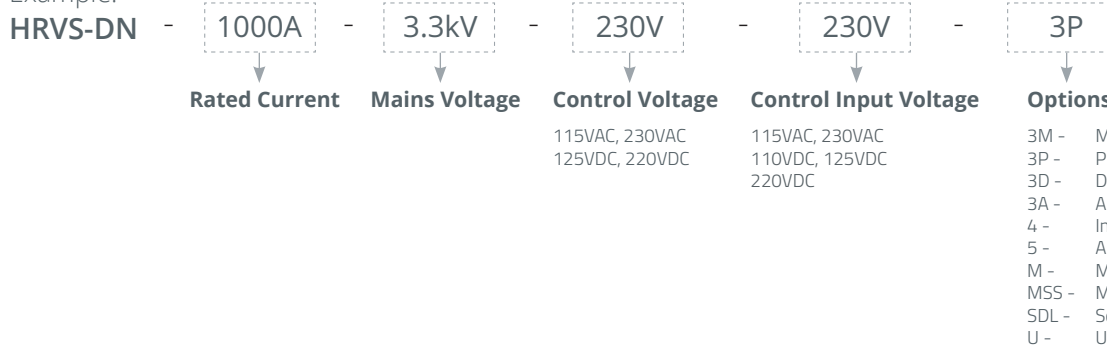
- Single range power supply (110V/220 VAC, 50/60Hz, AC/DC)
- Modular design
Simple Plug and Play slots for multiple option card installation
Wide variety of communication options including Anybus
- HMI module
Large HMI Interface LCD, 4x16 format
- Option to install HMI on MV Cabinet door or remote site (up to 25 meters)
- Quad adjust - 4 starting configuration settings
- Multi-language support including Russian and Chinese
- Data Logger Option - remote maintenance and diagnostics
Integrated data logger and waveform capture
PC software (C-Plot) available for system support
- Advanced 99 event log recorder
- Multi-Start controller
- Available as upgrade for an existing HRVS-DN installation

Models | 2.3-13.8kV, 60-1,800A

Mains Voltage (kV)	Rated Current (A)	Motor kW (kW)	Mains Voltage (kV)	Rated Current (A)	Motor kW (kW)	Mains Voltage (kV)	Starter Current (A)	Motor kW (kW)	Mains Voltage (kV)	Starter Current (A)	Motor kW (kW)
2.3	60	200	4.16	60	360	10	70	1,020	11	70	1,100
	110	360		110	660		140	2,040		140	2,200
	200	660		200	1,200		250	3,650		250	4,000
	320	1,060		320	1,930		300	4,300		300	4,800
	400	1,330		400	2,410		400	5,800		400	6,400
	500	1,660		500	3,010		500	7,250		500	8,000
	600	2,000		600	3,610		600	8,700		600	9,600
	700	2,300		700	4,210		700	10,150		700	11,200
	800	2,660		800	4,820		800	11,600		800	12,800
	1,000	3,330		1,000	6,030		1,000	14,500		1,000	16,000
3.3	60	280	6.6	70	670	13.8	1,200	17,400	13.8	70	1,400
	110	520		140	1,340		1,400	22,000		140	2,800
	200	950		250	2,390		1,600	25,000		250	5,000
	320	1,530		300	2,870		1,800	28,000		300	6,000
	400	1,910		400	3,820					400	8,000
	500	2,390		500	4,780					500	10,000
	600	2,850		600	5,736					600	12,000
	700	3,325		700	6,740					700	14,000
	800	3,820		800	7,650					800	16,000
	1,000	4,780		1,000	9,570					1,000	20,000
		1,200	11,500			1,200	24,000			1,000	20,000
		1,400	14,000							1,200	24,000
		1,600	16,000								
		1,800	18,000								

How To Order

Example:



DriveStart | IGBT BASED MEDIUM VOLTAGE SOFT STARTER UP TO 11KV, up to 18MVA (depending on load, higher ratings available)

The first of its kind IGBT based Medium Voltage Soft Starter

Optimized for applications that require a low starting current and/or a high starting torque

- Provides full torque start
- Starts at nominal motor current or lower
- Enables motor starting from weak electrical networks
- Reduces motor heat at start enabling use of standard motors
- Reduces peak network demand

Saving costs, energy while meeting top performance requirements

- Integrated bypass protects against energy loss during operation, optimizes energy efficiency and reduces operational costs
- Streamlined design drastically reduces the footprint requirements

Technical Specifications

- Input voltage - Up to 11kV 50/60Hz +10% -15
- Power range - Up to 11kV, 8.5MVA
 *For higher power requirements - consult with us
- Mains starting current – 10% to 120% of motor rated current
- Starting torque - Up to 160% of motor rated torque
- Internal synchronization system (bypass), from DriveStart to mains and back
- Soft Start and Soft Stop
- Multi-start capabilities
- Integrated Data Logger and wave form capture for all major system signals including current and voltage for remote diagnostics and failure analysis

