

# REVO PN

POWER NETWORK

- Multi Channel Power Control
- Suitable to comm. with PLC & Multiloop
- Dedicated to solve applications
- Space & wiring reduction
- Most popular Field Bus available

CD AUTOMATION

POWERED BY INNOVATION



## Multi-Channel SCR Power Controller

Suitable to control Electric Heaters  
and IR Lamps in Industrial Heating Systems



[www.cdautomation.com](http://www.cdautomation.com)  
Revo PN Catalog 2018

Release n.1

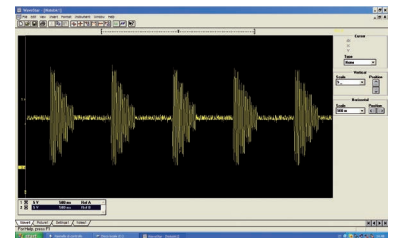
# HAVE YOU CONSIDERED HOW POWER PEAKS COULD BE A PROBLEM TO YOUR BUSINESS?

The REVO PN unit is designed to handle applications with multiple zones. This enhanced unit, thanks to a particular algorithm, minimizes your energy costs through the synchronization and the power limit for each zone. Revo PN keeps your instantaneous power within the limits of your electricity supply contract.



## REVO PN POWER NETWORK

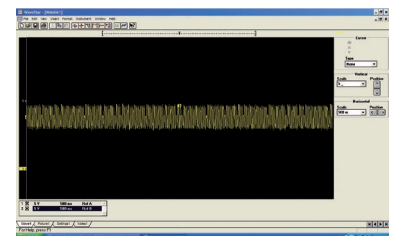
Created specifically for industrial multi-zone applications, REVO PN can be configured to control between 4 and 24 channels/zones. Typically, each zone is sized for 25A but by using the front panel connector, loads of up to 210A can be connected.



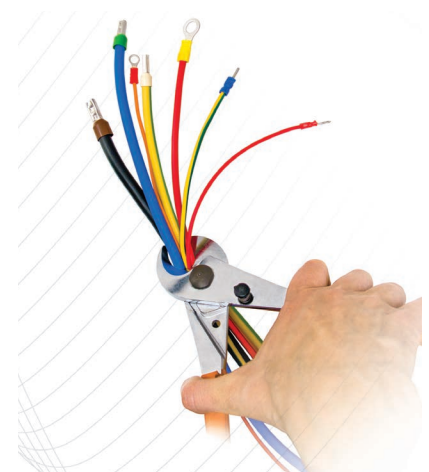
WITHOUT POWER CONTROL OPTIMISATION

## IMPORTANT POWER CONTROL FUNCTIONALITY IS OFFERED BY REVO PN INCLUDING:

- Elimination of power overshoot
- Power factor maintained close to 1
- Stay connected with the most popular Field Bus protocols
- Eliminate use of PLC output modules by using comms for Power to CPU connections
- Alarm notification per zone of heater break and thyristor short circuit
- Product footprint for 24 zone package 60% less than using standard thyristor stacks
- Dramatic savings with less wiring & smaller cabinet enclosures
- REVO PN's considered design not only helps you save start-up costs but ensures you keep on saving money throughout the products lifetime.



WITH POWER CONTROL OPTIMISATION



# REVO PN FAMILY



4 - 8 ONE PHASE CHANNEL



8 - 16 ONE PHASE CHANNEL



12 - 24 THREE PHASE CHANNEL  
20 - 24 ONE PHASE CHANNEL

## EACH ZONE INCLUDE:

- Thyristor Units with high I<sup>2</sup>T
- 480V Max Voltage
- Integrated Extra Rapid fuse
- Communication
- Synchronizing Circuit
- Digital Input and Relay Output



# DRAMATIC REDUCTION IN CABLE WIRING

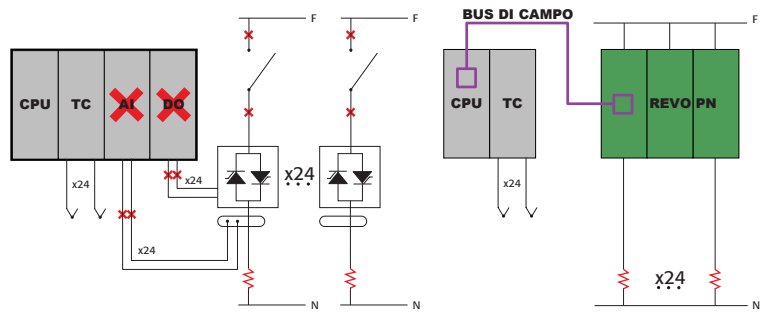
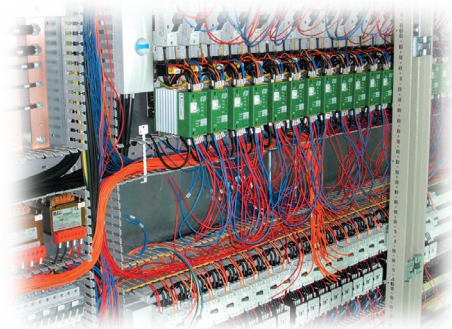
COMPARE THE NEW **REVO PN** TO A **TRADITIONAL PLC SYSTEM** AND YOU SAVE:

- 6 wires for each zone.
- Each wire takes 11 minutes (see diagram shown).
- For each zone you save 6 wires x 11 minutes = 66 minutes in total.

