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QJX2 星三角减压起动器



开启式外观
Open Type Appearance



封闭式外观
Enclosed Appearance



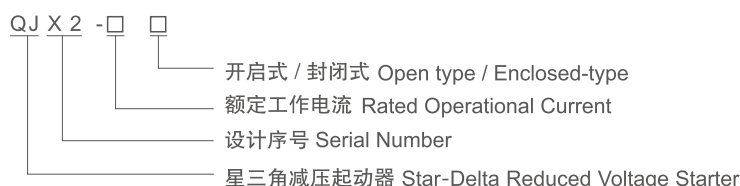
封闭式内部
Enclosed Interior

1 适用范围 Application range

QJX2 系列“星三角”减压起动器主要用于交流50Hz或60Hz，额定工作电压至380V，在AC-3使用类别，额定工作电流至95A的电路中，作为电动机的起动之用，起动器设有空气延时头，可自动进行“星三角”转换，以降低电动机起动电流。

QJX2 Series star-delta reduced voltage starter is suitable for starting motor in the circuit of AC 50/60Hz, voltage up to 380V and current up to 95A. It is a motor starter which provided with timer for automatic changeover of star-delta to reduce the voltage and current of motor starting.

2 型号及含义 Type and Signification



注：下单时请备注封闭式或开启式； Notice : Please note enclosed or open type when placing order.

3 正常工作条件和安装条件 Normal working conditions and installation conditions

- 周围空气温度为： $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ ，24小时内其平均值不超过 $+35^{\circ}\text{C}$ 。
 - 海拔高度：不超过2000m。
 - 大气条件：最高温度为 $+40^{\circ}\text{C}$ 时，空气的相对湿度不超过50%，在较低温度下可以允许有较高的相对湿度，例如 20°C 时达90%。对由于温度变化偶尔产生的凝露应采取特殊的措施。
 - 污染等级：3级。
 - 安装类别：III类。
 - 安装条件：安装面与垂直面倾斜度不大于 $\pm 5^{\circ}$ 。
 - 冲击振动：产品应安装和使用在无显著摇动、冲击和振动的地方。
- 3.1 Temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$, average temperature not exceed $+35^{\circ}\text{C}$ in 24 hours.
- 3.2 Altitude: Do not exceed 2000m.
- 3.3 Air Condition: Atmospheric relative humidity can't exceed 50% at ambient air temperature of $+40^{\circ}\text{C}$, and the higher relative humidity may be allowed at lower temperatures. For example, when the ambient air degree is 20°C , the relative humidity can reach 90%. Because of the occasional condensation phenomenon of the product due to the temperature changes, the user should take special protective measures.
- 3.4 Pollution Grade: Grade 3.
- 3.5 Installation category : III Class.
- 3.6 Mounting Condition: The inclination between the mounting plane and the vertical plane shall not exceed $\pm 5^{\circ}$.
- 3.7 Impact shock: The product shall be installed and operated at a place without obvious shake, impact and vibration.

