



# REVO S-2PH

from 60A to 210A



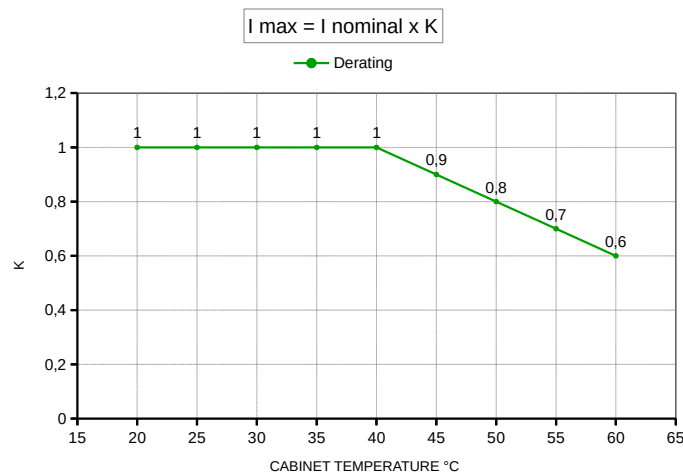
## GENERAL DESCRIPTION

- Revo S has been specifically designed to save space and labour
- These simple units can be connected with REVO PC to manage multizone system, this minimize your energy cost by controlling synchronization and power limit on each zone
- All circuit board, Fuses and Thristor can be inspected just opening the front door
- Input signal: SSR, Analog
- Zero Crossing, Burst Firing available at 4, 8 or 16 Cycles at 50% Power demand
- Electronic fully isolated from power with constant current drain on input
- Heater Break alarm option to diagnose partial or total load failure and Thyristor Short circuit
- Fixed Fuse are available as a standard
- Current transformer integrated (with Heather Break option)
- Special design for Heat sink with very high dissipation value
- Comply with EMC
- IP20 Protection

## TECHNICAL SPECIFICATION

|                          |  |              |                                  |
|--------------------------|--|--------------|----------------------------------|
| VOLTAGE POWER SUPPLY     | 24V minimum max 480V, 600V   |              |                                  |
| VOLTAGE FREQUENCY        | 50 or 60 Hz no setting needed from 47 to 70 Hz   |              |                                  |
| NOMINAL CURRENT          | 60A, 90A, 120A, 150A, 180A, 210A   |              |                                  |
| INPUT SIGNAL             | SSR for REVO S, No Fuse  | 5:30Vdc      | 18 mA Max (On ≥ 5Vdc Off ≤ 4Vdc) |
|                          | SSR for REVO S, Fuse + Fuse Holder   | 7:30Vdc      | 18 mA Max (On ≥ 7Vdc Off ≤ 6Vdc) |
|                          | SSR for REVO S, Fuse + Fuse Holder + HB  | 4:30Vdc      | 6 mA Max (On ≥ 4Vdc Off ≤ 1Vdc)  |
|                          | Voltage input  | 0:10Vdc      | impedance 15 K Ohm               |
|                          | Current input  | 0:20/4:20 mA | impedance 100 Ohm                |
| FIRING                   | Zero Crossing, Burst Firing with analog input signal only                                |              |                                  |
| AUXILIARY VOLTAGE SUPPLY | 12:24V dc/ac (max 70 mA) required only with HB Alarm or Analog Input Option              |              |                                  |
| HEATER BREAK ALARM       | Microprocessor based with automatic setting via Digital Input; Relay Output 0,5A at 125V |              |                                  |
| MOUNTING                 | Panel mounting by fixing holes   |              |                                  |
| OPERATING TEMPERATURE    | 40 °C without derating. Over this temperature see below derating curve                   |              |                                  |
| STORAGE TEMPERATURE      | -25 °C to 70 °C Max  |              |                                  |
| ALTITUDE                 | Over 1000 m of altitude reduce the nominal current of 2% for each 100m                   |              |                                  |
| HUMIDITY                 | From 5 to 95% without condense and ice   |              |                                  |