Blue Box Control Technology

- Full control and monitoring of the system
- IEC, UL and cUL conformed
- Full graphic HMI - 10" colour screen
- Easy set-up from touch screen
- Wireless connection for data transfer

Pre-Programmed- ManyScenarios

- Single motor start
- Multi motor start
- DriveStart² and Soft starter combinations
- Full redundancy of DriveStart²
- Double bushbar solutions

Connectivity

- 3 serial ports (RS-232C/422/485)
- SD card
- USB Type A+B
- Ethernet (LAN)
- Connex - Data Logger & Spectrum analyser



Models UP TO 11kV & 18.5MVA - Inverter Section Only

kV	Rated Capacity	Rated Current	Unit Dimensions (mm)			Weight (kg)	
	kVA	A	H	W	D	Min'	Max'
3.3	550 - 1000	93 - 178	2,495	2900	1100	4,500	5000
	1,300 - 1,750	228 - 312	2,495	3,500	1300	6,250	6,800
	2,200 - 2,500	385 - 440	2,595	4,200	1,300	8,000	8,400
	2,850	500	2,570	4,700	1,400	9,600	
	3,600 - 3,850	635 - 675	3,110	6,900	1,600	11,300	
	5,200 - 5,500	914 - 962	3,110	7,400	1,700	13,500	13,700
4.16	700-1,250	97 - 178	2,460	2,600	1,900	3,800	4,600
	1,650-2,250	229 - 312	3,064	4,500	1,400	7,600	7,900
	2,750-3,200	382 - 440	3,064	5,400	1,500	10,000	10,200
6.6	500 - 1,100	44 - 93	2,460	2,500	1,600	2,950	3,700
	1,200 - 2,000	105 - 178	2,460	2,600	1,900	3,800	4,600
	2,250 - 3,600	197 - 312	3,064	4,800	1,400	7,100	8,000
	4,000 - 5,100	350 - 440	3,064	6,200	1,500	10,100	10,300
	5,400 - 5,700	472 - 500	3,064	6,800	1,500	11,700	11,800
	6,400 - 7,700	560 - 675	3,164	7,400	1,600	14,950	16,950
	8,250 - 11,000	722 - 962	3,164	11,100	1,600	22,500	25,500
10	500 - 1,600	29 - 93	2,460	3,400	1,700	3,700	5,000
	1,700-3,080	98 - 178	2,783	5,400	1,300	6,000	7,150
	3,350 - 4,600	193 - 266	3,064	7,100	1,500	9,900	11,800
	5,000 - 5,400	289 - 312	3,064	7,300	1,500	11,900	13,000
	5,850 - 6,600	338 - 381	3,064	8,300	1,500	13,050	14,200
	7,000 - 8,700	404 - 500	3,064	11,400	1,500	19,650	20,400
	10,500 - 11,700	606 - 675	3,119	12,500	1,500	21,400	22,400
	13,500 - 16,500	779 - 962	3,239	14,100	1,600	25,800	28,800
11	625 - 1,750	33 - 93	2,460	3,700	1,700	4,100	5,400
	1,850 - 3,400	97 - 178	2,873	6,600	1,500	8,100	9,500
	3,750 - 6,000	197 - 312	3,064	8,100	1,500	11,400	14,000
	6,600 - 8,400	346 - 440	3,064	11,800	1,500	21,100	21,700
	8,700 - 9,500	457 - 500	3,064	13,000	1,500	22,300	22,400
	11,500 - 12,800	604 - 675	3,170	15,700	1,600	29,000	30,000
	15,000 - 18,300	787 - 962	3,290	16,700	1,700	35,500	37,500

* For reference purposes only.

* Contact us for more information about a best matched solution for your requirements.

DRIVESTART² IS CERTIFIED ACCORDING TO IEC 61800

Saving Costs, Energy & Space while meeting top performance requirements

LOW VOLTAGE PRODUCTS

iStart | Advanced Low Voltage Soft Starter 17-1100A, 208-690V

YOUR COMPREHENSIVE SOFT STARTING SOLUTION EASY TO COMMISSION, SIMPLE TO OPERATE

The iStart is Solcon's most advanced soft starter, with built-in bypass and 2 or 3-phase control. It incorporates enhanced soft-start and soft-stop characteristics, to provide the best solution for a wide range of applications.

