

AMV-S Medium Voltage Soft Starter Manual

AMV-S
Soft Starter

Product Feature:

AMVS, a digital microcomputerized soft starter for medium-voltage AC motor, which uses advanced single chip microcomputer, PLC controller, colored man-machine interface touch screen, high voltage semiconductor power electronic devices and modern control technology to form a new type of solid state product to start and to protect the running of high voltage motor. In addition to the excellent starting function.

This product also has complete comprehensive protection function for the motor running, which can ensure that electrical and mechanical rotating equipment operates safely and reliably at various circumstances. Compared with other types of high voltage motor soft starter (such as liquid resistance type), soft starter costs less energy in the process of starting. Therefore it has obvious energy saving effect, and can be started frequently. At the same time, since soft starter is a solid state device, it can work for a long-term without maintenance, small in size, easy to move, having good vibration resistance and other significant advantages. More than that, It has following unique features and obvious advantages, and it is the ideal replacement for other traditional medium-voltage soft start products.

1）.Initial voltage of starting can be set flexibly according to the actual situation and demand of the equipment. The lowest set point is 15% of the supply voltage, the highest is 90%.Thus the motor has a larger starting torque and smaller starting current which reduces the requirement of power grid capacity required by equipment operation and saves the investment of related equipment. It reduce the impact stress to motor itself and to transmission machinery which can prolong the service life of motor and transmission machinery.

2).The initial start voltage, start time and starting current limit can be set in the upper part of the color LCD touch screen, while the soft stop deceleration time can be freely set according to the requirements of the load characteristics, in order to meet the soft start and stop working conditions of various equipment and motors.

3).Multiple starting modes (reduced voltage starting and constant current starting) can be used to satisfy the possible demands of all kinds of equipment's starting.

4).Complete motor running protection function, to ensure the equipment's safe operation, with its protective functions as :
A. Alarm for over voltage of input power supply
B. Alarm for under voltage of input power supply
C. Alarm for phase loss of input power supply
D. Alarm for motor overload by inverse time protection
E. Alarm for current imbalance of MV motor
F. Alarm for excess startup time of the motor
G. Alarm for the bypass contactor fault
H. Alarm for residual current of the equipment
I. Alarm and display for short circuited SCR of three-phase main line
J. Alarm for instantaneous trip caused by short circuit (which can be calibrated as 0.1-2.5 times current of CT scale)

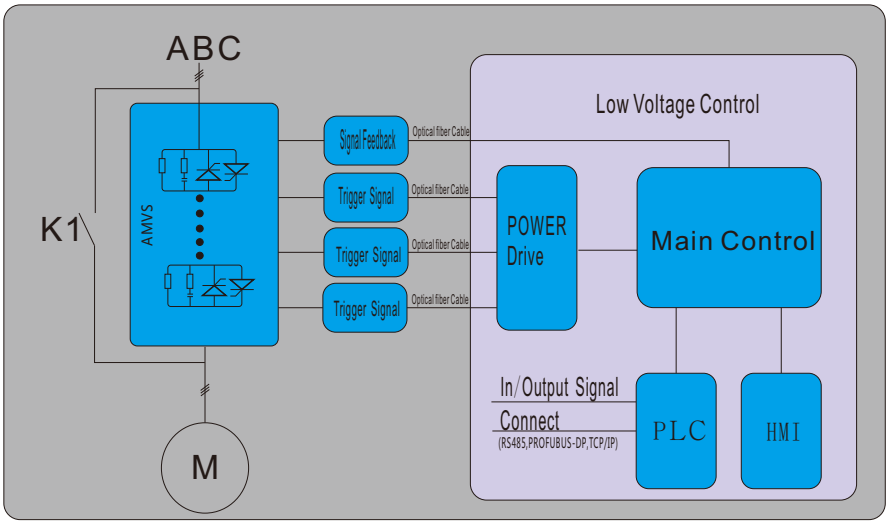
5).During operating, soft starter displays three-phase current of motor, the residual current of the line and motor, the voltage of power supply, and the accumulated run time of the motor .Not being affected by power loss, it's easy to learn about the equipment's total run time and to conduct regular maintenance

6).The running parameters are all displayed on colored HMI with Chinese text, which is easy to set parameters.