**TOTAL TIME SAVED OF 26,4 HOURS FOR 24 CHANNEL!**

- SO HOW MANY ZONES/LOOPS
- DO YOU SELL IN ONE YEAR?
- MAKE A CALCULATION OF WHAT YOU CAN SAVE.
- AND YOU HAVE ONLY ONE DECISION TO MAKE.

**WHY 11 MIN. FOR EACH WIRE?**  
 Schematics reading and understanding,  
 distances and path measuring.  
 Wire cutting - Wire stripping - Wire labeling  
 Crimping the lug with the copper  
 Terminal block wiring

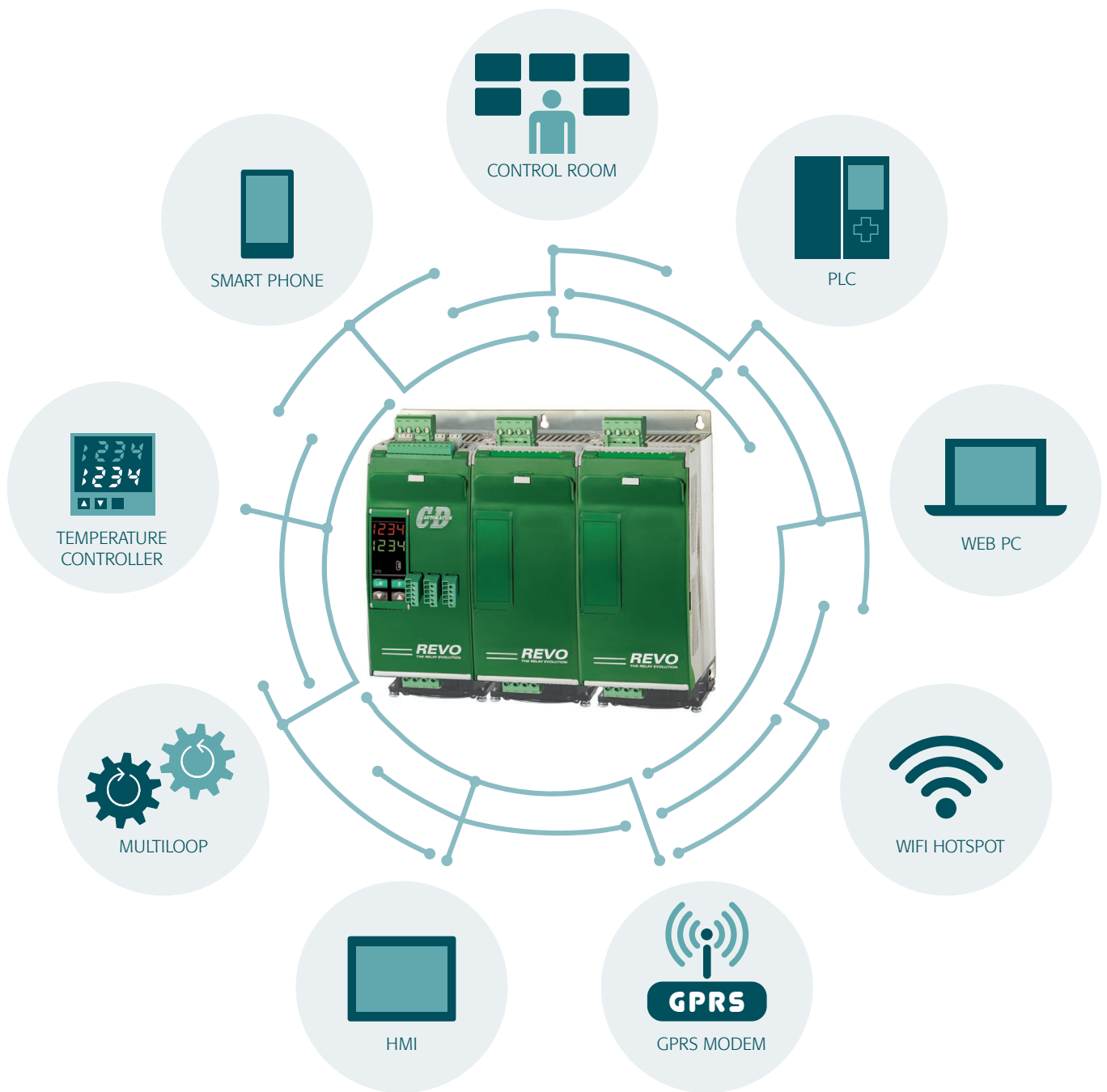


**TRADITIONAL SYSTEM**

**REVO PN SYSTEM**



# CONNECTIVITY AND CONFIGURATION



READ	WRITE
Set Point	Set Point
Alarm	One by one Configuration Parameters
Voltage	
Power	
Current	
Heater Break Alarm	
SCR Short Circuit Alarm	

# INFRARED OVEN AND THERMOFORMING

## INFRARED LAMPS WITH MEDIUM AND SHORT WAVE FORM

REVO PN is the best solution to control all types of infrared lamps. The robust junction with high I<sup>2</sup>t allows it to drive short-wave IR lamps.