4 主要参数及技术性能 Main parameter and technical characteristic

4.1 产品组成及主要参数 Product Composition and Main Parameters

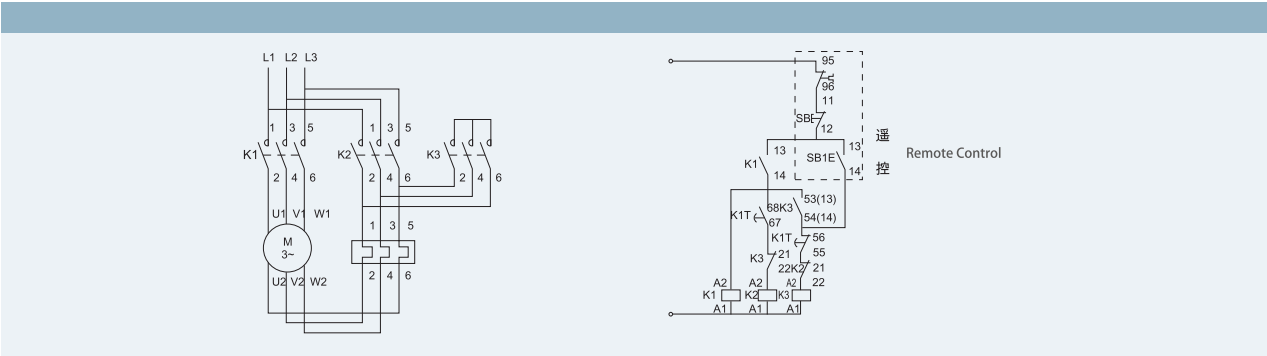
基本规格 Model	额定绝缘 电压Ui (V) Rated Insulated Voltage	断续工作制下的Ie (A) Intermittent Duty (A)		可控制电动机最大功率 (kW) Max. Power of Motor can be controlled (kW)			热过载继电器 Thermal Overload Relay		交流接触器型号规格 Model Specification of AC contactor		
		380V	660V	220V	380V	660V	型号 Type	整定电流范围A Setting Current Range	Y运转KM1 Y Operate KM1	△运转KM3 △ Operate KM3	隔离用KM2 Isolation with KM2
QJX2-09	690	09	09	4	7.5	10	JR28-13	7-10	CJX2-0910	CJX2-0901	CJX2-0910
QJX2-12		12	8.9	5.5	11	13	JR28-13	9-13	CJX2-0910	CJX2-1201	CJX2-1210
QJX2-18		18	10.6	7.5	15	18.5	JR28-13	12-18	CJX2-1210	CJX2-1801	CJX2-1810
QJX2-25		25	18	11	18.5	25	JR28-13	17-25	CJX2-1810	CJX2-2501	CJX2-2510
QJX2-32		32	21	15	25	33	JR28-13	23-32	CJX2-1810	CJX2-3201	CJX2-3210
QJX2-40		40	34	18.5	33	50	JR28-33	30-40	CJX2-2510	CJX2-4011	CJX2-4011
QJX2-50		50	39	25	45	63	JR28-33	37-50	CJX2-4011	CJX2-5011	CJX2-5011
QJX2-65		65	42	30	55	63	JR28-33	48-65	CJX2-4011	CJX2-6511	CJX2-6511
QJX2-80		80	49	37	63	80	JR28-33	63-80	CJX2-5011	CJX2-8011	CJX2-8011
QJX2-95		95	49	45	80	80	JR28-33	80-93	CJX2-6511	CJX2-9511	CJX2-9511

QJX2 星三角减压起动器

4.2 起动器控制电动机功率 Motor Power Controllable by The Starter

380V三相鼠笼电动机额定电流 Rated Current of 380V 3-phase Squirrel-cage Motor		功率 (kW) Power	适配产品型号 Adapted Product Model	与“星三角”减压起动器相配热继电器 Thermal Relay Matched with Star-delta Pressure Reducing Starter	相配熔断器 Matching Fuse
Pe (kW)	Ie (A)	A 0.58 (Ie)			
7.5	15.5	8.9	QJX2-09	JR28-13	20
9	18.5	10.7	QJX2-12	JR28-13	20
10	20	11.6	QJX2-12	JR28-13	20
15	30	17.4	QJX2-18	JR28-13	32
18.5	37	21.5	QJX2-25	JR28-13	50
22	41	25.5	QJX2-32	JR28-13	63
25	52	30.2	QJX2-32	JR28-13	63
30	60	34.8	QJX2-40	JR28-33	80
33	68	39.5	QJX2-40	JR28-33	80
37	72	41.8	QJX2-50	JR28-33	100
40	79	45.8	QJX2-50	JR28-33	100
45	85	49.3	QJX2-50	JR28-33	100
51	98	56.3	QJX2-65	JR28-33	125
55	105	60.9	QJX2-65	JR28-33	125
59	112	65	QJX2-80	JR28-33	125
63	117	67.9	QJX2-80	JR28-33	125
75	138	80	QJX2-95	JR28-33	160
80	147	85.3	QJX2-95	JR28-33	160

