

Ex - Digital soft starters

- Three phase synchronous motors
- Three phase asynchronous motors
- Transformer starting (eliminating magnetizing inrush current)



HRVS-DN-EX/TX

Medium Voltage
50-2700A, 1500-15000V

RVS-EX

Low Voltage
8-1100A, 208-1100V

SOLCON



General Information

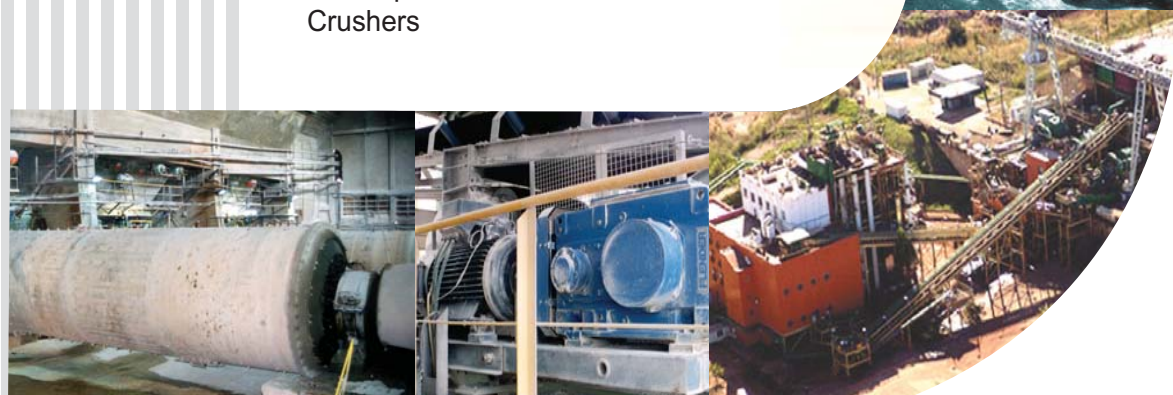
Ideal for environmentally hazardous and potentially explosive environments such as coal mines (methane gas), oil & gas industries, etc. These digital soft-starters are suitable for starting explosion proof (Ex) three-phase AC synchronous and asynchronous motors up to 15000V and provide enhanced features such as built in bypass, communication capability, soft starting and stopping, pump control and pulse start.



Solcon, the industry leader in soft-starters design is featuring its latest state-of-the-art technology for hazardous environment applications. Including enhanced innovations such as its unique "S" curve, low starting current, adjustable starting speed and low impact on network power quality.

Widely used in:

- Open air coal mines
- Petrochemical plants
- Metallurgical industry
- Coal transportation plants
- All types of conveyors
- Harbors and ports
- Power plants
- Crushers



HRVS-DN-EX 50-2700A, 1500-15000V

Medium Voltage Soft-Starter, for Asynchronous and Synchronous Motors in explosive environments

The very first Medium Voltage soft-starter installed in an Ex-d (iia) cabinet. Powered by an advanced 32-bit controller, with friendly man-machine interface and many unique features and capabilities.

Advantages at a glance:

- Patent pending fiber-optic firing system providing complete isolation between MV and LV compartments
- Advanced electronic potential transformer
- Unique fault indication down to the individual thyristor level
- Unique pump control curve selection, field adjustable for a variety of applications
- Low voltage test mode - complete testing with any low voltage motor
- No voltage test mode - "functional" low voltage full cabinet test
- HRVS-TX for transformer magnetization - eliminating transformer inrush current
- Easily transportable, durable, rolling design



Performance Standards:

- GB3836.1-4-2000 passes the Requirement of Electrical apparatus for explosive atmosphere
- Safety certificate of approval for coal mining products
- ISO9001:2000 International Quality System Certification
- Protection Class: FLP, IP54 (TBD)
- Ambient Temperature: (-)5 - 40°C
- Ambient Humidity: 95% without condensation