The comprehensive motor protection package that guarantees long term reliability while the built-in bypass ensures excellent performance, all in a small versatile design.



iStart size A, B

Advanced Features

- Universal Interchangeable Control Module
- Multi-language user interface
- Real-time, online, 99 event and trip log (including currents, voltages)
- Optimized for high efficiency motors (IE3)
- 2-phase mode for on-site phase fault operation
- Basic, professional and expert set-up menus
- User defined metering and monitoring of 3-phase voltages, 3-phase currents and power factor
- USB interface for setup and software updates
- Option cards include Analogue Output Including Thermistor, three Thermal Sensors, Motor Insulation Monitor
- Auto reset for selected faults
- 3 Thermistor inputs
- Frequency auto tracking 45-65 Hz
- Inline and inside delta connection
- AC/DC (Sizes A, B, C)
- 3 Current transformers
- Economical 2-phase units available

Comprehensive Protection Package

- Under voltage
- Phase sequence
- Sheer-pin current
- Under current
- Overload classes (IEC, NEMA)
- Current imbalance
- Ground fault
- Excessive number of starts
- Excessive starting time
- Soft starter over temperature
- Programmable external fault
- Phase loss
- Inside delta wrong connection alarm

Soft Start & Soft Stop Functions

- Acceleration control
- Current limit start
- 6 adjustable curves for pumps, generators, standard and torque controlled applications
- Soft stop
- Kick start
- Restart delay (3 sec)



iStart size A, B, C

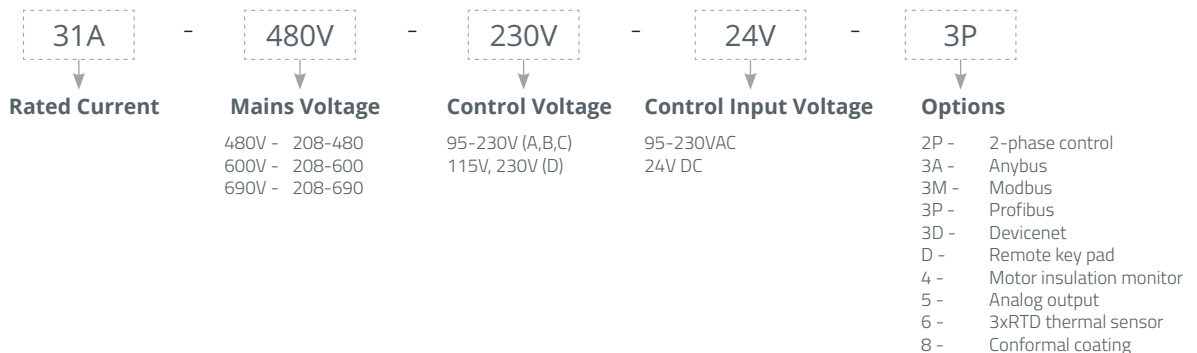
Models | 17-1100 A, 208-690 V, 2 or 3-phase with internal bypass

Model	Rated Current (A)	Unit Dimensions (mm)			Weight (kg)	Internal Bypass	2 or 3-Phase Control
		H	W	D			
A	17	245	122	147	3.2	+	+
	31						
	44						
	61						
B	72	275	132	208	5.2	+	+
	85						
	95						
C	105	388	175	234	10.9	+	+
	145						
	170						
	220						
D	230	555	365	275	37	+	+
	310						
E	350	644	365	285	38	+	+
	430						
G	515	791	480	302	56	+	+
	590						
	690						
H	720	791	510	305	60	+	+
	850						
I	960	815	559	316	85	+	+
	1100						

How To Order

Example:

iStart



RVS-DN

Heavy Duty, Low Voltage Soft Starter
 8-3000A, 220-1,200V

The RVS-DN is a heavy duty, advanced Soft Starter with over 25 years of reliability. Designed to operate under severe conditions for the start of motors in the most demanding applications, such as those in Marine and Mining installations. Advanced features such as pump control, slow speed, electronic reverse and enhanced motor protection make it one of the best and most popular soft starters in the industry.

Advanced Features

- Robust construction
- Highly advanced starting & stopping characteristics
- User friendly set up and operation
- Line or Inside delta connection models up to 690V
- Ambient operating temperature: up to 60°C
- Motor insulation tester
- Communication: Modbus, Profibus, DeviceNet
- Thermistor input
- Analog output
- 45-65Hz Auto-tracking frequency range
- Can be operated without bypass contactor at 50°C up to 820A
- Designed to meet Marine Industry standards up to 3000A



Comprehensive Protection Package

- Too many starts & start inhibit time
- Long start time (Stall protection)
- Shear pin (jam) with adjustable delay
- Electronic overload with selectable curves
- Under current
- Phase loss
- Phase sequence and Under/Over frequency
- Under/Over voltage
- Load loss (motor not connected)
- External fault
- Shorted SCR
- Starter over temperature protection
- Motor insulation test (option)
- Motor thermistor (option)
- When using "Preparation for Bypass" all protection remains active

Soft Start and Soft Stop Functions

- Soft start and soft stop
- Soft, stepless acceleration & deceleration
- Current limiting
- Torque & current control - for optimized acceleration and deceleration
- Pump control program
- Dual adjustment - two start/stop characteristics
- Slow speed with electronic reverse
- Pulse start