4.3 接线图 Wiring Diagram



5 结构特点 Structural Features

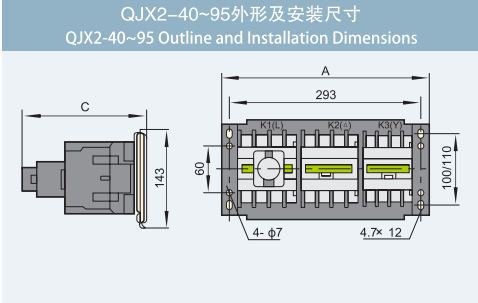
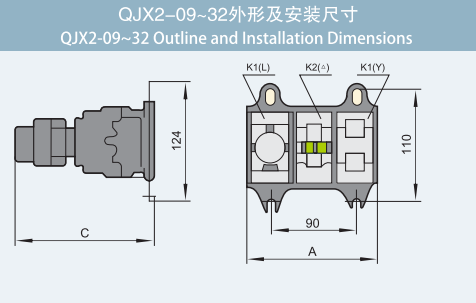
5.1 本起动器由三台接触器和空气延时头组成，三台接触器均安装在同一个铁底板上，靠左面的接触器为连接主电路进、出线，另两台为星三角转换接触器，空气延时头挂装在最左侧接触器上。

This starter is composed of three contactors and an air delay. Three contactors are installed on the same iron base plate, the left contactor is connected to the incoming and outgoing lines of the main circuit, and the air delay is mounted on this contactor. The other two are star-delta changeover contactors.

QJX2 星三角减压起动器

6 外形及安装尺寸
Outline and Installation Dimensions

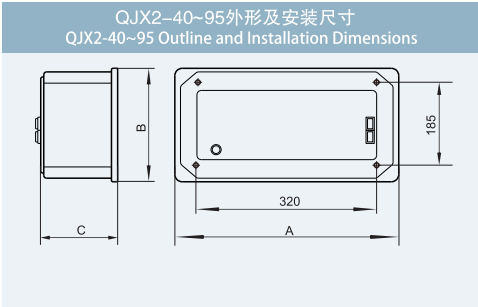
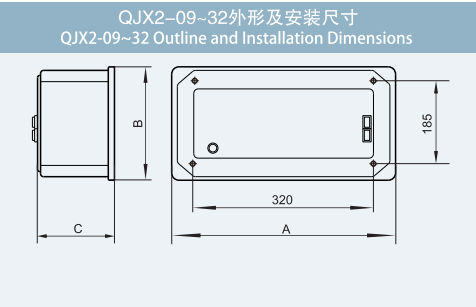
开启式 Open type



mm

型号 Model	QJX2-09	QJX2-12	QJX2-18	QJX2-25	QJX2-32	QJX2-40	QJX2-50	QJX2-65	QJX2-80	QJX2-95
A	140	140	140	174	174	310	310	310	310	310
C	149	149	154	164	169	185	185	185	196	196

封闭式 Enclosed type



mm

型号 Model	QJX2-09~32	QJX2-40~95
A	370	470
B	235	265
C	102	110

QJX3 星三角启动控制箱

1 适用范围 Application range

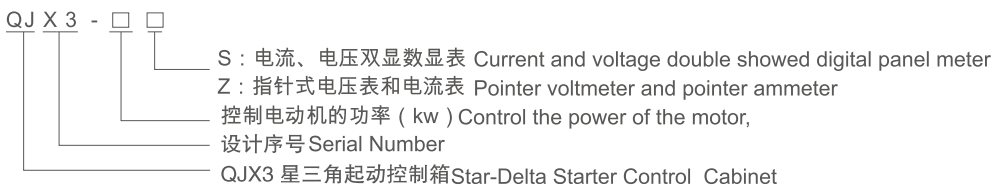
QJX3 系列星三角启动控制箱，使用于交流380V 50/60Hz，在AC-3使用功率为11KW~45KW以下的三相鼠笼型感应电动机降压启动之用，启动方式有“Y”自动换成“△”运行，对电动机具有过载，断相与短路保护功能，广泛用于压缩机，风机，水泵等工业设备。

QJX3 Star-Delta Starter Control Cabinet mainly be applicable to the circuit of voltage 380V, AC 50/60Hz. It is used for controlling the 3-phase squirrel-close type induction motor with a power of less than 45kW on AC-3. The startup mode is automarically changed from "Y" to "△". It can protect the motor from overload, open phase, and short circuit. It is widely used in compressors, fans, water pumps and other industrial equipment.



