# YCQR2 Soft Starter




## General

AC squirrel-cage type asynchronous electric motor is a popular electric apparatus. By applying intelligence, the apparatus completes stable load making capacity and reduces impact strength to electrical network; it can work with stable and reliable performance. YCQR2 Model soft starter completes Human-machine interface. It can be applied to a scope of 5.5~500KW in thermal power plant, hydraulic power plant, metallurgy, chemical industry, architecture , cement plant ,mining industry as well as environmental protection projects. It's the ideal replacer of Y- △ Starter, reactor starter, auto-transformer starter etc.

The advanced technology applied prevents the heavy starting current of AC electric motor, influence to voltage quality and power consumption in loop as well as the impact strength to electric apparatus.

Microprocessor is the core of the YCQR2 soft starter. It controls big power thyristor components, to limit starting current, voltage ramp start, soft stop. Technical parameters can be set up to different load. It also has over current, overload and out-of-phase protections. Output voltage of soft start is ascending as per setups, then electric motor torque finishes starting according to optimized speed-up curve, thyristor components breaks, and bypass AC contact starts.

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## Functions

1. Double Single-chip machine automatic digital control;
2. Parameters like starting torsion current, voltage, and time to be set according to different load, to obtain optimal torque control feature.
3. Smooth and gradual starting process, to reduce the impact strength of electric network, vibration and noise of apparatus, to lengthen lifetime of mechanical driver and to improve working environment.
4. Starting current is adjustable as per load, to reduce starting consumption and to make optimal torque with smallest current.
5. Soft stop function – make long lifetime of electric contacts, meet mechanical requirements under various occasions.
6. Over-current protection, overload protection and thermal protection, outof–phase protection.
7. Extrocontrol interface to facilitate multi-functions: digital delayed start, transient stop control input, start output of time delay relay, fault relay output.
8. No special requirements on the phase sequence to input power.
9. Free stop and soft stop, soft stop time is adjustable.
10. Complete digital control and extrocontrol
11. Standard 485 interface
12. Output 0-20MA analog current
13. Innovative structure, small volume, stable performance, easy installation and operation.
14. Harvard type single-chip machine has strong anti-interruption capacity to prevent the control system from severe electric interruption.

# YCQR2 Soft Starter

## Technical data

| Item No. | YCQR2 |
|---|---|
| Electric motor power(400v.h)/kw | 5.5-500KW |
| Rated working current Ie/A | 10-1200 |
| Rated working voltage / V | 380V±15% |
| Frequency /Hz | 50Hz |
| Continuous working current /A | 115% Ie |
| Rated control voltage/V | AC 220V-240V/50Hz |
| Ambient temperature /°C | 30°C/55°C |