Models | 8-3000A, 220-690V

Model	Rated Current (A)	Motor kW @400V	Unit Dimensions (mm)			Weight (kg)			
			H	W	D				
A	8	4	310	153	170	4.5			
	17	7.5				6.0			
	31	15				7.5			
	44	22							
	58	30							
B	72	37	385	274	238	14.5			
	85	45							
	105	55							
	145	75							
C	170	90	455	380	292	32			
	210*	110							
	310*	160							
D	390*	200	455	380	292	39			
	460*	250				48			
	580	315				640	470	302	48
	820	450				710	470	302	65
E	950	560	1,100	723	370	83.5			
	1,100	630				170			
	1,400	800							
	1,800	950							
F	2,150	1,250	1,300	750	392	240			
	2,400	1,400							
G	2,700	1,575	1,300	900	410	350			
	3,000	1,750							

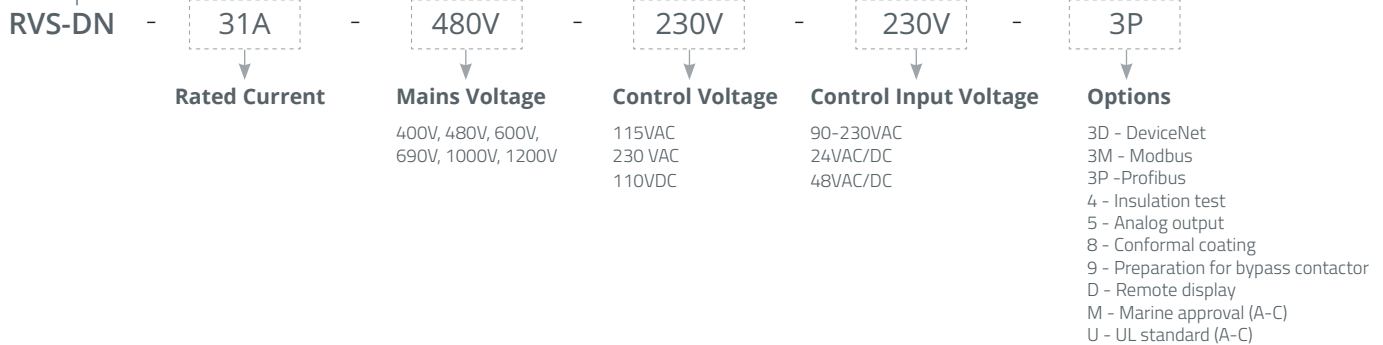
* Dimensions differ with Marine approvals.

Models | 105-580A, 1,000-1,200V

Model	Rated Current (A)	Unit Dimensions (mm)			Weight (kg)
		H	W	D	
H	105	400	325	300	20
I	170	500	592	345	55
	210				
	310				
	390				
	460				
J	580	650	650	400	85

How To Order

Example:



RVS-AxO | Compact, Low Voltage Soft Starter 3-75A, 220-500V

The RVS-AXO provides a cost effective solution for small to medium size motors. This simply designed soft starter expands further the analogue capabilities of the reputable cornerstone of Solcon's soft starters.

Apart from its built-in motor protection, this soft starter eliminates the need for excess wiring and space making it a perfect replacement for Start-Delta and Auto-Transformer Type starters.

Featuring built-in Modbus communication protocol for remote monitoring, the RVS-AXO awards it's users a reduction of downtime for optimal productivity.



- Compact & Easy to Install
- Three-Phase Control
- Wide Range Control Voltage
- Modbus RTU Settings & Monitoring
- DIN Rail mounting (8-22A)
- Suitable for single phase motor
- Easy to use Analog Interface

Features

- Built-in bypass
- Soft start & soft stop
- Start / Stop with voltage free contact
- End of acceleration contact
- Compact foot print
- DIN Rail mounting (8-22A)

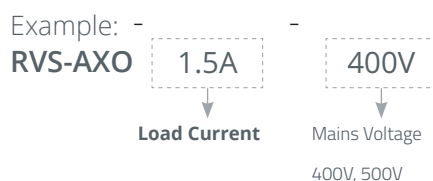
Control Voltage | 100V-240V

Model	Motor A @400V / 500V	Unit Dimensions (mm)		
		H	W	D
A	1.5	175	92	95
	2.2			
	3.7			
	5.5			
B	7.5	200	108	105
	11			
	15			
C	18.5	222	125	132
	22			
	30			
	37			

Comprehensive Motor Protection

- Opencurrent Protection
- Undercurrent Protection
- Current Imbalance Protection
- Phase Loss Protection
- Phase Sequence Protection
- Over Temperature Protection
- Internal Logic Fault Protection

How to Order



RVS-AX

Analog, Low Voltage Soft Starter
8-170A, 220-600V

The RVS-AX provides an optimal solution for small to medium size motors and is an ideal cost effective replacement for Star- Delta and Auto-Transformer type starters. It is easy to install and operate with built-in Current Limit and Motor Protection, integral bypass and 3-phase control. Control voltage is not required to operate the RVS-AX.