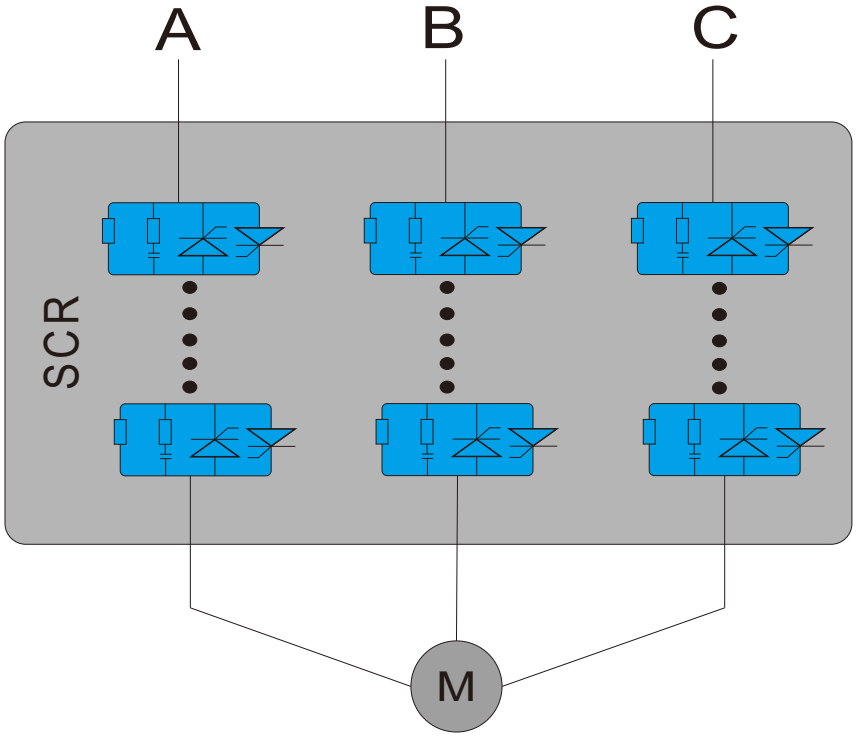
It can provide Profibus-DP communication interface according to user's requirements, to communicate with remote monitor computer's networking of higher level, and to realize the remote control.(please note when ordering if other communication is needed)

Product composition and working principle:

Medium-voltage soft starter is mainly composed of medium- voltage silicon controlled (thyristor) components, medium- voltage vacuum contactor, signal sampling circuit, trigger circuit, power driver circuit, main control board, optical fiber isolation signal cables, secondary relay control circuit, high voltage cabinet and other parts.



The basic working principle of medium-voltage soft starter is to detect the accurate zero point of AC voltage at real-time, then based on the zero moment, to trigger and break over the SCR with delay, in order to realize regulating voltage level accurately by precise control of AC voltage conduction angles' change.



The product uses several SCRs in each phase, which can meet the requirements of a wide range of voltage and current rating. During the start control, when the motor speed achieves the rated speed or the output voltage reaches 100%, it will switch to bypass contactor to feed the motor. After the switching to bypass, , silicon controlled components stop working, which greatly reduces heat dissipation of the equipment components, also reduces the energy consumption, prolongs the service life and improve the reliability of the product.

Product type Selection:

AMV- S- V□□-□□□A

- Current
- Voltage : 02=2.3KV,03=3.3KV,04=4.16KV,06=6KV,10=10KV
- Soft Starter
- A MIDDLE VOLTAGE

V	A	KW	Type
2.3KV	40	132	AMVS-V02-040A
	80	250	AMVS-V02-080A
	100	315	AMVS-V02-100A
	125	400	AMVS-V02-125A
	160	500	AMVS-V02-160A
	200	630	AMVS-V02-200A
	250	800	AMVS-V02-250A
	315	1000	AMVS-V02-315A
	400	1250	AMVS-V02-400A
	500	1600	AMVS-V02-500A
	630	2000	AMVS-V02-630A
	800	2500	AMVS-V02-800A
	990	3150	AMVS-V02-990A

