REVO S-3PH from 60A to 210A

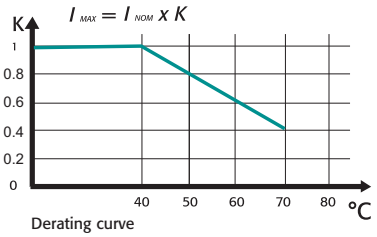
Innovative 3 Phase Thyristor Unit

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
- Integrated fuse + fuse holder is necessary to have a complete power control zone including current transformer and optional circuit board
- Flat Cable Wiring System (option) to connect in plug in mode many Revo S when HB alarm or analog input are used
- Input signal: SSR, Analog as an option
- Zero Crossing, Burst Firing available at 4, 8 or 16 Cycles at 50% of 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
- Fuse and Fuse holder available as an option
- Current transformer integrated (with Heather Break option)
- Special design for Heat sink with very high dissipation value
- Comply with EMC, cUL (pending)
- DIN RAIL side by side mounting
- IP20 Protection

TECHNICAL SPECIFICATION

Voltage power supply	24V minimum up to 480V, 600V On request		
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	18mA Max (On ≥ 5Vdc Off ≤ 4Vdc);
	SSR for REVO S, Fuse + Fuse Holder	7:30Vdc	18mA Max (On ≥ 7Vdc Off ≤ 6Vdc);
	SSR for REVO S, Fuse + Fuse Holder,+ HB	4:30Vdc	6mA Max (On ≥ 4Vdc Off ≤ 1Vdc);
	Voltage input	0:10Vdc	impedance 15 K ohm;
	Current input	0:20/4:20mA	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 110V		
Mounting	DIN RAIL or panel mounting		
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		



Derating curve

USER'S MANUAL
Rev. 04/2010_version 00001

OPTION'S FEATURES AND SPECIAL DETAILS

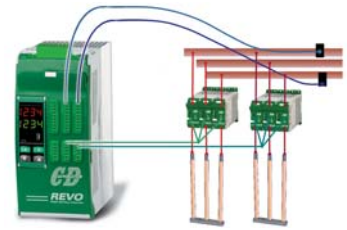
HEATER BREAK ALARM (HB)

ON FRONT CABINET

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 heather Break option has been selected
- Self Setting via external command or push button on front unit
- Commom setting command can be given to many units and in a matter of second, the tuning is done, also by a non expert operator

HOW TO ADD POWER LOAD MANAGMENT AND FEATURES TO YOUR SIMPLE UNITS



APPLICATION WITH 8, 16 OR 24 THREE-PHASE LOADS

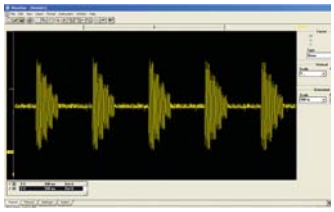
Use REVO-PC and you can add these Features

- Communication with different field bus
- Reading of current Voltage and Power
- Istantaneus 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

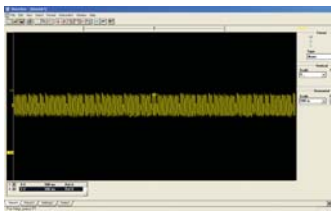
Synchronization

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.



WITHOUT POWER CONTROL OPTIMISATION



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.

ORDERING CODE REVO-PC

	1	2	3	4	5		6	7	8	9	10	11	12	13	14	15	16
REVO-PC	R	P	C	_	_	-	_	_	_	0	0	0	0	0	0	0	0

4,5 Channels

Description code	Numeric code
8 Channels	0 8
16 Channels	1 6
24 Channels	2 4

6 Current Sensor

Description code	Numeric code
N. 1 CS 200 Amps	1
N. 2 CS 200 Amps	2
N. 3 CS 200 Amps	3
N. 1 CS 400 Amps	4
N. 2 CS 400 Amps	5
N. 3 CS 400 Amps	6
N. 1 CS 600 Amps	7
N. 2 CS 600 Amps	8
N. 3 CS 600 Amps	9