Features

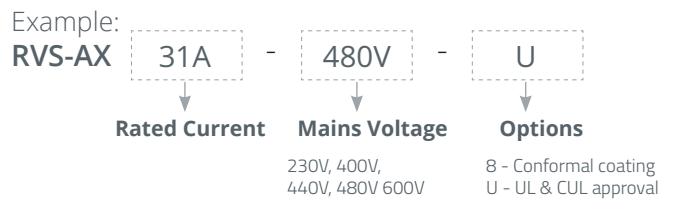
- Built-in motor protection
- Built-in bypass (31-170A)
- Soft start & soft stop
- Current limit
- Start / Stop with voltage free contact



Models | 8-170A, 220-600V

Model	Rated Current (A)	Motor kW @400V	Unit Dimensions (mm)			Weight (kg)
			H	W	D	
A	8	4	232	120	105	2.6
	17	8				
	31	15				
	44	22				
B	58	25	275	129	185	5
	72	37				
C	85	45	380	120	185	8.4
	105	55				
D	145	75	380	172	195	11.8
	170	90				

How to Order



Solbrake

DC Injection Brake
8-820A, 208-690V

The Solbrake electronic brake provides fast, smooth, frictionless braking of standard motors by injecting controlled DC current into the motor windings after the line contactor has opened. This DC current induces a stationary magnetic field which exerts a braking torque on the rotor.

Advanced Features

- Reduces stopping time of high inertia loads - increases production rate in machine tools and safety of hazardous machines
- Adjustable braking time
- Auto stop - DC Injection stops when the motor stops
- DIN Rail mounting (Rated current 10A)
- Soft, smooth stopping, preventing wear and tear of mechanical parts
- Adjustable braking torque, matching load size and required stop time
- Auto stop, reducing motor heating



Models | 8-820A, 208-690V

Model	Rated Current (A)	Motor kW @400V	Unit Dimensions (mm)			Weight (kg)
			H	W	D	
A	10	5	75	45	105	0.7
	17	7.5				
B	31	15	190	65	114	1.4
	58	30				
C	105	55	280	154	160	5.2
	210	90				5.7
D	310	110	384	224	222	12
	390	160				
E	460	220	384	224	222	13.2
	820	470				



TPS

Thyristor Power System
8-1500A, 230-1200V

The TPS is a heavy duty 3-phase power unit for controlling the voltage applied to either inductive or resistive heating elements. It is a heavy duty, digital, zero crossing and phase control power system.



Models | Up to 690VAC

Model	Rated Current (A)	Load kW @400V	Unit Dimensions (mm)			Weight (Kg)
			H	W	D	
A	8	6	291	172	185	6.3
	17	12				6.3
	31	21				6.4
	44	30				6.5
	58	40				6.5
B	72	50	390	172	195	6.5
	85	59				8.5
C	105	73	385	274	238	14.5
	145	100				14.5
D	170	118	455	380	292	31
	210	145				31
E	310	215	555	380	292	51
	390	270				51
F	460	318	640	470	302	53
	580	401				53
G	820	567	Consult Factory			53
	950	657	Consult Factory			53
	1100	761	Consult Factory			53
	1400	969	1225	1050	471	172
	1500	1038	Consult Factory			172

Advanced Features

- Range: 8-1500A, 230-1200V, 50/60Hz
- Zero crossing & phase control (field programmable)
- Comprehensive protection package
- Communication: Modbus
- Line and Inside delta connection
- Synchronized mode (up to 10 units)

Models | 1200VAC

Rated Current (A)	Motor kW @1000V	Unit Dimensions (mm)			Weight (kg)
		H	W	D	
55	95	550	280	346	33.5
200	346				

How to Order

Example:



Rated Current

Mains Voltage

Control Voltage

Control Input Voltage

Options

400V, 480V, 600V, 690V, 1000V

115VAC, 230VAC

90-230VAC

- 3M - Modbus
- D - Remote key pad
- 5 - Analog output
- 8 - Conformal coating
- D - Remote Panel mounting
- Sync - Synchronization mode
- P - Potentiometer control



MV-TPS

Medium Voltage Thyristor Power System
Up to 14.16kV, 500A

Medium Voltage Heater Controller

The MV-TPS is a heavy duty, fully digital, zero-crossing, phase-control, 3-phase control power unit for all types of resistive loads.

The MV-TPS is intended for voltage control of Medium Voltage heating applications. Using Medium Voltage drastically reduces the amount of cable required, the size of the heating elements, the size of the electrical equipment cabinets and saves costly step-down transformers and switch-gear versus a Low Voltage system.