V	A	KW	Type
3.3KV	40	160	AMVS-V03-040A
	80	315	AMVS-V03-080A
	100	400	AMVS-V03-100A
	125	500	AMVS-V03-125A
	160	630	AMVS-V03-160A
	200	800	AMVS-V03-200A
	250	1000	AMVS-V03-250A
	315	1250	AMVS-V03-315A
	400	1600	AMVS-V03-400A
	500	2000	AMVS-V03-500A
	630	2500	AMVS-V03-630A
	800	3150	AMVS-V03-800A
	990	4000	AMVS-V03-990A

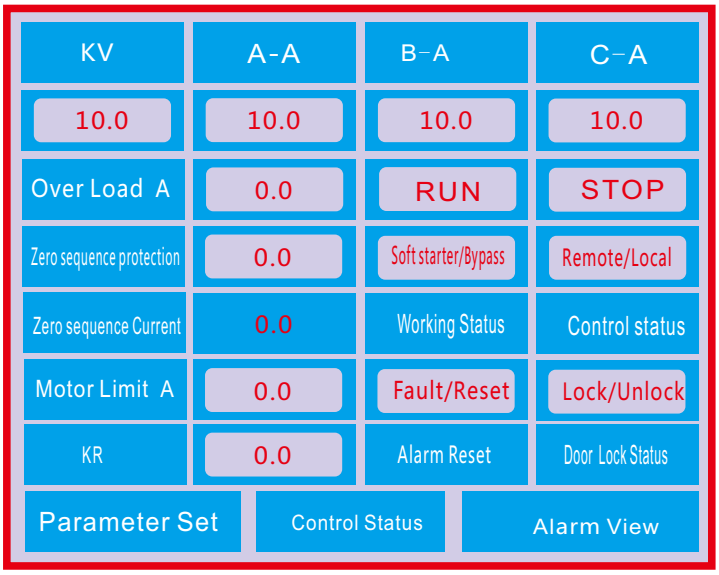
v	A	KW	Type
4.16KV	40	230	AMVS-V04-040A
	80	450	AMVS-V04-080A
	100	560	AMVS-V04-100A
	125	710	AMVS-V04-125A
	160	900	AMVS-V04-160A
	200	1120	AMVS-V04-200A
	250	1400	AMVS-V04-250A
	315	1800	AMVS-V04-315A
	400	2240	AMVS-V04-400A
	500	2800	AMVS-V04-500A
	630	3550	AMVS-V04-630A
	800	4500	AMVS-V04-800A
	990	5600	AMVS-V04-990A

v	A	KW	Type
6KV	40	315	AMVS-V06-040A
	80	630	AMVS-V06-080A
	100	900	AMVS-V06-100A
	125	1120	AMVS-V06-125A
	160	1400	AMVS-V06-160A
	200	1800	AMVS-V06-200A
	250	2240	AMVS-V06-250A
	315	2800	AMVS-V06-315A
	400	3550	AMVS-V06-400A
	500	4500	AMVS-V06-500A
	630	5600	AMVS-V06-630A
	800	7100	AMVS-V06-800A
	990	8000	AMVS-V06-990A

