EMC SOLUTIONS

The EC Directive 2004/108/CE on electromagnetic compatibility applies to equipment and units that can generate disturbance/interference or whose operation may be affected by disturbance/interference.
Increasing electromagnetic pollution requires to shield all electronic equipment installed in cabinets and panels.
The enclosures are not subject to EMC regulations, however ETA offers the following solutions upon request:
- Emc cabinets
- Emc boxes

CHARACTERISTICS/DELIVERY

- structure manufactured from galvanized sheet steel
- door manufactured from galvanized sheet steel painted only externally, with locking system
- rear panel and roof manufactured from galvanized sheet steel and painted only externally.

CONFORMITY AND APPROVAL

c UL US LISTED

PROTECTION RATINGS

- IP 55
- NEMA 1 complying with UL508A; UL50.

ARETA EMC CABINET				
EMC CABINET CODE	EMC LATERAL PANELS (2 PCS)	CABINET DIMENSIONS		
		L mm	A mm	P mm
ARETZ062006PR	ATFI060200EMC	600	2000	600
ARETZ082006PR	ATFI060200EMC	800	2000	600
ARETZ062008PR	ATFI080200EMC	600	2000	800
ARETZ082008PR	ATFI080200EMC	800	2000	800

Further dimensions available on request.

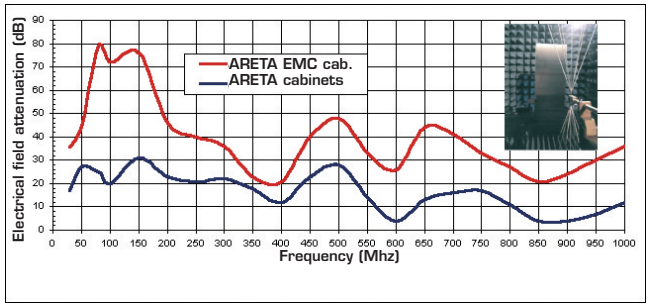
As per the chart next, considering the same frequency the electrical field attenuation is higher with Emc solutions.

ARETA STANDARD

Standard cabinets guarantee a good Emc shielding degree.
Standard sendzimir mounting plate gives good electric conductivity in those parts in contact with the mounted equipment.
It also guarantees a very quick and high electrostatics dissipation and improves Emc attenuation.

ARETA EMC

To achieve a high Emc shielding degree, the cabinet structure and all its components are manufactured from galvanized sheet steel; all the removable panels, in sendzimir sheet steel, are painted only externally.
Conductive gaskets guarantee complete continuity with the structure, giving it the same IP protection degree.



Results obtained after testing the enclosures in the certified laboratory Nemko S.p.A.

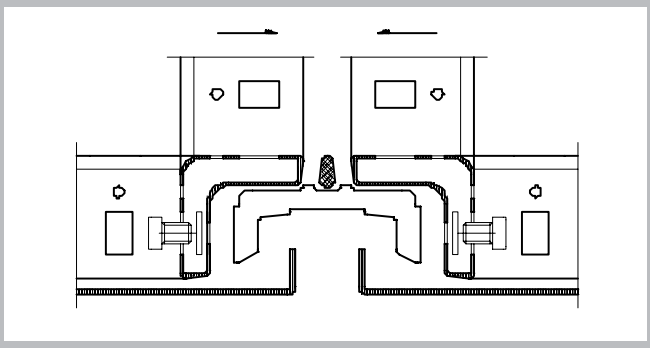
On request:
windows manufactured in polycarbonate or metacriled with an inner metallic grid guaranteeing perfect monitor and display viewing, even high definition, without substantially altering the shielding value.

JOINING KIT ATKU-002 EMC

To be used to join two cabinets together. It is better to use lifting brackets WTSS - 001 instead of lifting eyebolts.

DELIVERY

Supply includes:
- joining spacers
- conductive gasket manufactured from a metal fabric coating, with an EPDM core and a bi-adhesive unwoven tissue, ensuring dielectric continuity and resistance
- fixing accessories.



ST BOXES EMC

CHARACTERISTICS/DELIVERY

Box complete with:
- galvanized mounting plate
- locking system in zinc alloy with stainless steel lever and double bar ø 3mm key
- conductive gasket
- screws for mounting plate and earth connection

CONFORMITY AND APPROVAL

c UL US LISTED

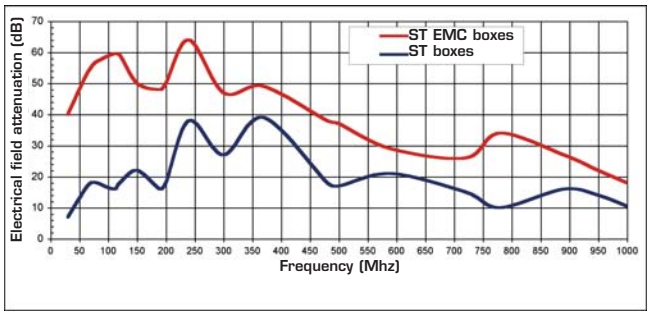
PROTECTION RATINGS

- IP 55
- NEMA 1 complying with UL508; UL50.