Patent pending

Advanced Features

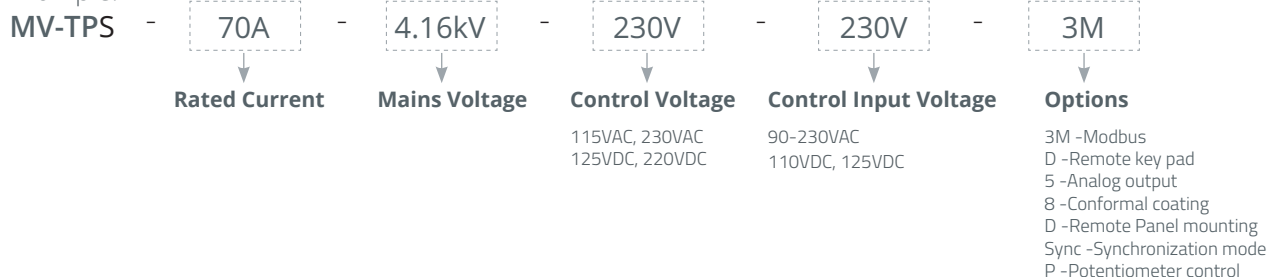
- Fully programmable, 15 protection functions
- Load unbalance alarm to detect a faulty element, even in a parallel connected element system
- Under power level alarm to detect faulty element in case the system is designed to work unbalanced
- Two-line, 16 character LCD screen displays actual values, statistical & maintenance data

Models | Up to 13.8kV, 500A

Mains Voltage (kV)	Rated Current (A)	Heater kW @6.6kV	Unit Dimensions (mm)		
			H	W	D
4.16	70	2000	1,573	1,032	685
	140				
	300				

How To Order

Example:





HRVS-TX

Medium Voltage Inrush Current Limiter
Up to 100MVA, 36kV

The HRVS-TX eliminates transformer inrush current for all types of Medium Voltage Transformers, up to 100 MVA at 36kV. It is the ideal current limiting solution for Medium Voltage Transformers. Its sophisticated control ensures the elimination of the magnetizing inrush current, eliminating nuisance tripping as well as dynamic shock to the transformer windings. The current limiter can be supplied as IP31-54 with options such as Line and Bypass vacuum contactors and optional circuit breakers, disconnect switches, main and control protection fuses and transformer protection relays.

Advanced Features

- Integral Current Limiting Relay (TSR-6)
- Heavy duty design
- Ambient operating temperature -10°C to 50°C
- Reduced inrush current and dynamic shock
- Applicable models for any transformer
- Communication - RS485 Modbus
- Unique starting characteristics
- Fault indication to each individual fuse
- Partial Discharge (Korona) test for each transformer starter
- Wide 40-70Hz range for fluctuating frequency systems
- IP31-standard, Higher standard available
- User friendly, easy setup and operation
- Electronic Potential Transformer (optional)
- Extended protection package (optional)
- Transformer temperature protection relay (optional)

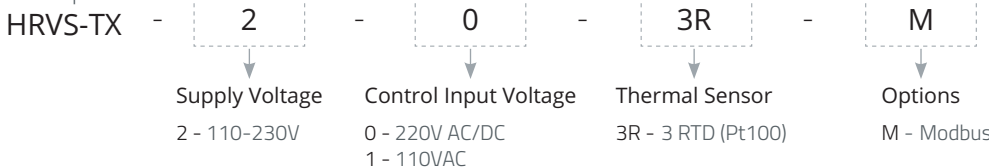
Models | Up to 36kV, 100MVA

Mains Voltage (kV)	Max Current (A)	Max Power (kVA)	Unit Dimensions (cm)		
			H	W	D
3.3	600	3,400	230	180	110
	1,200	6,900			
4.16	600	4,300			
	1,200	8,600			
6.6	600	6,900			
	1,200	13,700			
11	600	11,400	230	210	110
	1,200	22,900			
	1,600	30,500			

Mains Voltage (kV)	Max Current (A)	Max Power (kVA)	Unit Dimensions (cm)		
			H	W	D
13.8	600	14,300	230	250	110
	1,200	28,700			
	1,600	38,200			
22	600	22,900	240	330	120
	1,200	45,700			
	1,600	61,000			
36	1,200	74,800	250	450	120
	1,600	99,800			

How To Order

Example:





PROTECTION & CONTROL RELAYS

MPS 3000 | Motor Protection and Control Relay

The MPS-3000 provides a comprehensive motor protection and control package. Monitoring 3-phase currents and voltage together with 10 RTD/Thermistor temperature inputs it provides an ideal solution for Medium and Large Low Voltage Motors.