指针式电压表和电流表
Pointer voltmeter and
pointer ammeter

2 型号及含义 Type and Signification



注：下单时请备注电流、电压双显指示表式 或 数显表式；
Note: Please note current and voltage double showed digital panel meter type (S) or pointer voltmeter and pointer ammeter type (Z) when placing the order.

3 正常工作条件和安装条件 Normal working conditions and installation conditions

- 1 周围空气温度为：-5℃~+40℃，24小时内其平均值不超过+35℃。
- 2 海拔高度：不超过2000m。
- 3 大气条件：最高温度为+40℃时，空气的相对湿度不超过50%，在较低温度下可以允许有较高的相对湿度，例如20℃时达90%。对由于温度变化偶尔产生的凝露应采取特殊的措施。
- 4 污染等级：3级。
- 5 安装类别：Ⅲ类。
- 6 安装条件：安装面与垂直面倾斜度不大于±5°。
- 7 冲击振动：产品应安装和使用在无显著摇动、冲击和振动的地方。

- 1 Temperature: -5℃ ~ +40℃, average temperature not exceed +35℃ in 24 hours.
- 2 Altitude: Do not exceed 2000m.
- 3 Air Condition: Atmospheric relative humidity can't exceed 50% at ambient air temperature of +40℃, and the higher relative humidity may be allowed at lower temperatures. For example, when the ambient air degree is 20℃, the relative humidity can reach 90%. Because of the occasional condensation phenomenon of the product due to the temperature changes, the user should take special protective measures.
- 4 Pollution Grade: Grade 3.
- 5 Installation category : III Class.
- 6 Mounting Condition: The inclination between te mounting plane and the vertical plane shall not exceed ±5°.
- 7 Impact shock: The product shall be installed and operated at a place without obvious shake, impact and vibration.



电流、电压双显数显表式
Current and voltage double
showed digital panel meter

QJX3 星三角启动控制箱

4 产品的选用 Product Selection

元器件清单 Components List									
电气 符号 Electrical Symbols	元器件名称 Name	型号 Model	数量 Quantity	型号 Model	数量 Quantity	型号 Model	数量 Quantity	型号 Model	数量 Quantity
		QJX3-11		QJX3-15		QJX3-18.5		QJX3-22	
QF	微型断路器 Mini circuit breaker	AON-63 3P/D63A	1	AON-63 3P/D63A	1	AON-63 3P/D63A	1	AON-125 3P/D100A	1
KM1	交流接触器 AC contactor	CJX2-2510 25A 380V	1	CJX2-2510 25A 380V	1	CJX2-3210 32A 380V	1	CJX2-4011 40A 380V	1
KM2	交流接触器 AC contactor	CJX2-2501 25A 380V	1	CJX2-2501 25A 380V	1	CJX2-3201 32A 380V	1	CJX2-4011 40A 380V	1
KM3	交流接触器 AC contactor	CJX2-1210 12A 380V	1	CJX2-1810 18A 380V	1	CJX2-2510 25A 380V	1	CJX2-3210 32A 380V	1
FM	电动机综合保护器 Motor Protector	JD-5/80 1-80A 380V	1	JD-5/80 1-80A 380V	1	JD-5/80 1-80A 380V	1	JD-5/80 1-80A 380V	1
KT	时间继电器 Time relay	ST3P A-B 0-60s 380V	1	ST3P A-B 0-60s 380V	1	ST3P A-B 0-60s 380V	1	ST3P A-B 0-60s 380V	1
FU	熔断器(选用) Fuse protector (Optional)	RT18-32 6A	1	RT18-32 6A	1	RT18-32 6A	1	RT18-32 6A	1
HL1	电流、电压指示表 Volt-ammeter	—	1	—	1	—	1	—	1
HL2	启动信号灯 黄色 Start indicator light Yellow	AD16-22 380V	1	AD16-22 380V	1	AD16-22 380V	1	AD16-22 380V	1
HL3	运行信号灯 绿色 Operation indicator light - Green	AD16-22 380V	1	AD16-22 380V	1	AD16-22 380V	1	AD16-22 380V	1
SB1	启动按钮 绿色 Start bottom - Green	LA38-11 380V	1	LA38-11 380V	1	LA38-11 380V	1	LA38-11 380V	1
SB2	停止按钮 红色 Stop bottom - Red	LA38-11 380V	1	LA38-11 380V	1	LA38-11 380V	1	LA38-11 380V	1
整定延时参考值(S) Setting delay value		11		11		15		15	