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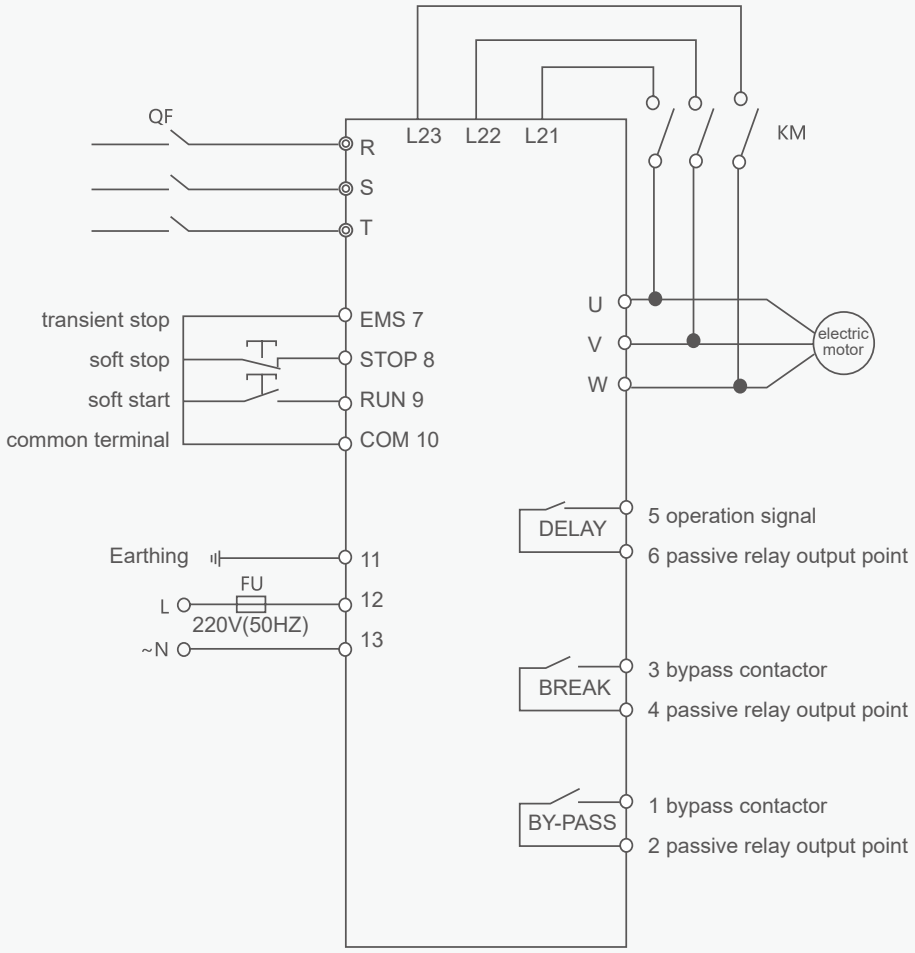
| Item | | Set Range | Factory Value | Illumination |
|---|---|---|---|---|
| Code | Name | | | |
| 0 | Start Voltage | 30-80% | 30% | Voltage mode effective |
| 1 | Rising Time | 0-60S | 10S | Voltage mode effective |
| 2 | Soft Stop Time | 0-60S | 2S | Stop freely when set as 0 |
| 3 | Start Delay | 0-240S | 0S | Two lines way effective |
| 4 | Limiting Start Current | 150-500% | 250% | Limiting current mode effective |
| 5 | Interlock Delay | 0-240S | 0S | |
| 6 | Transient Stop Set | 0-1 | 0 | 0:yes 1:no |
| 7 | Restart After Transient Stop | 0-1 | 0 | 0:yes 1:no |
| 8 | Control Mode | 0-1 | 1 | 0:limiting current 1:voltage |
| 9 | Control Way | 1-6 | 1 | 1:keyboard 2:outer control<br>3:keyboard+outer control<br>4:PC 5:PC+keyboard<br>6:PC+outer control |
| A | 0-20mA | 0-1 | 0 | 0:full scale(20mA)corresponding to 400%<br>1:full scale(20mA)corresponding to 130% |
| B | Display Mode | 0-132 | 0 | 0:by percent of rated voltage<br>XXX:actual rated power value |
| C | Local Address | 1-30 | 0 | For serial-port communication |
| D | Set Parameter Modification | 0-1 | 0 | 0:yes 1:no |
| E | Overload Multiple Set | 50-200% | 150% | |
| F | Out-of-phase Protection | 0-1 | 0 | 0:yes 1:no |
| EY | Modification Set Protection | The data should not be modified in this condition | | |
| -A | Start And Rising Condition | 1.displaying current value XXXA or percent of rate value.<br>2.Delay start time displays time EOTTT | | |
| -A | Operation Condition | | | |
| -A | Soft Stop Condition | | | |

Note:Values XO-9
Even if using the voltage mode,the limiting current is still effective,and its value is 400%.

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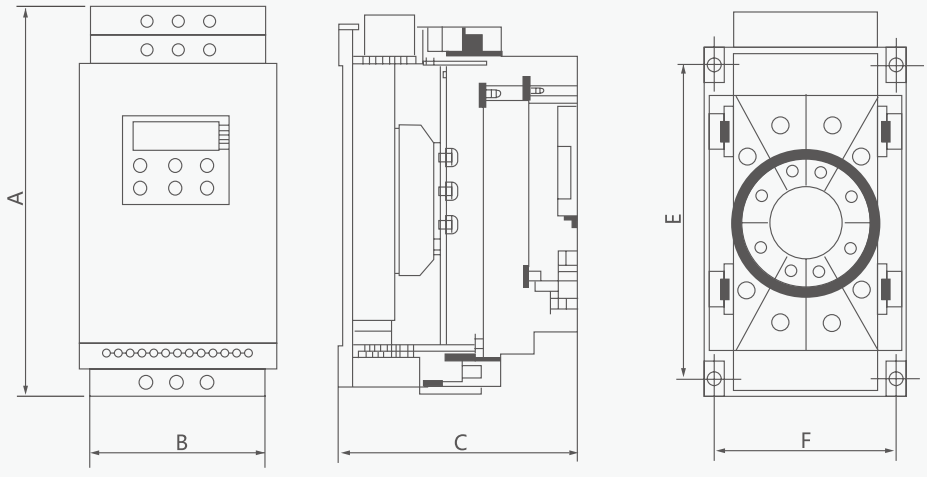