There are several types of soft start, which cancels the phenomenon of flickering.

The synchronization makes the power factor close to one.

Power Network voltage fluctuations are compensated instantly via the feedback in the unit.



## REVO PN'S COMPACT DESIGN RESULTS IN MULTIPLE UNITS IN SMALL FOOTPRINT SIZE

In the control panel shown on the right, a 800x2000 mm layout contains 168 zones of 25A.

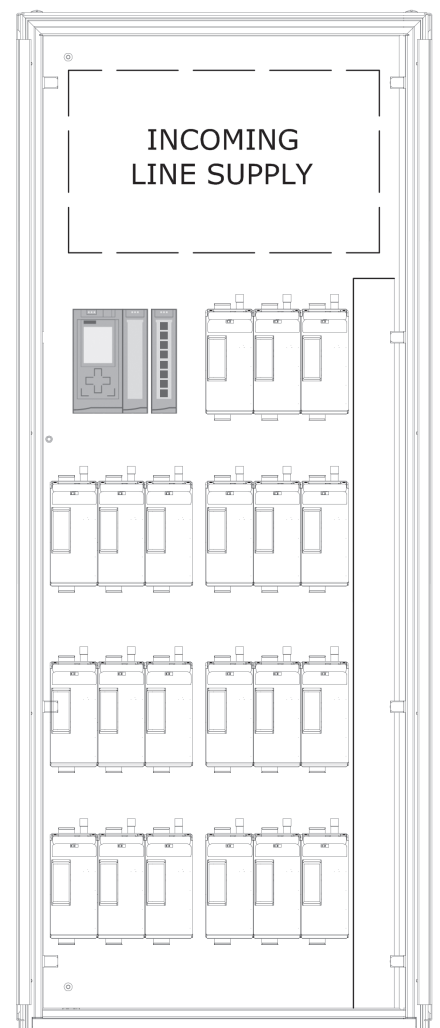
The units can be connected via communication to a PLC or to a multi loop temperature controller.

The connection to ProfiNet<sup>®</sup> can be done via switches or chains by using the two RJ 45 ports.

The main components of the power part are already included within each module (Fuse, Thyristor and Current Transformer).

You will only have to wrap the input wires for input and output for each heating element.

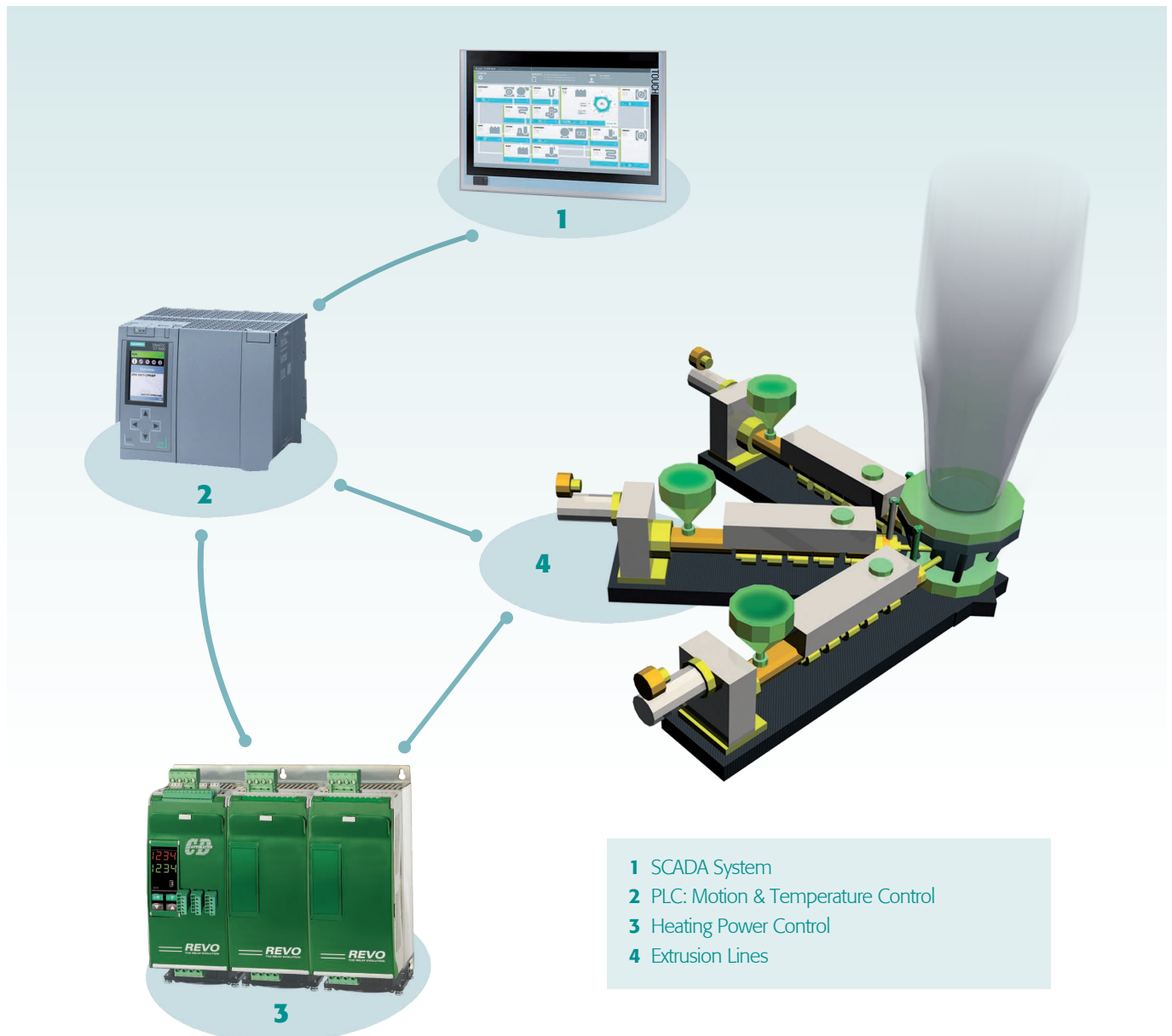
Communication will provide the main diagnostics on load, scr and fuses.