7 Communication

Description code	Numeric code
Ethernet	1
ModBus Slave	2
ModBus Master	3
Profibus	4
Profinet	5
CANopen	6
EtherCAT	7

8 Transformer

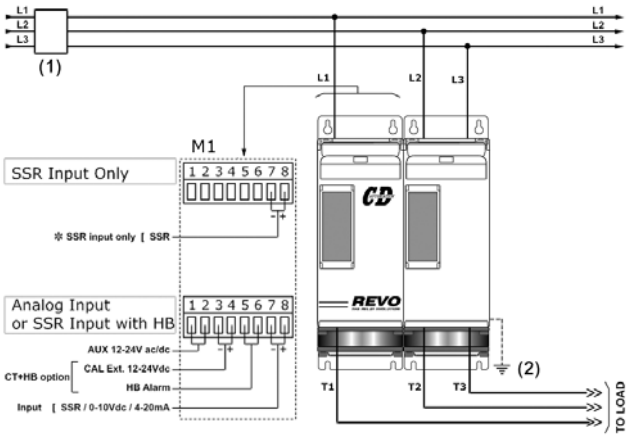
Description code	Numeric code
Transformer 24V	1

APPLICATIONS AND FOCUS ON:

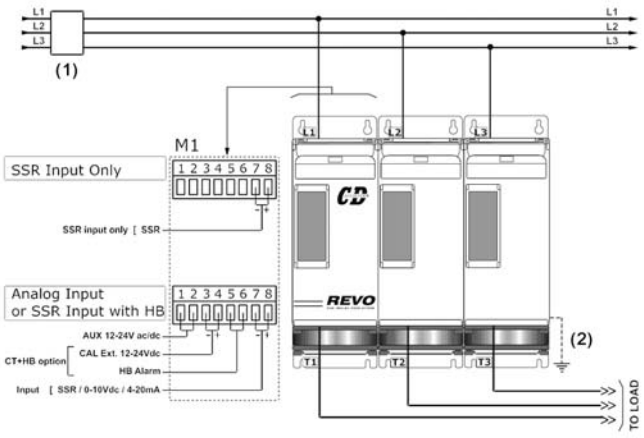
- Infrared lamp.
- Autoclaves.
- Fournaces.
- Chemical
- Glass Industry
- Extrusion line.
- Dryers
- Climatic chambers
- Pharmaceutical

Wiring connection REVO S 3PH from 60 to 210A

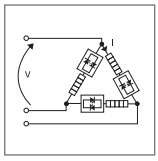
REVO S 3PH from 60 to 90A



REVO S 3PH from 120 to 210A

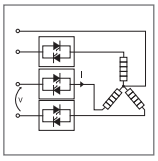


LOAD TYPE



OPEN DELTA
Resistive or
Infrared Lamps
Long and
medium waves

LOAD TYPE



STAR with neutral
Resistive or
Infrared Lamps
Long and
medium waves

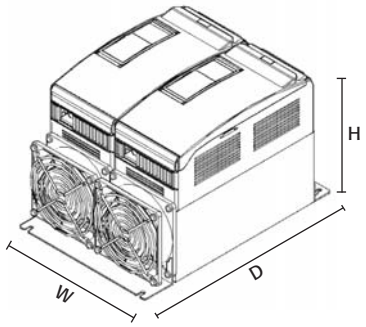
NOTE

(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 protecting by electromagnetic circuit breaker or by fuse isolator. The semiconductor fuses are classified for UL as supplementar protection for semiconductor.

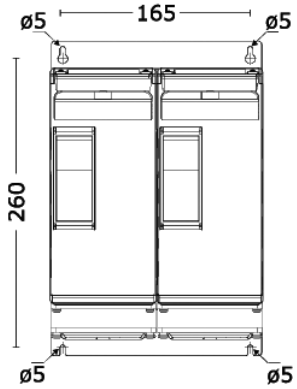
(2) • The heat-sink must be connected to the earth.