## CURRENT DERATING AS FUNCTION OF CABINET TEMPERATURE



## OPTION'S FEATURES AND SPECIAL DETAILS

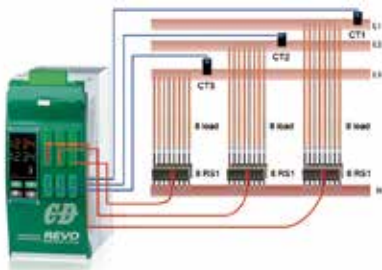
### HEATER BREAK ALARM (HB)



Few second to set and calibrate all the units

- Microprocessor based circuit
- Capacity to diagnose the failure of one Resistance over five in parallel
- Load failure alarm with LED indication on front unit
- Thyristor short circuit alarm with LED indication on front unit
- Alarm output with free voltage relay contact
- Alarm reset function and possibility to auto reset if the alarm disappear
- Built in Current transformer when heater Break option has been selected
- Self Setting via external command or push button on front unit
- Common setting command can be given to many units and in a matter of second, the tuning is done, also by a non expert operator
- It's also available, at low cost, an HB Alarm for Total Load Failure

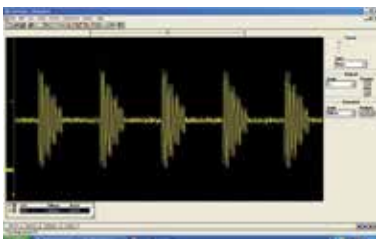
### HOW TO ADD POWER LOAD MANAGEMENT AND FEATURES TO YOUR SIMPLE UNITS



Application with 8, 16 or 24 single phase loads

Use REVO-PC and you can add these Features:

- Communication with different field bus
- Reading of current Voltage and Power
- Instantaneous power very close to average value, no pick power
- Power factor close to one no harmonics
- Prevents increase in energy supply tariffs imposed by your electricity supplier

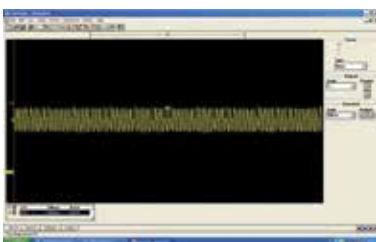


Without power control optimisation

#### SYNCHRONIZATION

On all controlled zones, REVO-PC Synchronization is automatic resulting in superior performance:

- Total current is equal to a sinusoidal wave form
- Power factor > 0,9
- Instantaneous current close to average value
- Cancellation of harmonics
- Flickering effect removed



With power control optimisation

#### SMART POWER LIMITATION

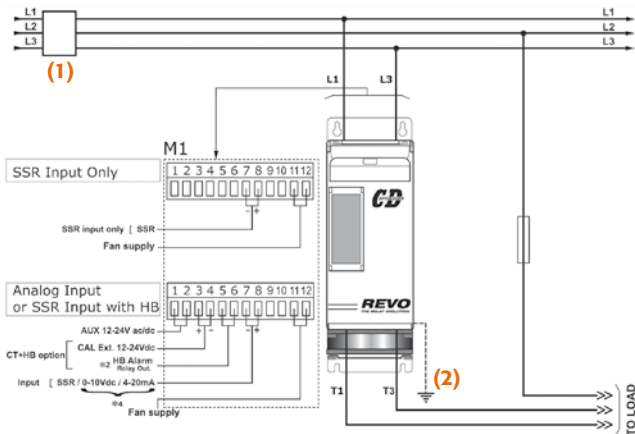
- Smart power limitation works together with synchronization. If this function is enabled, REVO-PC makes a live calculation of power at each period and generates the output values for the next period. If the calculated power is below the power limit value, the previous values remain with each channel using full power.
- If the power is above the power limit value, the setpoint of each channel is reduced proportionally to restrict power overshoot. This function significantly reduces disturbances on the main network compared to a full power system, preventing any increase in energy tariffs imposed by the electricity supplier.
- This function can be activated/deactivated and the limit value changed at any time.