# PLASTIC EXTRUSION MACHINE

## AUTOMATION SOLUTION FOR EXTRUSION LINES

- Scalable power management, single extruder or full line.
- Modules of 12 or 24 zones already divided into three phases or one phase from 4 to 24 zones.
- Cyclic reading and writing of process variables.
- Short circuit SCR and load brake diagnostics.
- Reduced power consumption due to power grid fluctuations through live control.
- Maintains instantaneous power in the contractual limits with a power factor close to one.
- Strong bulk reduction and cabling for co-extrusion systems that can pass 100 zones.



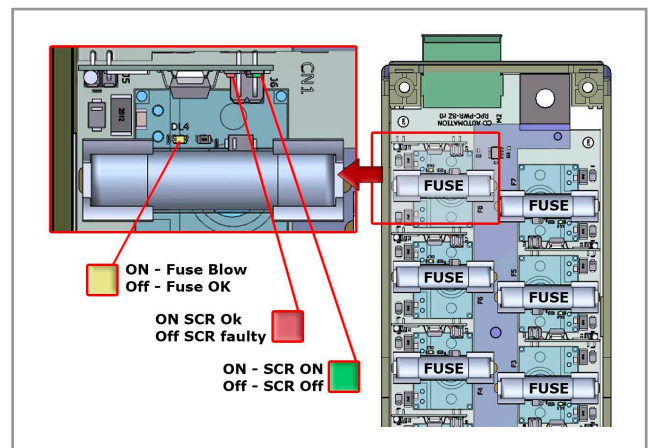
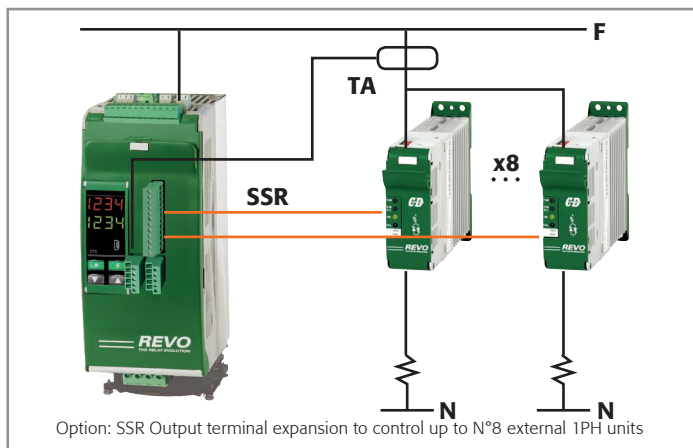
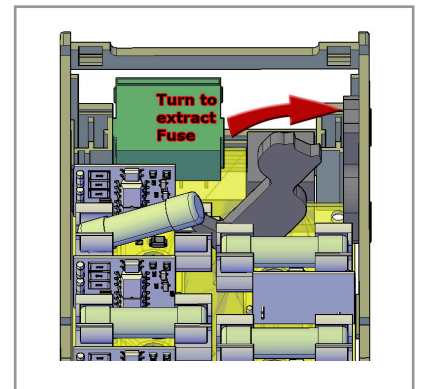
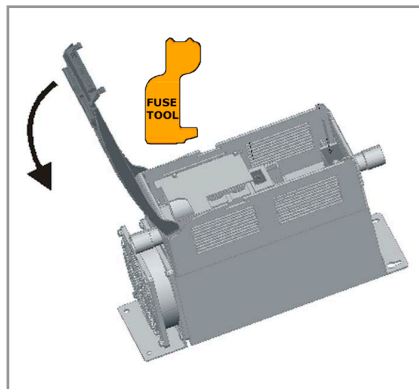
# GENERAL FEATURES