ST EMC BOXES

STE CODE	BOX DIMENSIONS WIDTH	HEIGHT	DEPTH
STE4420	400	400	200
STE4620	400	600	200
STE6630	600	600	300

As per the chart next, considering the same frequency the electrical field attenuation is higher with Emc solutions.
Box and door manufactured in sendzimir sheet steel are painted only externally.
Continuity between the box structure and the door is guaranteed by the unpainted contact edge and by the conductive gasket which also assures IP protection degree.



Results obtained after testing the enclosures in the certified laboratory Nemko S.p.A.

CHARACTERISTICS/DELIVERY

Box complete with:
- conductive gasket
- captive screws for lid fixing.

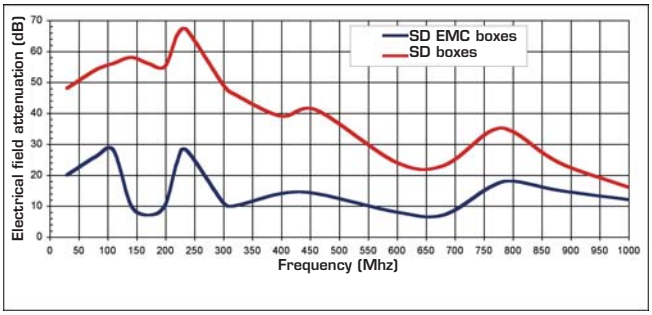
CONFORMITY AND APPROVAL

c UL us LISTED

PROTECTION RATINGS

- IP 55
- NEMA 1 complying with UL508; UL50.

SD EMC BOXES			
SDVE CODE	BOX DIMENSIONS		
	WIDTH	HEIGHT	DEPTH
SDVE3312	300	300	120
SDVE5312	500	300	120



Results obtained after testing the enclosures in the certified laboratory Nemko S.p.A.

CUSTOMIZATION

CUSTOMIZATION

The “modified standard” product has become a key strength of our production over time.
With the technology and know-how acquired through 30 years of experience in sheet metal processing, we can approach the market with solutions that are closer and closer to customer needs.
With their suggestions, we conceive, develop and create many custom versions of standard products in our catalog.
An advanced system for CAD/CAM, production planning and painting ensures flexibility, efficiency and optimal results also for customized products.
With our “ETAcad” software, customers can make all modifications on their PC and send the files by e-mail directly to ETA: we will produce the pieces as requested.
This is what we call “customer project”.
In the diagram on this page, you will find all possible processes that can be carried out on the different product families: special dimensions with 100 mm steps, painting, drilling, special closures, assembling and all possible solution to meet your specific requirements.

PRODUCT TYPE	Special Width (100mm increments)	Special Height (100mm increments)	Special Depth (100mm increments)	Special Paint	Holes in Door	Holes in Box	Holes in Mtg Plate	Additional Gland Plates	Special Locks	Special Studs in Box	Special Studs on Door	Special Studs on Mtg Plate	Fit Complementary/Accessories	Fit Doors front/rear	Glazed Doors	Inner Doors	Multiple Doors	EMC Capability	Minimum Quantity/Applies
ST Mild Steel	■	■		■	■	■	■	■	■	■	■	■	■		■	■		■	■
STX Stainless Steel	■	■	■	■	■	■	■	■	■	■	■	■	■						■
SD Terminal Box	■	■		■	■	■	■			■	■	■	■		■			■	■
ARETA Mild Steel	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■
ARETA Stainless Steel	■	■	■	■	■	■	■		■	■	■	■	■	■		■			■
ATB8 Monobloc				■	■	■	■		■	■	■	■	■		■	■			■
CS Compact Enclosure				■	■	■	■		■	■	■	■	■		■	■			■
E.GO Mild Steel				■	■		■		■		■	■	■	■	■	■	■		■
AE Console Base	■			■	■	■	■		■	■	■	■	■						■
AEX Stainless Steel	■				■	■	■		■	■	■	■	■						■
PE Console Top	■			■	■	■	■		■	■	■	■	■						■
PEX Stainless Steel	■				■	■	■		■	■	■	■	■						■
ME Console Shelf	■			■	■	■	■		■	■	■	■	■						■
MEX Console Shelf	■				■	■	■		■	■	■	■	■						■
ARETA AL Console	■			■	■	■	■		■	■	■	■	■	■					■
ZBA Desk	■			■	■	■	■		■	■	■	■	■						■
ZBX Stainless Steel	■				■	■	■		■	■	■	■	■						■
SBA Desk	■			■	■	■	■		■	■	■	■	■	■					■
ARETA PC	■	■	■	■	■	■	■		■	■	■	■	■	■					■
PC on Pedestal				■	■	■	■		■	■	■	■	■						■

