



## 2018 PRODUCT GUIDE

Discover:

- The Solcon Data Logger
- Expanded iStart Ratings
- Solcon's Full Line of Motor Protection







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# 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 sophisticated 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 options: Modbus, Profibus, DeviceNet, Anybus
- Compact 2-phase control configuration (optional)
- Event recorder logs 99 events and includes real-time clock
- Data Logger - An integrated current and voltage wave recorder with a sampling rate of up to 50kHz and advanced graphic software interface for remote waveform monitoring (optional)
- 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
- Ground fault
- Over Voltage
- Number of starts
- Under/over frequency
- External fault
- Power ON no start
- Thermal modeling
- Phase loss
- Shorted SCR
- Over load class trip

## HRVS-DN PowerStart

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

### NEW! Control Panel (MVCP)

The new, advanced medium voltage control panel features an innovative design with new communication and control capabilities. In addition, the power and expansion capabilities deliver a modular concept to enhance the end-user experience.



- 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

### ECPT

The new Electronic Current & Potential Transformer (ECPT) provides absolute isolation between the medium voltage power section and the low voltage control compartment via a single fiber optic link. It also provides current, voltage and temperature readings to optimize the HRVS-



### Solcon Data Logger

Analyze and optimize the performance of the HRVS-DN with the integrated data logger and waveform capture software. Perform remote maintenance and diagnostics for service and support.  
*For more information, see page 7.*



# MEDIUM VOLTAGE SOFT STARTERS

## HRVS-DN PowerStart

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



The ProGear is a fully type tested, arc resistant medium voltage soft starter switchgear according to IEC 62271-200. It adheres to the highest safety standards and provides superior protection and performance.

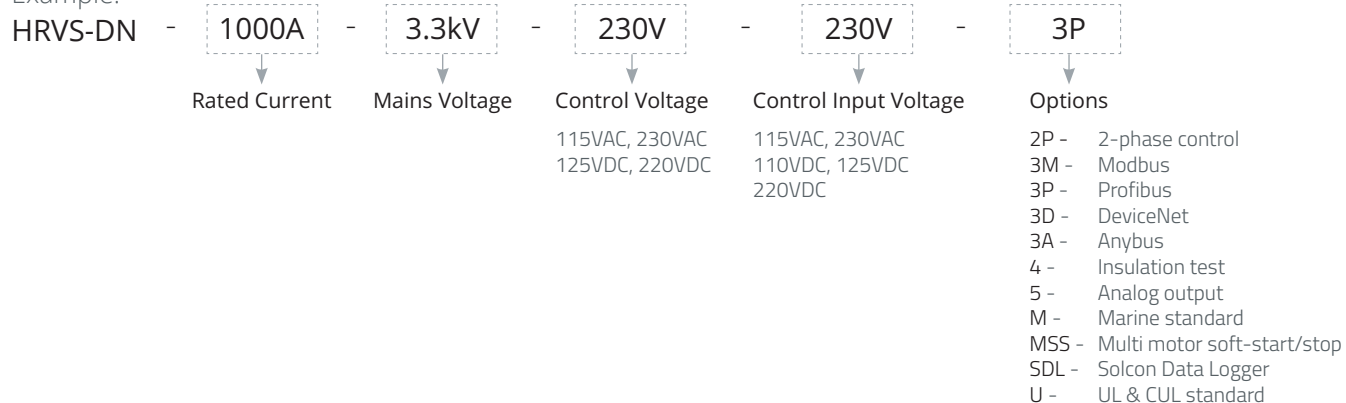
- Rated: up to 12kV, 1250A
- Internal Arc Test 31.5kA/1sec, IAC: A-FLR
- Short-time withstand current 31.5kA/3sec
- Dielectric Test - Power Frequency 28kV 60sec
  - Impulse voltage 75kV
- Temperature Rise Test
- IP54 Protection Degree