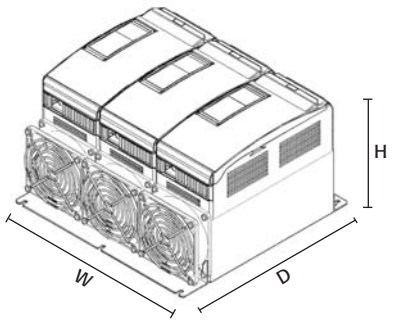
DIMENSION AND FIXING HOLES



SR16 W 186 mm. - H 273 mm. - D 170 mm. - kg. 7

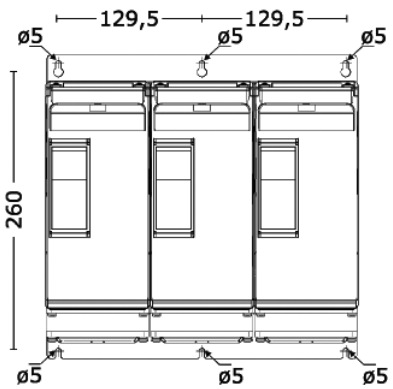
60A - 90A





SR17 W 279 mm. - H 273 mm. - D 170 mm. - kg. 10

120A÷210A



ORDERING CODES REVOS 3PH

Current A	Voltage range (V)	Ripetitive peak reverse voltage (480V)	(600V)	Latching current (mAeff)	Max peak one cycle (10msec.)	Leakage current (mAeff)	I2T value for fusing tp=10msec.	Frequency range (Hz)	Power loss I=Inom (W)	Isolation Voltage Vac
60A	24÷600V	1200	1600	450	100	15	4750	47÷70	195	2500
90A	24÷600V	1200	1600	450	2000	15	19100	47÷70	251	2500
120A	24÷600V	1200	1600	450	1540	15	11300	47÷70	414	2500
150A	24÷600V	1200	1600	450	2000	15	19100	47÷70	486	2500
180A	24÷600V	1200	1600	300	4800	15	108000	47÷70	534	2500
210A	24÷600V	1200	1600	300	5250	15	128000	47÷70	606	2500

Fan Specification	
Supply: 230V Standard	Input Power 16W
Supply: 115V Option	Input Power 14W

ORDERING CODES REVOS 3PH

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

4, 5, 6 Current

Description code	Numeric code
60A	0 6 0
90A	0 9 0
120A	1 2 0
150A	1 5 0
180A	1 8 0
210A	2 1 0

7 Max Voltage

Description code	Numeric code
480V	4
600V	6

8 Aux. Voltage supply

Description code	Numeric code
No Aux. Voltage, without HB and/or without Analog Input	0
12:24V ac-dc 70mA, with HB and/or Analog Input	4

9 Input

Description code	Numeric code
SSR	S
0:10V dc	V
4:20mA	A

10 Firing

Description code	Numeric code
Zero Crossing ZC	Z
Burst Firing 4 Cycles On at 50% Power Demand	4 (1)
Burst Firing 8 Cycles On at 50% Power Demand	8 (1)
Burst Firing 16 Cycles On at 50% Power Demand	6 (1)

11 Control Mode

Description code	Numeric code
Open Loop	0

12 Fuse & Option

Description code	Numeric code
Fixed Fuses IF	F
Fixed Fuses +CT	Y
Fixed Fuses +CT +HB	H

13 Fan Voltage

Description code	Numeric code
Fan 110V	1
Fan 220V Std Version	2

LEGEND
IF = Internal Fixed Fuse
CT = Current Transformer
HB = Heater Break Alarm

Note (1): Available only with Analog input

14 Approvals

Description code	Numeric code
CE EMC For European Market	0
cUL For American Market, pending	L

15 Manual

Description code	Numeric code
None	0
Italian Manual	1
English Manual	2
German Manual	3
French Manual	4

16 Version

Description code	Numeric code
Std with fixed Fuses	1