

- Internal Fuses on complete range 30 to 800A
- 100K KA Short Circuit Current (SCCR)
- Voltage Supply 480-600-690V
- OLED Display for easy Diagnostic & Configuration
- All Firing & Control Mode available
- Wi Fi and all popular Field Bus available
- APP for communication via Apple or Android
- Remote Service
- CE EMC and cUL approved

CD AUTOMATION

POWERED BY INNOVATION



Innovation in Power Control



www.cdautomation.com

Revo C Catalog 2018
Release n. 1

REVO C 1PH



SIZE SR9



SIZE SR15



SIZE S12

Technical Specification

- **Dimensions:** See size and dimensions page 6-7
- **Load type:** Normal Resistance, Infrared Short, Medium and Long, Transformer Primary and Silicon Carbide element
- **Inputs:** 4:20mA , 0:10V, SSR and ModBus as std and different Field Bus Listed in the Product Coding
- **Firing mode:** Half Cycle,Single Cycle,Burst Firing,Delayed Triggering, Phase Angle with or without Soft Start
- **Control Mode:** Voltage,Current and Power or V2 and I2 with additional Transfer to VxI
- **RS485 port. RTU Modbus Protocol** and other Field Bus listed in Product Coding
- **USB:** port integrated for configuration in safety mode (No Load and Auxiliary Voltage needed) Unit Powered Through USB
- **100 KA:** Short Circuit Current rating (SCCR) up to 600V
- **cUL and CE + EMC approved**
- **Dual Current Limit:** for peak and RMS value

Option

- See below the types of options and their combination for Code generation
- Energy Totalizer
- Data Logging
- WiFi
- HB Alarm to diagnostic partial or Total Load Failure and Thyristor Short Circuit

Tools

- A very easy and Powerful Configurator Software is available Free of Charge on www.cdautomation.com
- CD Automation APP is also available free of charge to communicate via Wi-Fi

| DUAL LIMIT | HB | WIFI | LOGGING | TOTALIZER | CODE | NOTES |
|------------|----|------|---------|-----------|------|-------|
| | | | | | 0 | |
| | | | | | 1 | |
| | | | | | 2 | |
| | | | | | 3 | |
| | | | | | 4 | |
| | | | | | 5 | |
| | | | | | 6 | |
| | | | | | 7 | |
| | | | | | 8 | |
| | | | | | 9 | |
| | | | | | A | |
| | | | | | B | |
| | | | | | C | |
| | | | | | D | |
| | | | | | E | |
| | | | | | F | |
| | | | | | G | |
| | | | | | H | |
| | | | | | I | |
| | | | | | J | |
| | | | | | K | |
| | | | | | L | |
| | | | | | M | |
| | | | | | N | |
| | | | | | O | |
| | | | | | P | |
| | | | | | Q | |
| | | | | | R | |
| | | | | | S | |
| | | | | | T | |
| | | | | | U | |
| | | | | | V | |

I LIMIT (CURRENT LIMIT) This option is used to keep the overcurrent inside set limit. It's necessary to drive primary transformers and cold resistance. It's dual limit for peak and RMS value.

HB Alarm for partial or total load failure and Short Circuit on SCR (relay output).

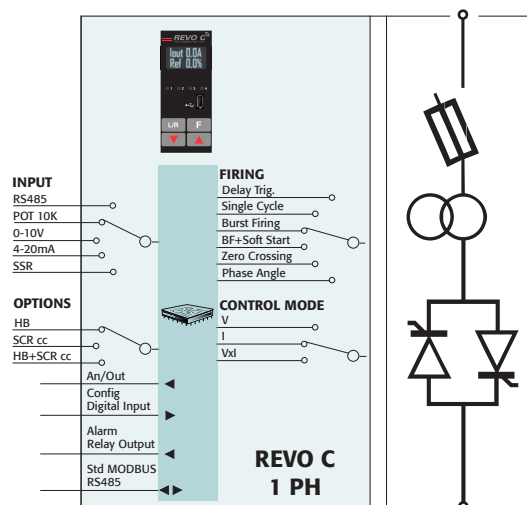
WiFi Option that allow to communicate with a smartphone.
From smartphone via a CD Automation App to read inside a cabinet the Current, Voltage, Power and Energy totalization and in addition is possible to charge parameter of Thyristor Unit without to open the cabinet door or to move on process and see the result of product quality changing parameters.

APP Free of charge download it from Google Play or Apple Store.

DATA LOGGER This feature is important to see the historical data of parameter like Current, Voltage and Power and can be useful to diagnostic a fault.

ENERGY TOTALIZER This function totalize the energy consumption of the load allowing the calculation of Heating Treatment.