### 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
3.3	1,000	3,330		1,000	6,030		1,000	14,500		1,000	16,000
	60	280	6.6	70	670		1,200	17,400		1,200	19,200
	110	520		140	1,340		1,400	22,000		1,400	22,400
	200	950		250	2,390		1,600	25,000		1,600	25,600
	320	1,530		300	2,870		1,800	28,000		1,800	28,800
	400	1,910		400	3,820	13.8	70	1,400		70	1,400
	500	2,390		500	4,780		140	2,800		140	2,800
	600	2,850		600	5,736		250	5,000		250	5,000
	700	3,325		700	6,740		300	6,000		300	6,000
	800	3,820		800	7,650		400	8,000		400	8,000
	1,000	4,780		1,000	9,570		500	10,000		500	10,000
				1,200	11,500		600	12,000		600	12,000
				1,400	14,000		700	14,000		700	14,000
				1,600	16,000		800	16,000		800	16,000
				1,800	18,000		1,000	20,000		1,000	20,000
							1,200	24,000		1,200	24,000
							1,000	20,000		1,000	20,000
							1,200	24,000		1,200	24,000

### How To Order

Example:





# MEDIUM VOLTAGE SYSTEMS SOFTWARE

## Solcon Data Logger

### Spectrum Analysis & Diagnostics Software

The Solcon Data Logger (SDL) is an innovative solution that delivers remote system diagnostics and maintenance for Solcon's Medium Voltage HRVS-DN PowerStart and DriveStart. The SDL is also available for existing HRVS-DN installations by simply replacing the control module.

The SDL includes a multi-signal acquisition system and wave-form capture software that facilitates full spectrum analysis. Created and built by Solcon's engineering experts, the SDL is available in three formats that offer increasing levels of data, analysis and maintenance.

The SDL Software provides real-time system reporting on critical components such as line voltage, starting current, relay status, trip analysis and operation. This information can be used to monitor the current system status and provides valuable feedback on potential issues.

The innovative SDL also expedites the commissioning of Solcon's Medium Voltage Soft Starters. Technicians can leave the equipment boxes at the office because the SDL provides full analysis and starting optimization by using the Data Blaster and the low voltage commissioning procedure.

- Multi-channel signal acquisition and recording system
- PC software displays advanced waveform and analysis
- Spectrum analysis
- Option card for existing HRVS-DN installations



The Solcon Data Logger is an available option that is built into Solcon's Medium Voltage Controller.



The Solcon Data Logger can diagnose an array of issues including a soft starter trip due to a network fluctuation (phase loss).

## DriveStart

### IGBT BASED MEDIUM VOLTAGE SOFT STARTER

UP TO 6.6KV, up to 8.5MVA (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 and space while meeting top performance requirements

- More economical than a Medium Voltage VFD, yet provides similar soft start and soft stop features
- 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 6.6kV 50/60Hz +10% -15
- Power range - Up to 6.6kV, 8.5MVA
- 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