元器件清单 Components List							
电气 符号 Electrical Symbols	元器件名称 Name	型号 Model	数量 Quantity	型号 Model	数量 Quantity	型号 Model	数量 Quantity
		QJX3-30		QJX3-37		QJX3-45	
QF	微型断路器 Mini circuit breaker	AON-125 3P/D100A	1	AON-125 3P/D125A	1	AON-125 3P/D125A	1
KM1	交流接触器 AC contactor	CJX2-5011 50A 380V	1	CJX2-6511 65A 380V	1	CJX2-9511 95A 380V	1
KM2	交流接触器 AC contactor	CJX2-5011 50A 380V	1	CJX2-6511 65A 380V	1	CJX2-9511 95A 380V	1
KM3	交流接触器 AC contactor	CJX2-4011 40A 380V	1	CJX2-5011 50A 380V	1	CJX2-6511 65A 380V	1
FM	电动机综合保护器 Motor Protector	JD-5/80 1-80A 380V	1	JD-5/80 1-80A 380V	1	JD-5/200 80-200A 380V	1
KT	时间继电器 Time relay	ST3P A-B 0-60s 380V	1	ST3P A-B 0-60s 380V	1	ST3P A-B 0-60s 380V	1
FU	熔断器(选用) Fuse protector (Optional)	RT18-32 6A	1	RT18-32 6A	1	RT18-32 6A	1
HL1	电流、电压指示表 Volt-ammeter	—	1	—	1	—	1
HL2	启动信号灯 黄色 Start indicator light Yellow	AD16-22 380V	1	AD16-22 380V	1	AD16-22 380V	1
HL3	运行信号灯 绿色 Operation indicator light - Green	AD16-22 380V	1	AD16-22 380V	1	AD16-22 380V	1
SB1	启动按钮 绿色 Start bottom - Green	LA38-11 380V	1	LA38-11 380V	1	LA38-11 380V	1
SB2	停止按钮 红色 Stop bottom - Red	LA38-11 380V	1	LA38-11 380V	1	LA38-11 380V	1
整定延时参考值(S) Setting delay value		15		20		20	

注：元器件清单可以根据客户需求定制

Note: Components could customized based on clients' requirement.

QJX3 星三角起动控制箱

5 外形尺寸 Outline and Installation Dimensions



型号 Model	A	B	C
QJX3-11	400	300	200
QJX3-15	400	300	200
QJX3-18.5	400	300	200
QJX3-22	600	400	200
QJX3-30	600	400	200
QJX3-37	600	400	200
QJX3-45	800	600	250

由于感性负载在启动电源的一瞬间，会产生反电动势电压，这种电压的峰值远远大于负载交流供电电器所能承受的电压值，很容易引起星三角起动箱的瞬时超载，影响星三角起动箱的使用寿命。

- 因此，所需要的星三角起动箱需要放大一档。
- 如15KW电动机，需要选用18.5KW的星三角起动箱。
- 18.5KW电动机，需要选用22KW的星三角起动箱。

The inductive load will generate a back-EMF voltage at the monment the power is turned on. The peak value of this voltage is far greater than the voltage that the load AC power supply can withstand, so it is easy to cause the instantaneous overload of the star-delta starter cabinet, which will affect the service life of the star-delta starter cabinet. Therefore, the required star-delta starter cabinet needs to be amplified by one gear. For example, a 15KW motor needs a 18.5KW star-delta starter cabinet, and a 18.5KW motor needs a 22KW star-delta starter cabinet.