### REVO PC ORDERING CODE

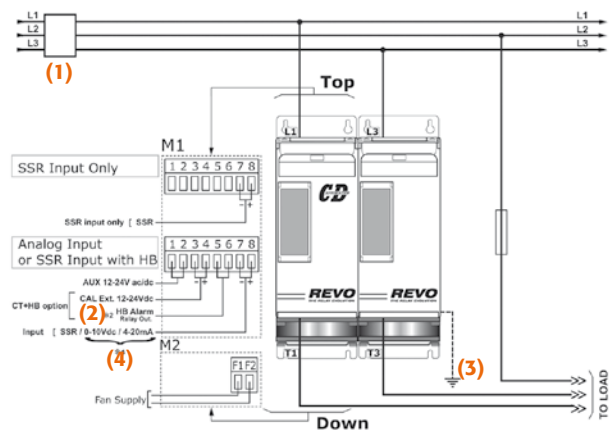
For ordering code and features see [REVO-PC BULLETIN](#)

## WIRING CONNECTION REVO S 2-PH from 60 to 210A

### CD3000S 2PH from 60 to 90A

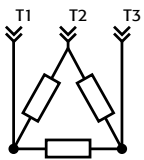


### CD3000S 2PH from 120 to 210A



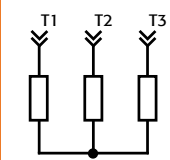
## NOTE:

### LOAD TYPE



**DELTA**  
resistive or  
infrared lamps  
long and  
medium waxes

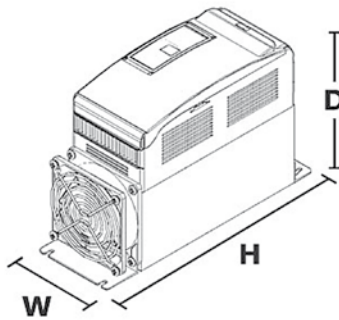
### LOAD TYPE



**STAR**  
without neutral  
resistive or  
infrared lamps  
long and  
medium waxes

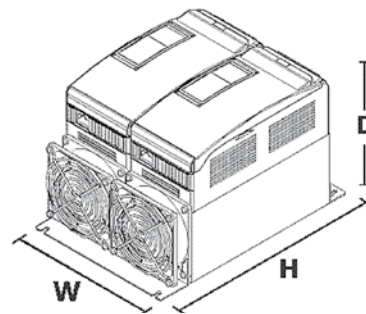
- (1) A suitable device must ensure that the unit can be electrically isolated from the supply, this allows the qualified people to work in safety. The user installation must be protected with electromagnetic circuit breaker or by fuse isolator. The semiconductor fuses are classified for UL as supplemental protection for semiconductor.
- (2) Only for the HB option See par. "Heater break Alarm and SCR short circuit"
- (3) The heat-sink must be connected to the earth.
- (4) Only for the Analog Input option, the analog input isn't isolated from Aux Supply a series connection between analogue inputs of the units is not possible.

## DIMENSION AND FIXING HOLES



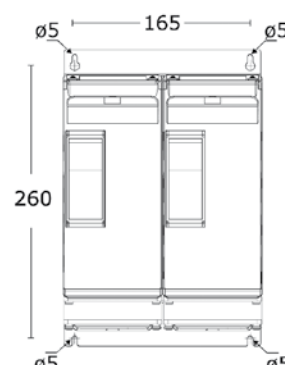
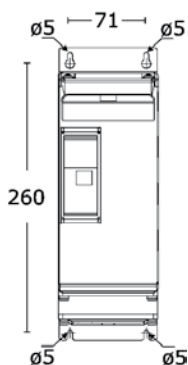
**REVO S 60 - 90A**