GENERAL FEATURES	
Cover and Socket material:	PolymericV2
Utilization Category	AC-51 AC-55b
IP Code	20
Method of Connecting	See pages 10/11
Delay switch ON/OFF time:	1/2 Period Max

INPUT FEATURES	
Logic input SSR	7 ÷ 30Vdc 9mA Max (ON ≥7Vdc OFF < 6Vdc)
L1 - L2 - L3 Power Input	370 - 480V

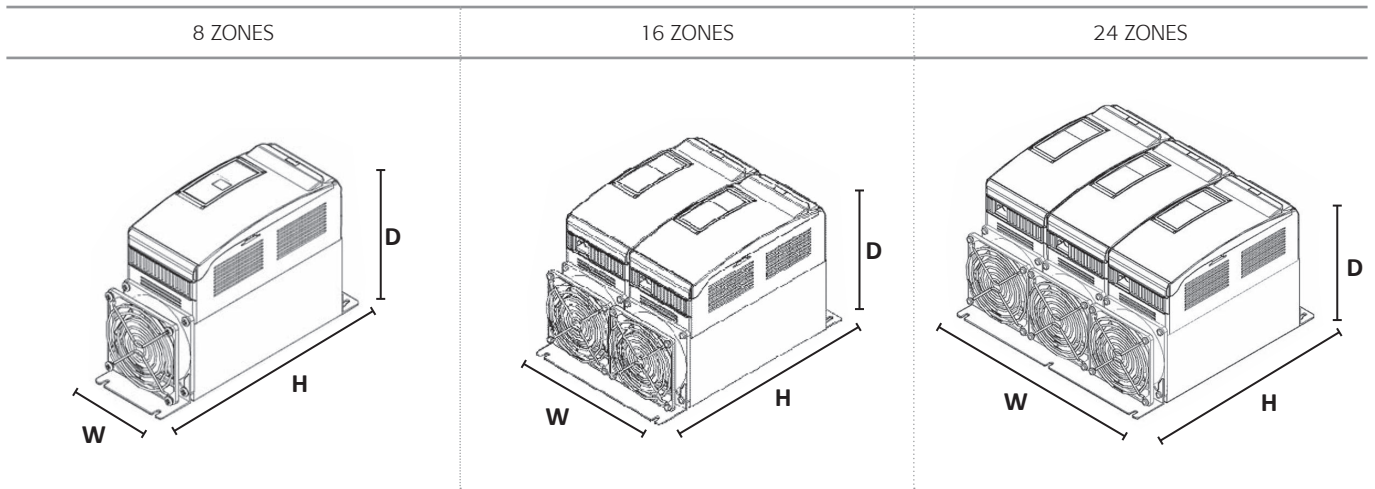
OUTPUT FEATURES (power device):	
Nominal current in continuous service	Max 25A for each load
Max peak current (10ms)	700A
Nominal Voltage range Ue	24 - 600V
Repetitive peak reverse voltage	1200V (480V) 1600V (600V)
Latching current	250mA
Leakage current	15mA eff
FUSE I <sup>2</sup> T value suggested at 500Vac tp=10msec	1260 A <sup>2</sup> s
Frequency range	47 - 70Hz
Total Power loss for 24 zone (I=Inom)	350W
Isolation Voltage Ui	2500Vac
N° 8 out SSR + CT input	Option T digit 16 on ording code