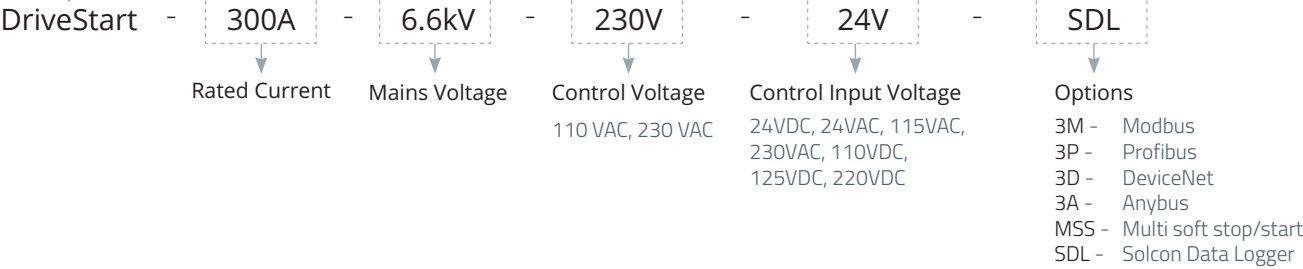


## Models | Up to 6.6KV, 750A

Mains Voltage (kV)	Rated Current (A)	Unit Dimensions (cm)			Weight (kg)
		H	W	D	
3.3	150	230	202	132	2,000
	300				
	400				
4.16	150	230	310	120	3,000
	300				
6.6	150	230	310	120	3,000
	300				
	400				
	500				
	600	260	440	120	4000
	750				

## How To Order

Example:



# 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 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
- Communication options (Anybus, Modbus, Profibus, Devicenet)
- 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
- Universal control voltage 110-220V 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

31A

Rated Current

480V

Mains Voltage

480V - 208-480  
600V - 208-600  
690V - 208-690

230V

Control Voltage

95-230V (A,B,C)  
115V, 230V (D)

24V

Control Input Voltage

95-230VAC  
24V DC

3P

Options

2P - 2-phase control  
3A - Anybus  
3M - Modbus  
3P - Profibus  
3D - Devicenet  
D - Remote key pad  
4 - Motor insulation monitor  
5 - Analog output  
6 - 3xRTD thermal sensor  
8 - Conformal coating

## RVS-DN

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

The RVS-DN is a heavy duty, advanced, reliable Soft Starter designed to operate under severe conditions to start 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				
	44	22				7.5
	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				65
	820	450				83.5
E	950	560	1,100	723	370	170
	1,100	630				240
	1,400	800				
F	1,800	950	1,300	750	392	350
	2,150	1,250				
G	2,400	1,400	1,300	900	410	350
	2,700	1,575				
	3,000	1,750				

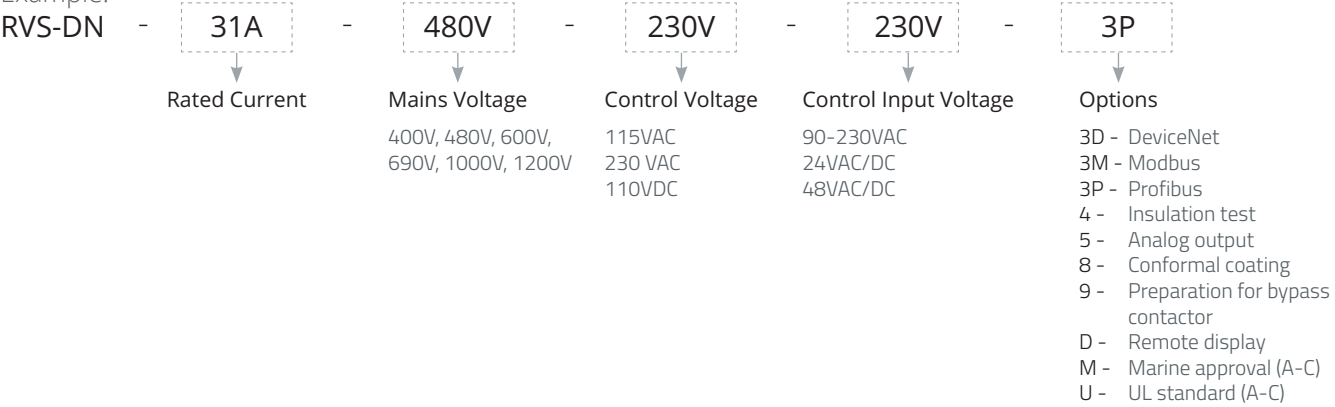
\* Dimensions differ with Marine approvals.