**SR15** W 93mm - H 273mm - D 170mm - Kg 3,6



**REVO S 120 - 210A**

**SR16** W 186mm - H 273mm - D 170mm - Kg 7



## OUTPUT FEATURES (power device)

| Current | Nominal voltage range (Ue) | Ripetitive peak reverse voltage (Uimp) |      | Latching current | Max peak one cycle | Leakage current | FUSE I <sup>2</sup> T value suggested A2s(at500V) | Frequency range | Power loss thyristor + fuse | Isolation voltage (Ui) |
|---------|----------------------------|--|------|------------------|--------------------|-----------------|---|-----------------|-----------------------------|------------------------|
| A       | V                          | 480V                                   | 600V | mAeff            | 10 m sec.          | (mAeff)         | tp=10msec   | Hz              | I=Inom W                    | Vac                    |
| 60A     | 24+600V                    | 1200                                   | 1600 | 600              | 1900               | 15              | 8680  | 47+70           | 205                         | 3000                   |
| 90A     | 24+600V                    | 1200                                   | 1600 | 600              | 1900               | 15              | 8680  | 47+70           | 290                         | 3000                   |
| 120A    | 24+600V                    | 1200                                   | 1600 | 600              | 1900               | 15              | 14280   | 47+70           | 398                         | 3000                   |
| 150A    | 24+600V                    | 1200                                   | 1600 | 300              | 5000               | 15              | 17500   | 47+70           | 409                         | 3000                   |
| 180A    | 24+600V                    | 1200                                   | 1600 | 300              | 5000               | 15              | 30800   | 47+70           | 469                         | 3000                   |
| 210A    | 24+600V                    | 1200                                   | 1600 | 300              | 5000               | 15              | 53900   | 47+70           | 598                         | 3000                   |

## FAN SPECIFICATION

| CURRENT A |     | FAN VOLTAGE SUPPLY | POWER CONSUMPTION |      | MAX AIR FLOW FOR EACH FAN |        | FAN DIMENSION | NUMBER OF FAN FOR UNITS |
|-----------|-----|--------------------|-------------------|------|---------------------------|--------|---------------|-------------------------|
| from      | to  | V                  | watt for each fan |      | m3/min                    | m3/min | mm            |                         |
|           |     |                    | 50Hz              | 60Hz | 50Hz                      | 60Hz   |               |                         |
| 60        | 90  | 110 Opt.           | 14                | 11   | 0,93                      | 1,13   | 92X92         | 1                       |
| 60        | 90  | 230 Std.           | 16                | 14   | 0,55                      | 0,7    | 92X92         | 1                       |
| 120       | 210 | 110 Opt.           | 14                | 11   | 0,93                      | 1,13   | 92X92         | 2                       |
| 120       | 210 | 230 Std.           | 16                | 14   | 0,55                      | 0,7    | 92X92         | 2                       |