## EASY MAINTENANCE EASY FUSE REPLACEMENT



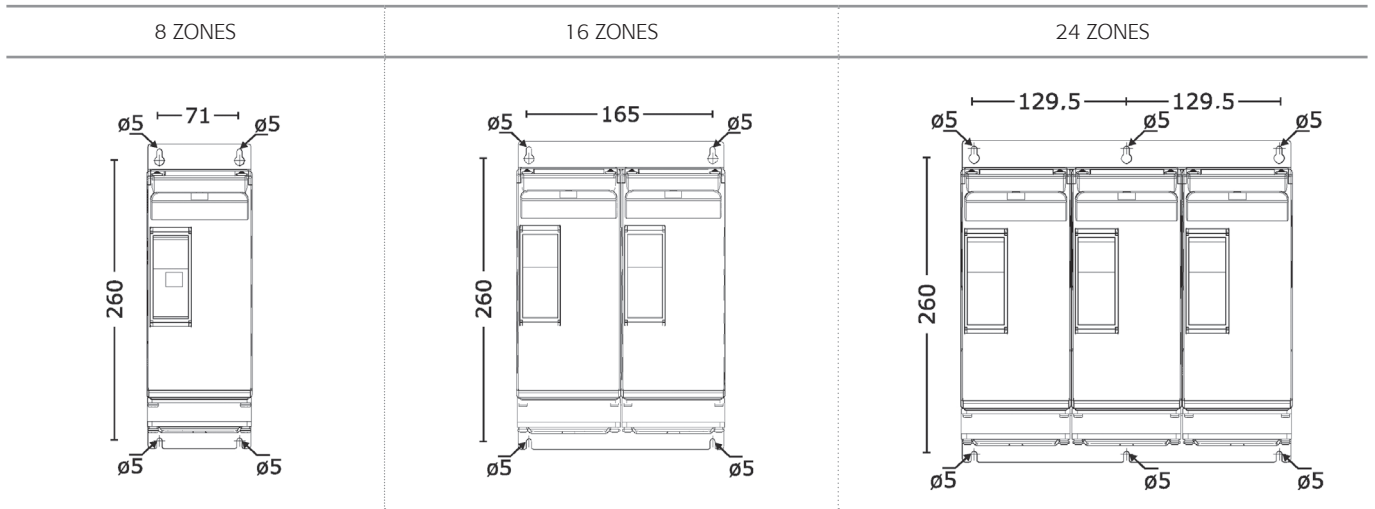


# DIMENSION AND CUT-OUT

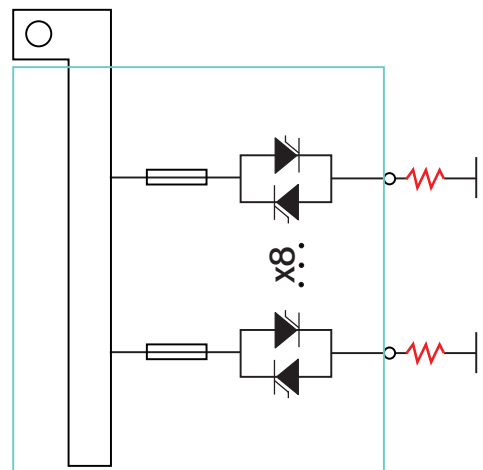
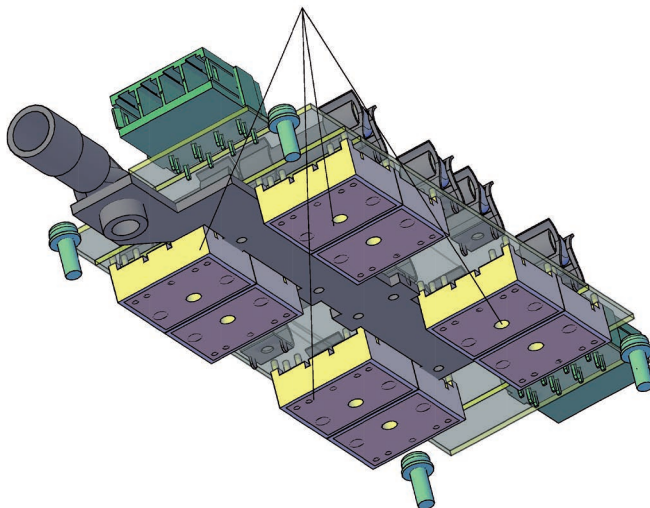


SIZE	W (mm)	D (mm)	H (mm)	WHEIGHT (kg)
8 Zones	93	170	273	3.6
16 Zones	186	170	273	7
24 Zones	281	170	274	10.6

## FIXING HOLES



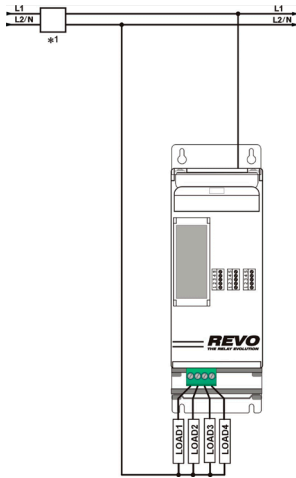
## HIGH I<sup>2</sup>T SCR JUNCTION



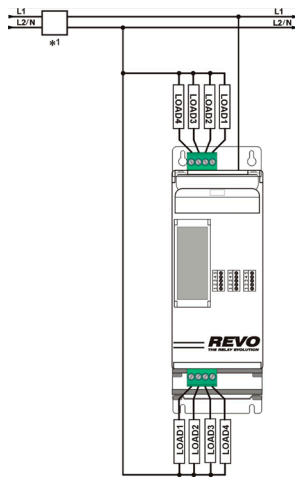
# SINGLE PHASE CONNECTION

From 4 up to 24 Single Phase independent channels sharing the same phase connection