BUSBAR DISTRIBUTION SYSTEMS FOR LV AUTOMATION

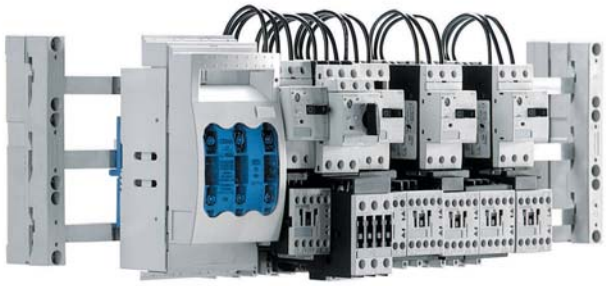
With the distribution system on bars with 60 mm interaxis, ETA can offer - among different solutions - the Areta cabinet as a complete system for automation panels, consisting of bars with related supports, terminal boards, terminals, adapters for switches and fuse bases.

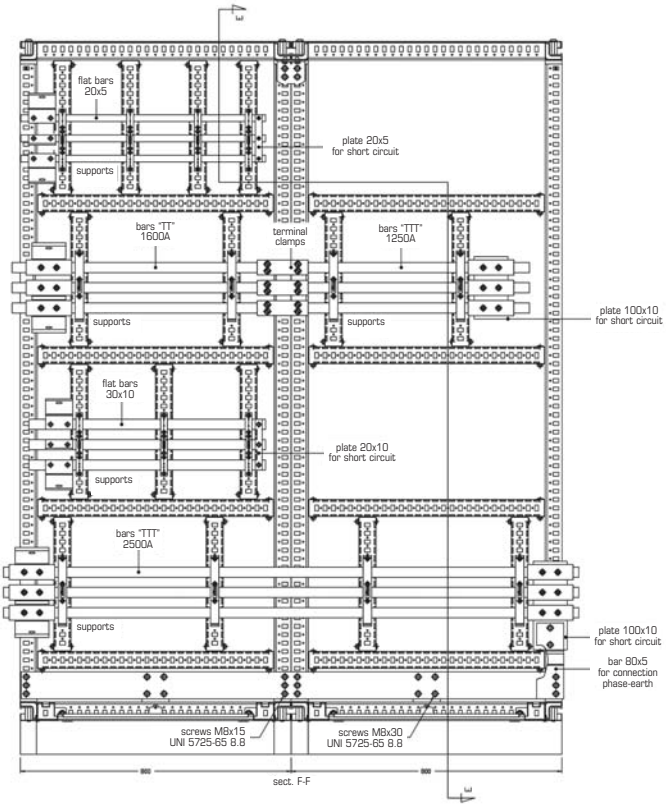
In collaboration with a leading commercial partner, ETA has executed a test in the CESI test rooms (according to CEI EN 60439-1 Art. 8.2.3) for short-circuit resistance on five different busbar systems mounted in two Areta cabinet assembled in battery, in order to provide electric panel manufacturers with a certified bar cabinet configuration. The following busbar systema were tested:
Triple T copper bars- In 2500 A
Double T copper bars- In 1600 A
Double T copper bars- In 1250 A
30 x 10 (mm) copper bars - In 630A/800 A
20 x 5 (mm) copper bars - In 320 A
From the test value, all other Icw (Icc) values were extrapolated according to the CL distance between supports.
For six further bar systems with different load capacity, all values were extrapolated from the two tested systems (30 x 10 or 20 x 5), referring to the most suitable in terms of acceptable short circuit current, as prescribed by the standard CEI 17-52.
The results of the test are reported in the table hereunder with the reference values.