Structure and Size

Type	Rated Voltage	Rated Current	Rated Power		Overall Size			Explosion Product Symbol
			kW	HP	W	H	D	
QJGR-75/6	6kV	75A	600	810	1940	1570	1050	Ex-d (id)I
QJGR-150/6	6kV	150A	1210	1630				
QJGR-250/6	6kV	250A	2170	2890				
QJGR-300/6	6kV	300A	2610	3490				
QJGR-400/6	6kV	400A	3480	4660				

RVS-EX 8-310A, 208-600V & 390-1100A up to 1100V

Digital Microprocessor Based Soft-Starter using the RVS-DX platform modified and approved for starting low voltage Ex motors in: Ex-E; Ex-N; Ex-D; Ex-P environments

The RVS-EX incorporates all of the traditional RVS-DX features, with the required pre-programmed Characteristics for EX motors

Advantages at a glance:

- Severe duty design (including Shock and Vibration protection)
- Programmable parameters
- Fourth generation, state of the art, Microprocessor technology
- LCD - illuminated, with 2 lines of 16 character each, for easy readings and programming (English, Spanish, German, French and Russian)
- Four LEDs for continuous status display
- Six keys for easy programming
- Outputs - Two Change Over relays, 8A / 250V
- Optional RS-485 Modbus / Profibus communication



Temperature:

Operating : 0° to 50°C

Unique Parameters Choice:

- 1) Maximum starting time: 15 Seconds
- 2) Under voltage: 90%
- 3) Under voltage delay: 4 Seconds
- 4) Over voltage: 107%
- 5) Over voltage delay: 1 Second
- 6) Overload protection: 110%
- 7) Starting current: 400%
- 8) Starting voltage: 40% - 50%

RVS-DN

8-3000A, 208-1100V

Stainless Steel and Copper construction for severe environmental conditions. (None Aluminum materials)



Additional Products

Additional catalogues available from Solcon's product range



RVS-DN
Digital Soft-Starter
8-3000A, 200-1000V
Severe, heavy and standard
duty for Line and Inside
Delta applications



RVS-AX
Electronic Soft Starter
8-170A, 220-600V
with motor protection
and a built-in bypass



MPS-6
Motor Protection and
Control Relay



RVS-DX
Digital Soft-Starter
8-1100A, 200-600V
with a built-in bypass
and LCD display for
Line and Inside
Delta applications



SOLSTART PLUS
Soft Starter 31-170A, 220-600V
with a built-in bypass and
motor protection



MIP-6
Motor Insulation
Protection Relay



RVS-TX
Digital Transformer
Starter
8-3000A, 220-1000V



Solstart
Miniature Soft Starter
8-58A, 208-600V
with a built-in bypass,
for single and three
phase motors



TPR-6
Temperature
Protection Relay



TPS
Thyristor Power
Controller (Heaters)
Zero Crossing and
Phase Control



SMB
DC Injection Brake



MPS-3000
Motor Protection
& Control Relay



DGC-2000
Digital Generator Control
& Protection system



PFC-10
Power Factor Controller



DPM-10
Digital Power Meter

Hazardous Locations Classifications

Classification	IEC, Cenelec NEC 505 Codes	NEC 500 CSA Codes	Classification	IEC, Cenelec NEC 505 Codes	NEC 500 CSA Codes
Material Presence			Max Surface Temp.		
Continuously Present	Zone 0	Division 1	450°C	T1	T1
Intermittently Present	Zone 1	Division 1	300°C	T2	T2
Abnormally Present	Zone 2	Division 2	280°C		T2A
Apparatus			260°C		T2B
Gas & Vapors			230°C		T2C
Acetylene	Group IIC	Class I / Group A	215°C		T2D
Hydrogen	Group IIB	Class I / Group B	200°C	T3	T3
Ethylene	Group IIB	Class I / Group C	180°C		T3A
Propane	Group IIA	Class I / Group D	165°C		T3B
Methane	Group I	N/A	160°C		T3C
Dust			135°C	T4	T4
Metal	N/A	Class II / Group E	120°C		T4A
Coal	N/A	Class II / Group F	100°C	T5	T5
Grain	N/A	Class II / Group G	85°C	T6	T6
Fibers (All)	N/A	Class III			



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