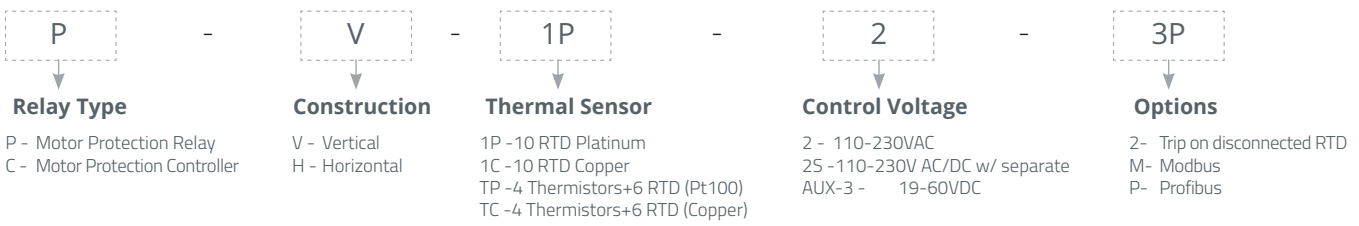
Advanced Features

- Monitoring 3 temperature inputs, 3-phase current, voltage and energy
- Power measurement (3-phase voltage measurement)
- Statistical data of last 10 trips, with time and date stamp
- RTD bias for thermal overload
- Multiple Thermal Overload curves
- Too Many Starts pre-alarm, configurable to energize dedicated output relay
- Capture and display of min and max RMS, average of 3-phase current, one voltage, min and max frequency
- Ground Fault setting during start eliminates nuisance trips
- MODBUS communication, remote parameter programming, control and supervision.
- Programmable discrete inputs/output
- 4 programmable analog outputs

How To Order

Example:

MPS-3000



Comprehensive Protection Package

ANSI/IEEE C37.2	PROTECTIONS	MPS 3000	MPS-6
3	Communication failure / Internal failure	√	√
27	Under-voltage	√	√
32L	Under Power Level 1/2	√	√
37	Under current Level 1/2	√	√
46	Current Imbalance Level 1/2	√	√
47	Phase sequence/loss	√	-
48	Max. Start Time	√	√
49R	High Temp. Level 1/2, sensors 1-10	√	√
49/51	Thermal Capacity Level 1/2	√	√

ANSI/IEEE C37.2	PROTECTIONS	MPS 3000	MPS-6
50	Over Current Level 2 - Short	√	√
50G	Ground Fault Level during starting	√	√
50G/N	Ground Fault Level 1/2	√	√
51L	Load Increase - Alarm	√	√
51R	Over Current Level 1 - Jam	√	√
55	Lead / Lag PF / Low Power Factor	√	√
59	Over-voltage Level 1/2	√	√
66	Too Many Starts Level 1	√	-
74	Welded contactor (MPS 3000c)	-	√



MPS-6 | Motor Protection System

The MPS-6 is a Motor Protection System that offers protection, control and supervision for Low Voltage high power motors and is also suitable for motors operating in a Motor Control Center (MCC).



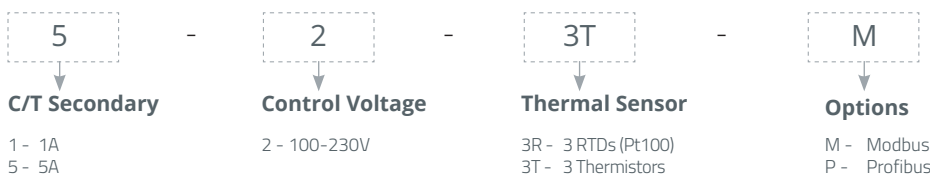
Advanced Features

- Monitoring 3-phase currents, single phase voltage and 3 temperature inputs
- Power measurement (single phase voltage measurement)
- Statistical data of last 10 trips with time and date stamp
- RTD Bias for thermal overload
- Multiple Thermal Overload curves
- Too Many Starts pre-alarm, configurable to energize dedicated output relay
- No Start Process - starting method, allowing switching to run, if I > 10%
- Capture and display of min and max RMS average of 3-phase current, one voltage, min and max frequency
- Ground Fault setting during start elimination nuisance trip
- MODBUS communication (up to 19200 bps) - remote parameter programming, control and supervision
- 6 programmable discrete inputs and outputs

How To Order

Example:

MPS-6



Models

MPS-3000

Model	Unit Dimensions (mm)			Weight (kg)
	H	W	D	
Vertical	310	134	140	3.1
Horizon	140	310	134	

MPS-6

Model	Unit Dimensions (mm)			Weight (kg)
	H	W	D	
MPS-6	144	96	107	1.5

TPR-6

Temperature Protection Relay

The TPR-6 Temperature Protection Relay is designed to protect electric motors, transformers and other systems from over-heating. The TPR-6 has up to 14 temperature inputs that can be programmed to measure thermistors (PTC or NTC) and RTDs (Pt100).



Advanced Features

- Advanced microprocessor based circuitry
- Display of operating RTD or Thermistor Data, Fault and Statistics
- Programmable inputs and outputs
- RS-485 communication with MODBUS protocol
- Easy installation and friendly operation
- Two level protection for Alarm and Trip
- Selection between Trip and Trip fail-safe
- Analog output related to any input or input combinations
- RTD / Thermistor selection - RTDs 100 ohm Platinum (PT100) - Thermistor - PTC or NTC
- Disconnected sensor protection

Protection Features

- RTD / Thermistor with two levels for each input
- Thermistor PTC / NTC selection
- Over temperature Alarm and Trip to each input
- Continuous analog output signal
- External fault 1 and 2