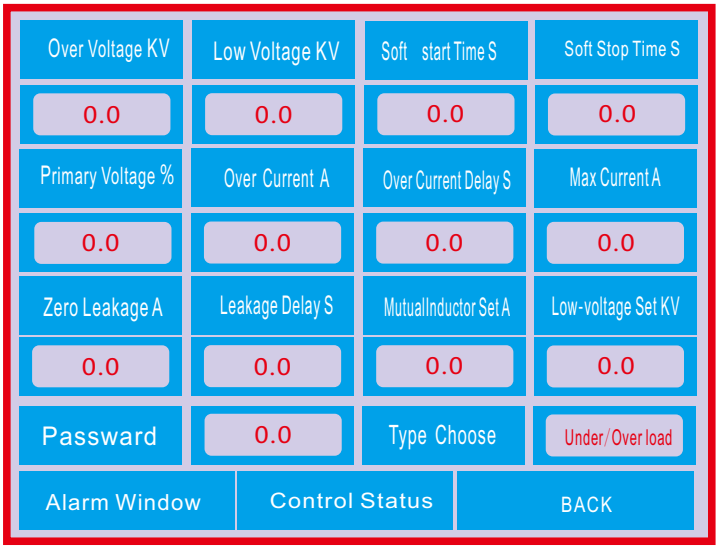
v	A	KW	Type
10KV	40	560	AMVS-V10-040A
	80	1120	AMVS-V10-080A
	100	1400	AMVS-V10-100A
	125	1800	AMVS-V10-125A
	160	2240	AMVS-V10-160A
	200	2800	AMVS-V10-200A
	250	3600	AMVS-V10-250A
	315	4500	AMVS-V10-315A
	400	5600	AMVS-V10-400A
	500	7100	AMVS-V10-500A
	630	9000	AMVS-V10-630A
	800	11200	AMVS-V10-800A
	990	14000	AMVS-V10-990A

Standard **Cabinet Dimension:**
H2200*W1000*D1250MM

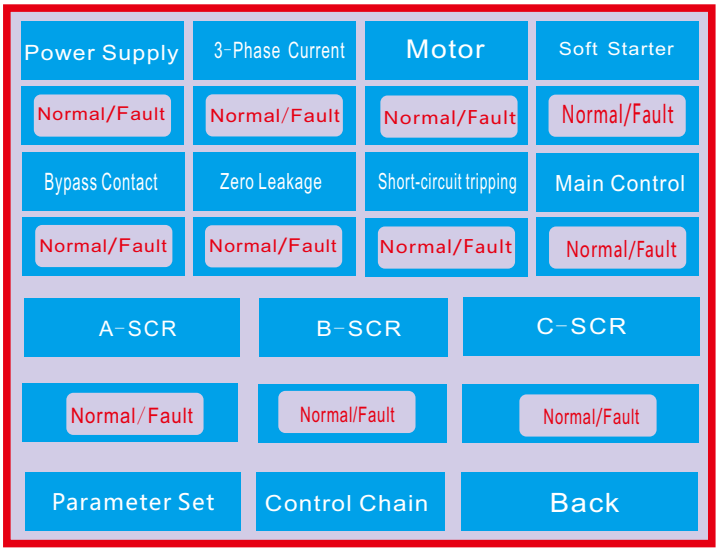
Notes:
Manufacture according to customer’ s requirements