## REVO S 2PH 60-210A

|   | 1        | 2        | 3        | 4        | 5        | 6        | 7        | 8        | 9        | 10        | 11   | 12 | 13 | 14 | 15 | 16        |           |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|------|----|----|----|----|-----------|-----------|
| <b>ORDERING CODE</b>                          | <b>R</b> | <b>S</b> | <b>2</b> | -        | -        | -        | -        | -        | -        | -         | -    | -  | -  | -  | -  | -         |           |
| <b>CURRENT</b>                                |          |          |          | <b>4</b> | <b>5</b> | <b>6</b> |          |          |          |           |      |    |    |    |    |           |           |
| description                                   |          |          |          | code     | note     |          |          |          |          |           |      |    |    |    |    |           |           |
| 60A   |          |          |          | 0        | 6        | 0        |          |          |          |           |      |    |    |    |    |           |           |
| 90A   |          |          |          | 0        | 9        | 0        |          |          |          |           |      |    |    |    |    |           |           |
| 120A  |          |          |          | 1        | 2        | 0        |          |          |          |           |      |    |    |    |    |           |           |
| 150A  |          |          |          | 1        | 5        | 0        |          |          |          |           |      |    |    |    |    |           |           |
| 180A  |          |          |          | 1        | 8        | 0        |          |          |          |           |      |    |    |    |    |           |           |
| 210A  |          |          |          | 2        | 1        | 0        |          |          |          |           |      |    |    |    |    |           |           |
| <b>MAX VOLTAGE</b>                            |          |          |          |          |          |          | <b>7</b> |          |          |           |      |    |    |    |    |           |           |
| description                                   |          |          |          |          |          |          | code     | note     |          |           |      |    |    |    |    |           |           |
| 480V  |          |          |          |          |          |          | 4        |          |          |           |      |    |    |    |    |           |           |
| 600V  |          |          |          |          |          |          | 6        |          |          |           |      |    |    |    |    |           |           |
| <b>VOLTAGE SUPPLY AUX.</b>                    |          |          |          |          |          |          |          | <b>8</b> |          |           |      |    |    |    |    |           |           |
| description                                   |          |          |          |          |          |          |          | code     | note     |           |      |    |    |    |    |           |           |
| 90:130V                                       |          |          |          |          |          |          |          | 1        | 1        |           |      |    |    |    |    |           |           |
| 170:265V                                      |          |          |          |          |          |          |          | 2        | 1        |           |      |    |    |    |    |           |           |
| 230:345V                                      |          |          |          |          |          |          |          | 3        | 1        |           |      |    |    |    |    |           |           |
| 300:530V                                      |          |          |          |          |          |          |          | 5        | 1        |           |      |    |    |    |    |           |           |
| 510:690V                                      |          |          |          |          |          |          |          | 6        | 1        |           |      |    |    |    |    |           |           |
| 600:760V                                      |          |          |          |          |          |          |          | 7        | 1        |           |      |    |    |    |    |           |           |
| <b>INPUT</b>                                  |          |          |          |          |          |          |          |          | <b>9</b> |           |      |    |    |    |    |           |           |
| description                                   |          |          |          |          |          |          |          |          | code     | note      |      |    |    |    |    |           |           |
| SSR   |          |          |          |          |          |          |          |          | S        |           |      |    |    |    |    |           |           |
| 0:10V dc                                      |          |          |          |          |          |          |          |          | V        |           |      |    |    |    |    |           |           |
| 4:20mA  |          |          |          |          |          |          |          |          | A        |           |      |    |    |    |    |           |           |
| <b>FIRING</b>                                 |          |          |          |          |          |          |          |          |          | <b>10</b> |      |    |    |    |    |           |           |
| description                                   |          |          |          |          |          |          |          |          |          | code      | note |    |    |    |    |           |           |
| ZC Zero Crossing                              |          |          |          |          |          |          |          |          |          | Z         |      |    |    |    |    |           |           |
| Burst Firing 4 Cycles On at 50% Power Demand  |          |          |          |          |          |          |          |          |          | 4         | 2    |    |    |    |    |           |           |
| Burst Firing 8 Cycles On at 50% Power Demand  |          |          |          |          |          |          |          |          |          | 8         | 2    |    |    |    |    |           |           |
| Burst Firing 16 Cycles On at 50% Power Demand |          |          |          |          |          |          |          |          |          | 6         | 2    |    |    |    |    |           |           |
| <b>CONTROL MODE</b>                           |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    | <b>11</b> |           |
| description                                   |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    | code      |           |
| Open Loop                                     |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    | 0         |           |
| <b>FUSES &amp; OPTION</b>                     |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | <b>12</b> |
| description                                   |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | code      |
| Fixed Fuses Std                               |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | F         |
| Fixed Fuses Std + CT                          |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | Y         |
| Fixed Fuses Std + CT + HB                     |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | H         |
| <b>FAN VOLTAGE</b>                            |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | <b>13</b> |
| description                                   |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | code      |
| Fan 110V from 60:210A                         |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 1         |
| Fan 220V from 60:210A                         |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 2         |
| <b>APPROVALS</b>                              |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | <b>14</b> |
| description                                   |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | code      |
| CE EMC  |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 0         |
| <b>MANUAL</b>                                 |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | <b>15</b> |
| description                                   |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | code      |
| None  |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 0         |
| Italian                                       |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 1         |
| English                                       |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 2         |
| German  |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 3         |
| French  |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 4         |
| <b>VERSION</b>                                |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | <b>16</b> |
| description                                   |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | code      |
| Std unit                                      |          |          |          |          |          |          |          |          |          |           |      |    |    |    |    |           | 1         |

Note (1) Load voltage must be included in selected auxiliary voltage range

Note (2) Available only with Analog input