CONNECTIVITY



ORDER CODE:

| | 1 | 2 | 3 | 4 | 5 | 6 | | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| REVO C 1PH | R | C | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| CURRENT | FUSES | 4 | 5 | 6 | |
|-------------|-----------------------------|------|---|------|---|
| description | description | code | | note | |
| 35A | Fuse + Fuse Holder Included | 0 | 3 | 5 | |
| 40A | Fuse + Fuse Holder Included | 0 | 4 | 0 | |
| 60A | Fixed Fuses Included | 0 | 6 | 0 | |
| 90A | Fixed Fuses Included | 0 | 9 | 0 | |
| 120A | Fixed Fuses Included | 1 | 2 | 0 | |
| 150A | Fixed Fuses Included | 1 | 5 | 0 | |
| 180A | Fixed Fuses Included | 1 | 8 | 0 | |
| 210A | Fixed Fuses Included | 2 | 1 | 0 | |
| 300A | Fixed Fuses Included | 3 | 0 | 0 | |
| 400A | Fixed Fuses Included | 4 | 0 | 0 | |
| 500A | Fixed Fuses Included | 5 | 0 | 0 | |
| 600A | Fixed Fuses Included | 6 | 0 | 0 | |
| 700A | Fixed Fuses Included | 7 | 0 | 0 | |
| 800A | Fixed Fuses Included | 8 | 0 | 0 | 2 |

| MAX VOLTAGE | | 7 | |
|-------------|------|---|------|
| description | code | | note |
| 480V | 4 | | |
| 600V | 6 | | |
| 690V | 7 | | 3 |

| VOLTAGE SUPPLY AUX | | 8 | |
|--------------------|------|---|------|
| description | code | | note |
| 100/120Vac | 1 | | |
| 200/208/230/240Vac | 2 | | |
| 277Vac | 3 | | |
| 380/415/480Vac | 5 | | |
| 600Vac | 6 | | |
| 690Vac | 7 | | |

| INPUT | | 9 | |
|-------------|------|---|------|
| description | code | | note |
| SSR | S | | |
| 0:20mA | B | | |
| 4:20mA | A | | |
| 0:10V | V | | |
| 10KPot | K | | |

| FIRING | START OPTION | 10 | |
|--------------------|---------------------------------|------|------|
| description | description | code | note |
| Single Cycle | No Soft Start | C | |
| | Linear Soft Starter | S | |
| Half Cycle | No Soft Start | H | |
| | Linear Soft Starter | L | |
| | Soft Start for short Infr. Lamp | I | |
| Burst Firing | No Soft Start | B | |
| | Linear Soft Starter | J | |
| Phase Angle | No Soft Start | P | |
| | Linear Soft Starter | E | |
| Delayed Triggering | No Soft Start | D | |
| | Linear Soft Starter | T | |
| Zero Crossing | No Soft Start | Z | |
| | Linear Soft Starter | R | |

| CONTROL MODE | | 11 | |
|----------------|------|----|------|
| description | code | | note |
| Open Loop | O | | |
| Voltage | U | | |
| Voltage Square | Q | | |
| Current | I | | |
| Current Square | A | | |
| Power Vxl | W | | |

| OPTION | | 12 | |
|-------------------------------------|------|----|------|
| description | code | | note |
| No Option | 0 | | |
| Option code see previous page table | ... | | |

| FAN VOLTAGE | | 13 | |
|------------------------------|------|----|------|
| description | code | | note |
| No Fan < 90A | 0 | | |
| Fan 110V ≥ 120A | 1 | | |
| Fan 220V ≥ 120A Std Version | 2 | | |
| Fan 24Vdc ≥ 120A Std Version | 3 | | |

| APPROVALS | | 14 | |
|--|------|----|------|
| description | code | | note |
| CE EMC For European Market | O | | |
| CUL us + CE EMC For American & European Market | L | | |

| LOAD TYPE | | 15 | |
|---|------|----|------|
| description | code | | note |
| 1 PH Normal Resistance | 0 | | |
| 1 PH IRSW Infrared Short Wave | 1 | | |
| 1 PH MoSi2 Heaters | 2 | | |
| 1 PH SiC Heaters | 3 | | |
| 1 PH Transformer Coupled with Normal Resistance | 4 | | |
| 1 PH Transformer Coupled with MoSi2 Heaters | 5 | | |
| 1 PH Transformer Coupled with SiC Resistance | 6 | | |
| 1 PH Transformer Coupled with UV Lamp | 7 | | |

| COMMUNICATION AND RETRANSMISSION | | 16 | |
|----------------------------------|-----------------------|------|------|
| description | description | code | note |
| N°1 Modbus RTU | No Retransmission | 0 | |
| | Retransmission 4:20mA | 1 | |
| | Retransmission 0:10V | 2 | |
| N°2 Modbus RTU | No Retransmission | 3 | |
| | Retransmission 4:20mA | 4 | |
| | Retransmission 0:10V | 5 | |
| N°1 Profibus DP + N°1 Modbus RTU | No Retransmission | 6 | |
| | Retransmission 4:20mA | 7 | |
| | Retransmission 0:10V | 8 | |
| N°1 Profinet DP + N°1 Modbus RTU | No Retransmission | 9 | |
| | Retransmission 4:20mA | A | |
| | Retransmission 0:10V | B | |
| N°1 Modbus TCP + N°1 Modbus RTU | No Retransmission | C | |
| | Retransmission 4:20mA | D | |
| | Retransmission 0:10V | E | |

Note (1): Fixed Fuses over 40A
Note (2): No cUL approved 800A
Note (3): Available on unit ≥60A