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				60
	310				
	390				
	460				
J	580	650	650	400	85

How To Order

Example:





## 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

Example:

### RVS-AX

31A

Rated Current

480V

Mains Voltage

230V, 400V,  
440V, 480V 600V

Options

8 - Conformal coating  
U - UL & CUL approval

# Solstart

## Compact, Analog, Low Voltage Soft Starter 8-58A, 220-600V

The Solstart is a compact, analog Soft Starter with 2-phase control, internal bypass and basic motor protection. The Solstart does not require control voltage to operate and is an ideal solution where space is limited.

## 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)
- Suitable for single phase motor



Models | 8-58A, 220-600V

Model	Rated Current (A)	Motor kW @400V	Unit Dimensions (mm)			Weight (kg)
			H	W	D	
A	8	3	75	45	110	0.42
B	17	8	75	90	105	0.55
	22	11				
C	31	15	190	65	114	1.3
	44	22				
	58	25				

## How to Order

Example:

Solstart -

31A

Rated Current

400V

Mains Voltage  
230V, 400V, 440V  
480V, 600V

U

Options

- 8 - Conformal coating
- U - UL & CUL approval
- DRM - DIN rail mounting

# CONTROL PRODUCTS

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
- Adjustable braking time
- Auto stop - DC Injection stops when the motor stops
- DIN Rail mounting (Rated current 10A)
- Easy to install and simple to operate
- Reduced stopping time - Increases production rate in machine tools and high inertia loads
- Reduced stopping time - For increased safety of hazardous machines
- 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
- Maintenance free, highly reliable operation

## 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				
	820	470	384	224	222	13.2

## How to Order

Example:

Solbrake

-

31A

-

400V

-

8

Rated Current

Mains Voltage

Options

230V, 400V, 480V, 600V, 690V

8 - Conformal coating

E - 30 sec braking time

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
	72	50				6.5
B	85	59	390	172	195	8.5
	105	73				
C	145	100	385	274	238	14.5
	170	118				
	210	145				
D	310	215	455	380	292	31
	390	270				
E	460	318	555	380	292	51
F	580	401	640	470	302	53
	820	567	640	470	302	53
G	950	657	Consult Factory			
	1100	761				
	1400	969	1225	1050	471	172
	1500	1038				

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
105	182				
160	277				
200	346				

How to Order

Example:

TPS

-

31A

-

400V

-

230V

-

230V

-

3M

Rated Current

Mains Voltage  
400V, 480V, 600V,  
690V, 1000V

Control Voltage  
115VAC, 230VAC

Control Input Voltage  
90-230VAC

Options  
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 13.8kV, 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 switchgear 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				
	500	1000			
6.6	70	Consult Factory			
11	140				
13.8	300				
	500				

How To Order

Example:

MV-TPS - 70A - 4.16kV - 230V - 230V - 3M

Rated Current

Mains Voltage

Control Voltage  
115VAC, 230VAC  
125VDC, 220VDC

Control Input Voltage  
90-230VAC  
110VDC, 125VDC

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

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		210	110
	1,200	13,700			
11	600	11,400			
	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:

HRVS-TX

-

2

-

0

-

3R

-

M

Supply Voltage

2 - 110-230V

Control Input Voltage

0 - 220V AC/DC

1 - 110VAC

Thermal Sensor

3R - 3 RTD (Pt100)

Options

M - Modbus



# 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.

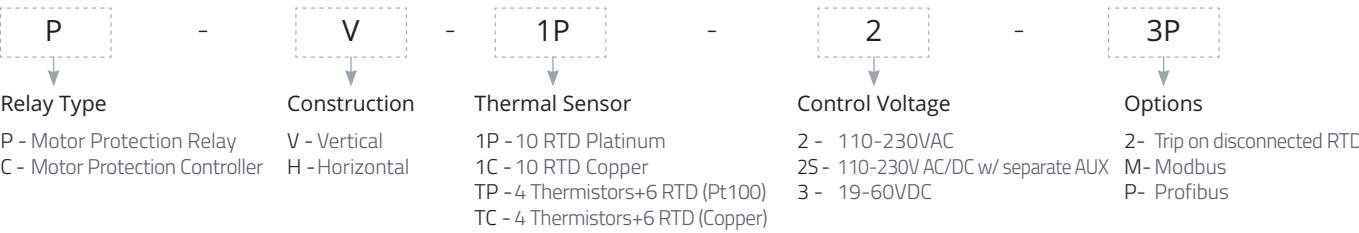


### Advanced Features

- 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).