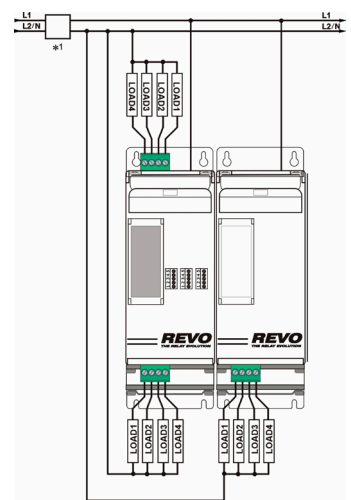
Draw 104



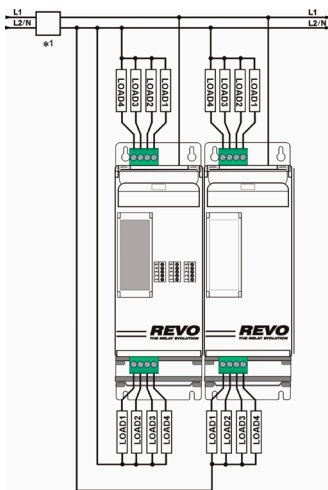
Draw 108



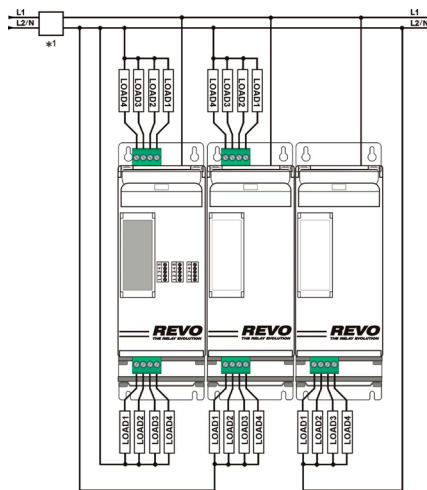
Draw 112



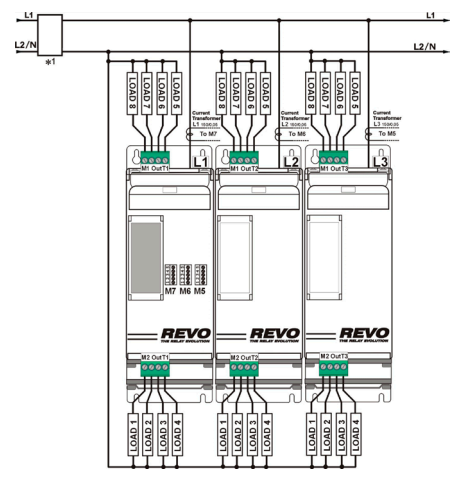
Draw 116



Draw 120



Draw 124



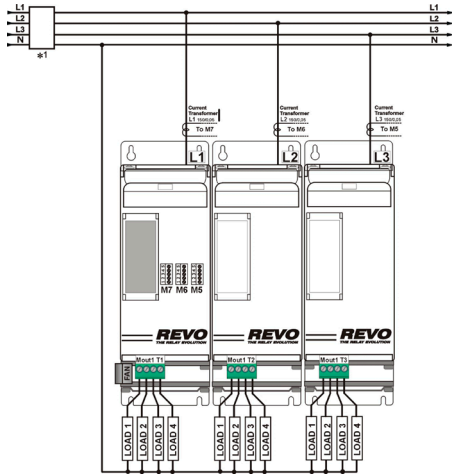
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>ORDER CODE</b>	<b>P</b>	<b>N</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CURRENT</b>				4	5	6										
description				code	code	code										
1 PH 4 zones, all F1-N or F1-F2 (See draw 104)				1	0	4										
1 PH 8 zones, all F1-N or F1-F2 (See draw 108)				1	0	8										
1 PH 12 zones, all F1-N or F1-F2 (See draw 112)				1	1	2										
1 PH 16 zones, all F1-N or F1-F2 (See draw 116)				1	1	6										
1 PH 20 zones, all F1-N or F1-F2 (See draw 120)				1	2	0										
1 PH 24 zones, all F1-N or F1-F2 (See draw 124)				1	2	4										
<b>MAX VOLTAGE</b>					6											
description					code	code										
480V					4											
<b>COMMUNICATION</b>						7										
description						code	code									
N°1 Ethernet Port, Modbus® TCP						1										
N°1 Modbus® Slave port						2										
N°1 Modbus® Master port + N°1 Modbus® Slave Port						3										
N°1 Profibus-DP® Port						4										
N°1 Ethernet Port ProfiNet®						5										
<b>AUXILIARY VOLTAGE</b>							8									
description							code	code								
110V Transformer							1									
220V Transformer							2									
400V Transformer							4									
<b>INPUT</b>								9								
description								code	code							
None, use only communication								0								
<b>FIRING</b>									10							
description									code	code						
Half cycle									1							
Single cycle									2							
<b>CONTROL MODE</b>															11	
description															code	note
Open Loop															1	
Power Feed Back															2	
<b>FUSES + FUSE HOLDER</b>															12	
description															code	note
Fuse & Fuse Holder for each channel															F	
<b>FAN VOLTAGE</b>															13	
description															code	note
110V Fan															1	
220V Fan															2	
<b>APPROVALS</b>															14	
description															code	note
CE EMC															0	
<b>MANUAL</b>															15	
description															code	note
None															0	
Italian															1	
English															2	
German															3	
French															4	
<b>VERSION</b>															16	
description															code	note
All current transformer 50/0.05															0	
All current transformer 100/0.05															1	
All current transformer 150/0.05															2	
All current transformer 200/0.05															3	
Version T with n°8 SSR out to drive external unit up to 210A																
This version is available only with 4/8/12/16 zone.																T
All current transformer to be ordered separately																