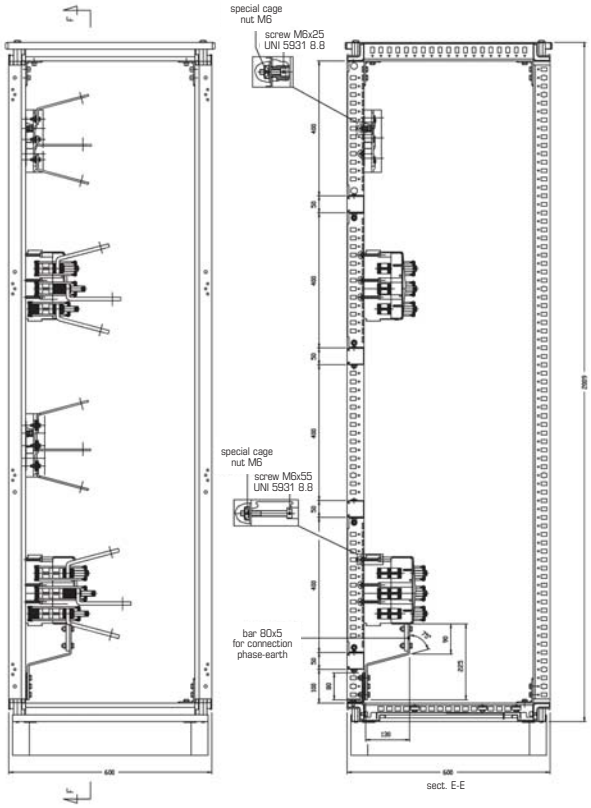
The Areta series enclosures have withstood the short circuit dynamic stress with no problem, including short circuit between phase and ground, where current flows through the metal structure.
The same ARETA enclosures had already been tested with traditional bar systems up to 60 kA three-phase and 48 kA ground-phase, with no damage, therefore they can be used up to these values with all the bar systems from the leading brands.
In addition the bar distribution system solution tested and offered by ETA is highly resistant as resulting from the short circuit tests carried out at the CESI laboratory and giving better results than conventional wiring.
The following is a review of ETA's solutions for bar distribution:
- supports and covers for 60 mm systems with flat bars (up to 630 A)
- supports and covers for 60 mm systems with profiled bars (up to 2500 A)
- flat copper bars size 12 – 30 x 5 /10 mm
- copper bars with double and triple T profile
- plates with terminals
- covers for terminals
- longitudinal connections
- terminals up to 630 A
- terminals for profiled bars up to 2500 A
- prewired adapters for motor starting
- universal adapters for boxed switches up to 630 A
- Sectionable bases for NH fuses
- Bases for D/DO fuses
- Sectionable bases and knife switches for cylindrical fuses

All power supply and distribution components, motor starting adaptors and fuse bases can be mounted directly on a busbar system with 60 mm interaxis in a quick and safe way, thanks to the simultaneous mechanical fastening and electric connection of the different components.
For more information, please refer to the product section of our Web site **www.eta.it** or contact our sales network to request the **BUSBAR SYSTEM OVERVIEW** brochure.

The technical report and tables with type tests carried out have been included also in the QUADROPLAN 5.0 software, within the "Short Circuit" module. Product codes can be found both in the part describing bar positioning to calculate overtemperature inside an ETA enclosure, and in the catalog database included in the same software.







CESI TEST CERTIFICATE

NOMINAL SPECIFICATIONS OF THE TESTED ITEM ASSIGNED BY THE CUSTOMER

OPERATING VOLTAGE (Ue)	690 V
INSULATION VOLTAGE (Ui)	690 V
FREQUENCY	50 Hz
DESCRIPTION	SYSTEM 60 mm: 320 A
BAR CROSS SECTION	(20x5) mm^2
RATED CURRENT	320 A
SHORT TIME WITHSTAND CURRENT (Icw) AND PEAK WITHSTAND CURRENT (Ipk)	20 kA FOR 1 S - 41 kA
DESCRIPTION	SYSTEM 60 mm: 630 A
BAR CROSS SECTION	(30x10) mm^2
RATED CURRENT	630 A
SHORT TIME WITHSTAND CURRENT (Icw) AND PEAK WITHSTAND CURRENT (Ipk)	30 kA FOR 1 S - 63 kA
DESCRIPTION	SYSTEM 60 mm: 1600/1250 A
DOUBLE-T BAR CROSS SECTION	(720)/(485) mm^2
RATED CURRENT	1600/1250 A
SHORT TIME WITHSTAND CURRENT (Icw) AND PEAK WITHSTAND CURRENT (Ipk)	50 kA FOR 1 S - 1 kA
DESCRIPTION	SYSTEM 60 mm: 2500 A
TRIPLE-T BAR CROSS SECTION	(1140) mm^2
RATED CURRENT	2500 A
SHORT TIME WITHSTAND CURRENT (Icw) AND PEAK WITHSTAND CURRENT (Ipk)	50 kA FOR 1 S - 105 kA
SHORT TIME WITHSTAND CURRENT (ICW) AND PEAK WITHSTAND CURRENT (Ipk) OF THE PROTECTION CIRCUIT	40 kA FOR 1 S - 84 kA
EARTH BAR CROSS SECTION	(80x5) mm^2