Main Window



Parameter Set Window

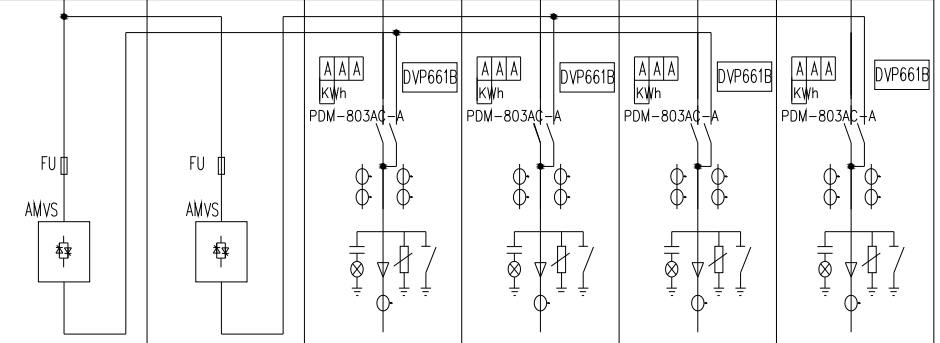


Alarm Window

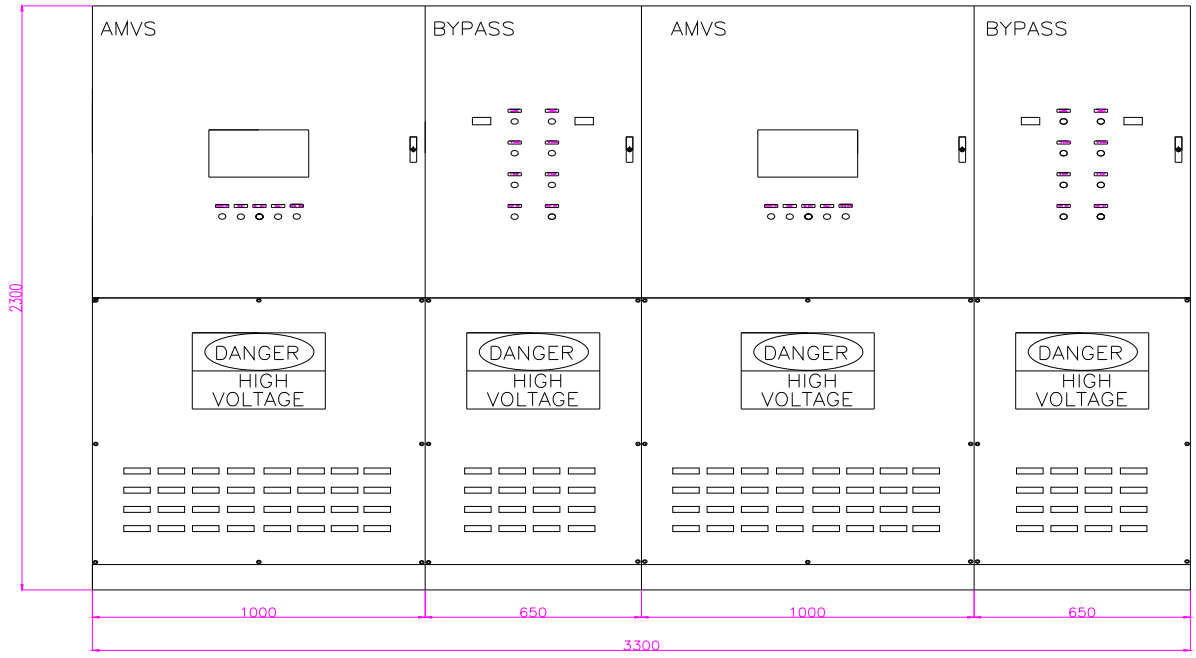
In AMVS series soft starter, colored touch screen, PLC, main control board of soft starter communicate with each other, to exchange data, with a friendly interface, simple commissioning and easy operation!

Project Applied

The case is the application of two soft starters perform sequential control, each starter controlling two motors, with another starter as spare. This design reduces the impact on the grid by equipment's start, solves

开关柜编号	AH-11	AH-12	AH-13	AH-14	AH-15	AH-16
主回路采用线缆连接						
6KV一次系统图						
开关柜型号						
设备容量			630KW	630KW	560KW	280KW
负荷名称		软起柜	1#真空泵电机出线柜	2#真空泵电机出线柜	鼓风机电机出线柜	氢压机电机出线柜
软起动器AMVS	1	1				
真空接触器JCZ5-7.2/D200			2	2	2	2
电流互感器LZZBJ9-10 0.2/5P10			150/5*2	150/5	150/5	75/5
熔断器XRNP-10/0.5A	3	3				
电压互感器JDZX10-6B	3	3				
过电压保护器 TBP-A-7.6F			1	1	1	1
过电压保护器 TBP-B-7.6F						
过电压保护器 TBP-C-7.6F						
带电显示器 DXN-6	1	1	1	1	1	1
零序电流互感器 TY-LJK 5VA 100/5A			1	1	1	1
避雷器HY5W Z2-10/27KV						
接地开关JN15-7.2/31.5KA			1	1	1	1
电力电缆型号及规格	YJV-6-3*35	YJV-6-3*35	YJV-6-3*35	YJV-6-3*35	YJV-6-3*35	YJV-6-3*35
电缆编号	L11	L12	L13	L14	L15	L16
柜体外形尺寸: 宽*深*高= 0*1250*2200	1000	1000	1000	1000	1000	1000

AMV-S Cabinet Diagram





Partner Information

AMV-S
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