Protection Functions

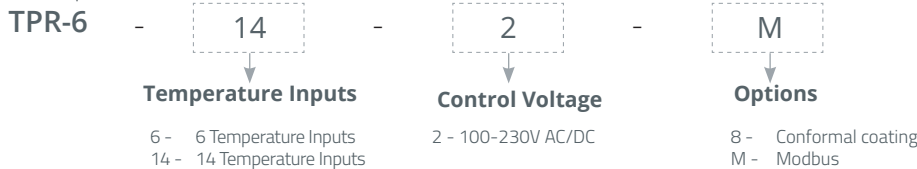
- Exact input can be assigned to any of the following items:
 - Alarm only - Relay A
 - Trip only - Relay B
 - Fan (Trip, Alarm)- Relay C
 - Trip/Alarm- Relay D
 - Enabling Auto Reset

Models

Model	Unit Dimensions (mm)			Weight (kg)
	H	W	D	
TPR-6	144	96	107	0.8

How To Order

Example:





MIP-6

Motor Insulation Protection Relay Low/Medium Voltage Motors

The MIP-6 monitors the level of deterioration in the insulation of Low and Medium Voltage Motors. It measures the motor's insulation resistance and displays the actual and average highs and lows over a predefined period of time, in addition to showing predictive alerts.

Two types of units available:

- Low Voltage
- Medium Voltage with an additional resistor box (up to 15kV Medium Voltage motors)



Advanced Features

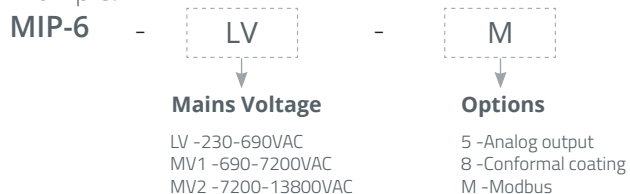
- Monitors insulation deterioration of Low / Medium Voltage motors
- Displays the present and average insulation resistance on LCD
- Monitoring while motors are de-energized
- Programmable parameters
- Microprocessor based technology
- Alarm / Trip Setpoint in the range of 0.1 to 60 Mega Ohms
- Utilizes up to 48 VDC test voltage to increase personnel safety
- Illuminated LCD display with 2 lines of 16 characters each
- Six keys for easy programming
- Three LEDs for easy status indication
- Deterioration monitoring by storing history with time stamp
- Unauthorized parameter modification prevention
- Four C/O 8 Amp., 250V programmable signaling relays
- Analog 0/4-20mA output for remote reading
- Modbus communication
- Control Voltage: 85-230VDC/AC (50/60Hz)
- Operating Temperature Range 0°C to +50°C (default - all units) -10°C to +60°C (optional)

Models

Model	Unit Dimensions (mm)			Weight (kg)
	H	W	D	
MIP-6	144	96	107	0.5

How To Order

Example:



The Progear Switchgear is a fully type tested Metal Enclosed switchgear cabinet; offering numerous designs as standard modular design blocks.

Designed and Built according to IEC standards, Progear can be tailored according to Customer requirements. Cabinets can be fitted with a soft starter, protection apparatuses and control products in addition to our newly developed Connex, a holistic solution for diagnostics and maintenance of the complete system.

Modular Design

Option for Multi Motor Start, Control and Protection

Separated Internal Compartments

For Complete Isolation of Low and Medium Voltage Compartments

Safety Locks

The doors are built with locks and handles that are designed to prevent accidental opening

Hinged Door Panels

Ideal for accessing wires and apparatus

Complete Flexible Design

For choice of switchgear apparatus Solcon's Progear is compatible with all switchgear apparatus suppliers



IEC 62271-200 TYPE TESTED & CERTIFIED

- Internal arc protection
- IP54 ingress protection rating
According to IEC standards
- Shock & vibration proof
According to IEC standards
- 9 Point seismic certification
According to IEC standards

Solcon Industries is a dynamic, high-tech power electronics company that remains at the forefront of design, development and manufacturing of industrial motor starting and control systems.

Solcon offers a complete range of Low and Medium Voltage Soft Starters for a wide range of standard and heavy duty applications. Solcon also manufactures industry-leading Motor Protection Relays and Control Products.

Solcon deploys advanced technology and field research to implement the highest quality criteria, guaranteeing long-term reliability to our customers. We take pride in providing custom solutions for the toughest applications including the Mining, Marine, Water, and Oil & Gas Industries.

Solcon's consistent investment in research and development, along with a strong global partner network and worldwide customer base, are the keys to our success.

A deep understanding of the market needs and application requirements have enabled Solcon to upgrade existing product lines and introduce new, innovative solutions to the market making us a market leader.

Solcon is accredited with ISO 9001:2000. Our products are designed to meet international standards such as CE, UL, cUL, Ex, EAC, Lloyds, Germanischer Lloyds, DNV, BV, ABS, RINA, KR, NK-Class, RMRS, CCS and other approvals are also available.

Certifications & Standards



Meeting your needs across industries



Solcon Industries Ltd.

www.solcon.com | contact@solcon.com