## Wiring diagram




## Overall and mounting dimensions(mm)

Plane Structure Picture And Size (see Picture 10.1and 10.2)
Plane Structure Picture Of Ycqr2 55kw Type



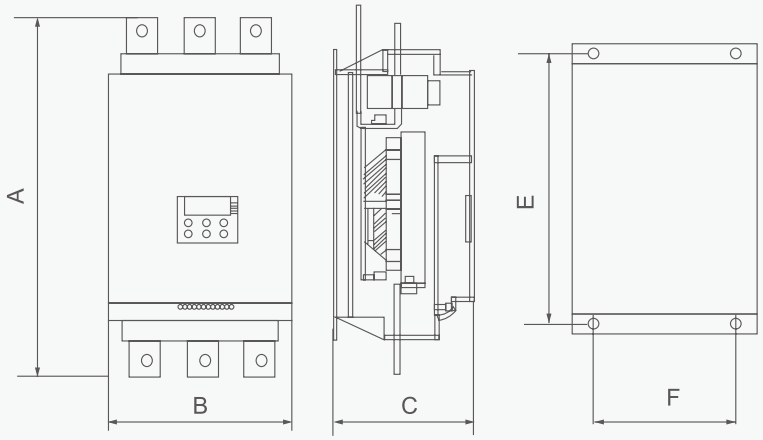
# YCQR2 Soft Starter

YCQ2R 55KW Type

| Model | Power (KW) | Rated Current (A) | Outline Size(mm) | | | Installing Size(mm) | | Installing Hole Dimension |
|---|---|---|---|---|---|---|---|---|
| | | | A | B | C | E | F | |
| YCQR2 | 5.5-22 | 10-40 | 265 | 154 | 165 | 219 | 140 | Φ6 |
| YCQR2 | 30 | 54 | 265 | 154 | 165 | 219 | 140 | Φ6 |
| YCQR2 | 37 | 68 | 265 | 154 | 165 | 219 | 140 | Φ6 |
| YCQR2 | 45 | 80 | 265 | 154 | 165 | 219 | 140 | Φ6 |
| YCQR2 | 55 | 100 | 265 | 154 | 165 | 219 | 140 | Φ6 |

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YCQR2 75-500KW Type




YCQR2 75-500KW Type

| Model | Power (KW) | Rated Current (A) | Outline Size(mm) | | | Installing Size(mm) | | Installing Hole Dimension |
|---|---|---|---|---|---|---|---|---|
| | | | A | B | C | E | F | |
| YCQR2 | 75 | 135 | 531 | 260 | 204 | 380 | 230 | Φ8 |
| YCQR2 | 90 | 160 | 531 | 260 | 204 | 380 | 230 | Φ8 |
| YCQR2 | 115 | 200 | 531 | 260 | 204 | 380 | 230 | Φ8 |
| YCQR2 | 132 | 250 | 531 | 260 | 204 | 380 | 230 | Φ8 |
| YCQR2 | 160 | 300 | 531 | 260 | 204 | 380 | 230 | Φ8 |
| YCQR2 | 200 | 360 | 564 | 290 | 204 | 260 | 260 | Φ8 |
| YCQR2 | 250 | 450 | 564 | 290 | 204 | 260 | 260 | Φ8 |
| YCQR2 | 320 | 560 | 564 | 290 | 204 | 260 | 260 | Φ8 |
| YCQR2 | 400 | 800 | 600 | 350 | 220 | 480 | 320 | Φ8 |
| YCQR2 | 500 | 1000 | 600 | 350 | 220 | 480 | 320 | Φ8 |