**Note (1):** Auxiliary Voltage 24Vdc is required

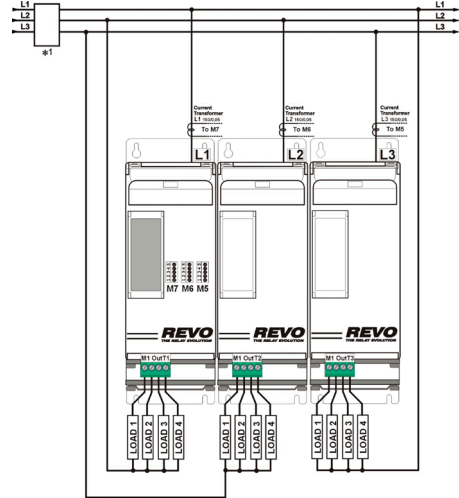
# THREE PHASE CONNECTION

12 or 24 Single Phase independent channels balanced on the three different phases

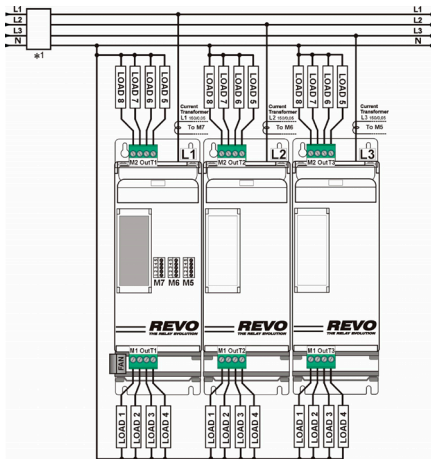
Draw 412



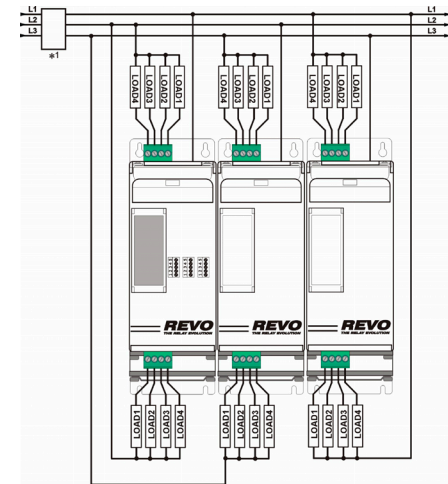
Draw 612



Draw 424



Draw 624



ORDER CODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
<b>CURRENT</b>	P	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>description</b>						4	5	6									
<b>code</b>						4	1	2									
<b>note</b>						4	2	4									
<b>MAX VOLTAGE</b>						6											
<b>description</b>						480V	4										
<b>code</b>						4											
<b>note</b>						4											
<b>COMMUNICATION</b>						7											
<b>description</b>						N°1 Ethernet Port, Modbus® TCP	1	1									
<b>code</b>						N°1 Modbus® Slave port	2	2									
<b>note</b>						N°1 Modbus® Master port + N°1 Modbus® Slave Port	3	3									
						N°1 Profibus-DP® Port	4	4	1								
						N°1 Ethernet Port ProfiNet®	5	5	1								
<b>AUXILIARY VOLTAGE</b>						8											
<b>description</b>						220V Transformer	2	2									
<b>code</b>						400V Transformer	4	4									
<b>note</b>						4											
<b>INPUT</b>						9											
<b>description</b>						None, use only communication	0	0									
<b>code</b>						0											
<b>note</b>						0											
<b>FIRING</b>						10											
<b>description</b>						Half cycle	1	1									
<b>code</b>						Single cycle	2	2									
<b>note</b>						2											
<b>CONTROL MODE</b>											11						
<b>description</b>											Open Loop	1	1				
<b>code</b>											Power Feed Back	2	2				
<b>note</b>											2						
<b>FUSES + FUSE HOLDER</b>											12						
<b>description</b>											Fuse & Fuse Holder for each channel	F					
<b>code</b>											F						
<b>note</b>											F						
<b>FAN VOLTAGE</b>											13						
<b>description</b>											110V Fan	1	1				
<b>code</b>											220V Fan	2	2				
<b>note</b>											2						
<b>APPROVALS</b>											14						
<b>description</b>											CE EMC	0	0				
<b>code</b>											0						
<b>note</b>											0						
<b>MANUAL</b>											15						
<b>description</b>											None	0	0				
<b>code</b>											Italian	1	1				
<b>note</b>											English	2	2				
											German	3	3				
											French	4	4				
<b>VERSION</b>											16						
<b>description</b>											All current transformer 50/0.05	0	0				
<b>code</b>											All current transformer 100/0.05	1	1				
<b>note</b>											All current transformer 150/0.05	2	2				
											All current transformer 200/0.05	3	3				

**Note (1):** Auxiliary Voltage 24Vdc is required

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