GENERAL FEATURES

Display Software

| | | |
|-----|-----------------------------|--|
| 0.1 | OLED display on front Unit | This display give better operator interface and delivers use-friendly intuitive messages |
| 0.2 | Diagnostic | Powerfull Diagnostic has been implemented and when a alarm occurs the OLED Display give the messages in clear words |
| 0.3 | Fully Software Configurable | REVO C is fully Software configurable |
| 0.4 | Layer based Firmware | This is an important Feature because allows to add application software or customer software without to debug the existing one |

Electrical Features

| | | |
|-----|---|---|
| 1.1 | Current rating | 30 to 800A for 1-2-3 Phase unit |
| 1.2 | Voltage | 480-600-690V 690V only available for unit ≥ 60 A |
| 1.3 | Integrate Fuse | This reduce labor and space and gives the possibility to use a part of fan cooling air to reduce the temperature of semiconductor fuses and reduce the mounting space inside the cabinet (see the comparison at page 9) |
| 1.4 | Quick and easy access to Fuses | When open the frontal door Fuses and Thyristors are on front |
| 1.5 | 100 KA Short Circuit Current rating (SCCR) up to 600V | Enable greater protection in case of Short Circuit |

Firing & Control Mode

| | | |
|-----|------------------------|---|
| 2.1 | Universal firing mode | Half Cycle, Single Cycle, Burst Firing, Delayed Triggering Phase Angle and Soft Start |
| 2.2 | Current Control | This feature is always available for both RMS and pick Control |
| 2.3 | Voltage Control | Normally used when Voltage Control Mode is selected |
| 2.4 | Power Control | Normally used when Power Control Mode is selected |
| 2.5 | Universal Input | The std analog inputs 4:20mA and 0:10V and SSR Configurable via Software |
| 2.6 | Universal Control Mode | REVO C can be configured for Current, Voltage Power feed back or open loop |
| 2.7 | External Feed Back | An external signal 0:10v can be the requested control mode |

Communication

| | | |
|-----|---------------------------------------|--|
| 3.1 | Wide range of communication protocols | Control board has been engineered to plug on it different Field Bus boards |
| 3.2 | Wi Fi | This is low cost option and we suggest to use it to make possible the Smart Phone support because you can have many functions like Alarm Overview, Configuration via Icon. Remote Service and read out for each REVO C inside the cabinet Voltage, Current and Power |
| 3.3 | Modbus RTU | Standard |

GENERAL FEATURES

| | |
|--|--|
| 3.4 Ethernet TCP | Option |
| 3.5 Profibus | Option |
| 3.6 Profinet | Option |
| 3.7 USB device on front unit for configuration | Standard easily and safely normally used to configure the REVO C. Eliminate the user having to work in a high voltage environment because the unit is powered through USB connection |

Extra Features

| | |
|--|---|
| 4.1 Integrated Data Logging | Storage: 16GB SD Memory Card with programmable Logging Intervals It's also available at extra price 40GB SD memory |
| 4.2 Energy Counter Totalizer | This is available as an option and can be useful to define the cost per hour of heating system |
| 4.3 Special Algorithm for Short Wave form IR Lamp | Using half cycle to minimize the flickering. In addition a special soft start curve. |
| 4.4 Remote service | This feature is available when Wi-Fi and Smart Phone are available. Use it and "You will never be alone," |
| 4.5 Automatic Selection of the configuration as a function of wiring and load type | This feature is a big help for operator because we give you a recipe suggestion based on wiring and type of load. The selection is done via Icon available on Smart Phone or on Configuration Software |
| 4.6 HB and SC Alarm | Alarm for Partial or Total Load Failure and Short Circuit on SCR with Electromechanical Relay output 1A at 30 Vdc or 0,5A at 125 Vac |
| 4.7 Heater Bakeout | Protect the Heaters on Start Up and eliminate labor and time to control wet heater |
| 4.8 High precision measurement (True RMS Value for V_L and V_{XL}) | $\leq 1\%$ |
| 4.9 Integrate Load Analyzer | This is an important Feature that can help the operator for troubleshooting problems. This is a Real Wave Form Load Monitoring |
| 4.10 Free configuration Software | A very easy and Powerful Configurator Software is available Free of Charge on www.cdautomation.com |

General Features and Approvals

| | |
|--|--|
| 5.1 Industry-leading and Serviceability | Generous sizing of Thyristors and Thermal Parts using high efficiency Heatsink |
| 5.2 Enable troubleshooting with helpful thermal system diagnostics | Temperature sensor is mounted inside the units and when overcurrent occurs or there is high temperature inside the cabinet an alarm message appears. If the Heat Sink temperature rises a second High limit alarm switches Off the Unit |
| 5.3 Fully compatible with REVO M and REVO CL series | This is an important Feature because allows to substitute old REVO with REVO C. The number of terminal blocks is the same to facilitate the substitution |
| 5.4 Approvals | CE-EMC and cUL 508 Listed for 1-2 Phase up to 700A and 500A for 3 Phase CE-EMC for 800A 1-2-3 Phase Unit |



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