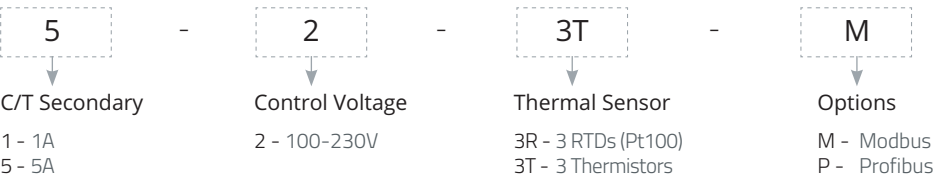


### Advanced Features

- 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  $I \geq 10\%$
  - 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 overheating. 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:

TPR-6 - 14 - 2 - M

Temperature Inputs

6 - 6 Temperature Inputs

14 - 14 Temperature Inputs

Control Voltage

2 - 100-230V AC/DC

Options

8 - Conformal coating

M - Modbus

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.

Two types of units available:

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



Advanced Features

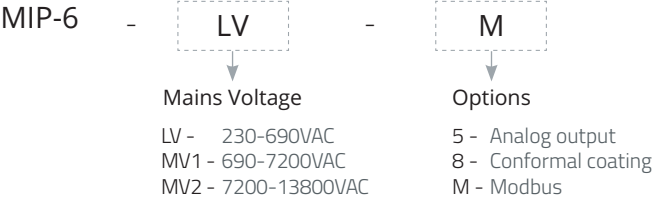
- Monitors insulation deterioration of Low / Medium Voltage motors
- Displays the present and average insulation resistance on LCD
- Monitoring while motors are de-energized
- Programmable parameters
- Microprocessor based technology
- Alarm / Trip Setpoint in the range of 0.1 to 60 Mega Ohms
- Utilizes 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:



## MV Soft Start Test Bench

MV Multi-Voltage Multi-Current Test Bench  
2.2-13.8kV, 40A-2000A

### NEW! Test Various Motor Ranges

The new Medium Voltage Soft Starter Test Bench provides multi-voltage, multi-current testing of medium voltage motors. This unique solution uses one soft starter to test numerous voltage ratings. Low voltage and multi-starting testing can also be performed using the MV Soft Starter Test Bench.

- Available Testing Ranges:  
Voltage Range – From 2.3 up to 13.8kV  
Current Range – From 40A up to 2000A
- Easy to setup and operate
- Safe, proven design





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.

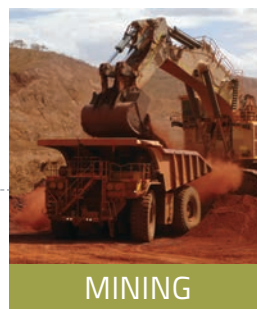
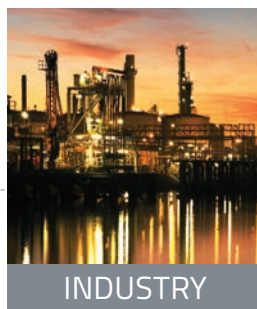
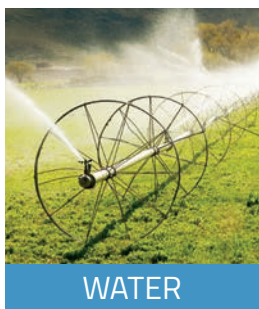
A deep understanding of the market needs and application requirements have enabled Solcon to upgrade existing product lines and introduce new, innovative solutions to the market making us a market leader.

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.

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