IB6

Interlocked socket-outlets

IB6

Tradition renews itself

ENGLISH

The company and the product

I.L.M.E. SpA - **INDUSTRIA LOMBARDA MATERIALE ELETTRICO** - has been operating **in Milan since 1938** , in particular in the electrotechnical sector for the manufacture of equipment for industrial installations.
ILME reflects the traditional **entrepreneurial spirit of Lombardy,** and has enjoyed continuous expansion for over half a century. The company has carved an important role for itself in the principal world markets, also operating directly in the countries that have assumed world leadership in the field of automation, including Germany and Japan.
In the **electrical connection** sector with applications in industrial automation, characterised by **top performance** and utmost **reliability** needs**,** ILME is today the acknowledged partner of many leading companies worldwide.
The company's fundamental values are: **Product innovation**, original solutions, excellent **price-quality ratio,** acustomer-oriented **service,** ethical behaviour and respect for the environment.

To promote the continuing improvement of its qualitative **results,** ILME has always encouraged its collaborators to work with maximum **responsibility and participation.**

The company focuses on a series of benefits to the user, including research into the most suitable materials, high quality and safe cabling, a rapid turnaround and readily available services.

CE marking

As from 1 January 1997, in order to launch electrical products on the European market the manufacturer must ensure these bear the relevant CE mark, in line with the Low Voltage Directive 73/23/ EEC * (implemented in Italy as L. D. 18-10-1977 no. 791) and its modification 93/68/EEC * (implemented in Italy as L.D 25-11-1996 no. 626/96, published in the supplement to the Gazzetta Ufficiale of 14-12-1996).
The mark must be visible on the product or, if this is not possible, on the packaging, the instructions for use or on the warranty certificate. It acts as a declaration by the manufacturer that the product complies with all relevant EU directives regarding its field of application.

ILME products bear the CE mark on the actual product or its packaging.

Almost all ILME products fall within the field of application of the Low Voltage Directive. A declaration of conformity is required in order to be able to apply the CE mark. This declaration, to which the market is not directly entitled, must be made available to the controlling authorities (in Italy, the Ministry for Industry, Commerce and Handicraft) at all times. In it, the manufacturer declares the technical safety standard(s) followed in the manufacture of the product. These standards must be, in decreasing order of preference:

- a European standard (EN prefix)
- a European harmonisation document (HD prefix)
- an international IEC standard
- a national standard
- in the absence of reference standards, the manufacturer's internal specifications guaranteeing compliance with the basic safety requirements of the directive.

Compliance with harmonised technical standards (i.e. ratified by CENELEC) also constitutes presumed compliance with the basic safety requirements of the directives.
The CE marking of ILME products results from the declaration of conformity of the product to harmonised standards or international IEC standards.

Through the CE mark, ILME declares full compliance, not merely with the directive's basic safety requirements, but also with those international or national EU standards on which voluntary safety certification markings are based (e.g. IMQ and VDE). In this way, ILME intends to give the CE mark the value of self-certification in terms of safety, given the loss in legal value of voluntary certifications issued by third parties, ratified by directive 93/68/EEC *.

Notwithstanding the above, practically all ILME products still bear voluntary conformity markings.

This EC declaration of conformity becomes null and void when the assembly of products includes one or more components not manufactured by us and without EC approval.

*** Note:**
the new legal reference for the Low Voltage Directive is 2006/95/EC which is the consolidated edition of Directive 73/23/EEC + Directive 93/68/EEC.

On 29th March 2014, the Official Gazette of the European Union published the new Low Voltage directive, 2014/35/EU of 26th February 2014, a rewritten version of directive 2006/95/EC, which will come into force on 20th April 2016.

The information contained in this catalogue
is not binding and may be changed without notice

ISO 9001 certification: 2008
Design, manufacture and distribution of industrial electrical equipment (IAF 19, 29a)
Certificate No. 50 100 11133

IB6

Interlocked socket-outlets for industrial use

Summary

IB6

Tradition renews itself

IB6

Interlocked socket-outlets for the industrial and services sector

What's new in the IB6 range

More space for wiring:
available in both the socket outlet and the junction/box modular unit compartment.

New plate
for housing two socket-outlets ***and a compartment*** for junction box or modular units (height 185 mm).

IP66 degree of protection:
improved protection against dust and water compared to the previous model.

No metal parts
on the outside of the enclosure.

16A, 32A and 63A versions with or without fuse carrier base

Features of the IB6 range

The 16A socket-outlet has the same dimensions and fixing points as the previous IB5 model.

The 32A socket-outlet has the same centre distance as the 16A model, unlike the IB5 series which had the same dimensions as the 63A socket-outlet.

The new range has the following features:

– 16A, 32A (compact) and 63A versions
– polarity: 2P+⏚, 3P+⏚, 3P+N+⏚
– IB6/IB6L with fuse carrier base
– EB6 without fuse carrier base
– IP66 degree of protection (in accordance with EN 60529)
– 16A and 32A: fuse carrier for cylindrical fuses, 10 x 38 (32A max 400V)
– 63A: fuse carrier for cylindrical fuses 22 x 58

New product design

The new modern design and innovative technical features make these socket outlets ideal for the industrial and service sectors. They can be easily installed in locations where aesthetics play an important role.

IP66 degree of protection

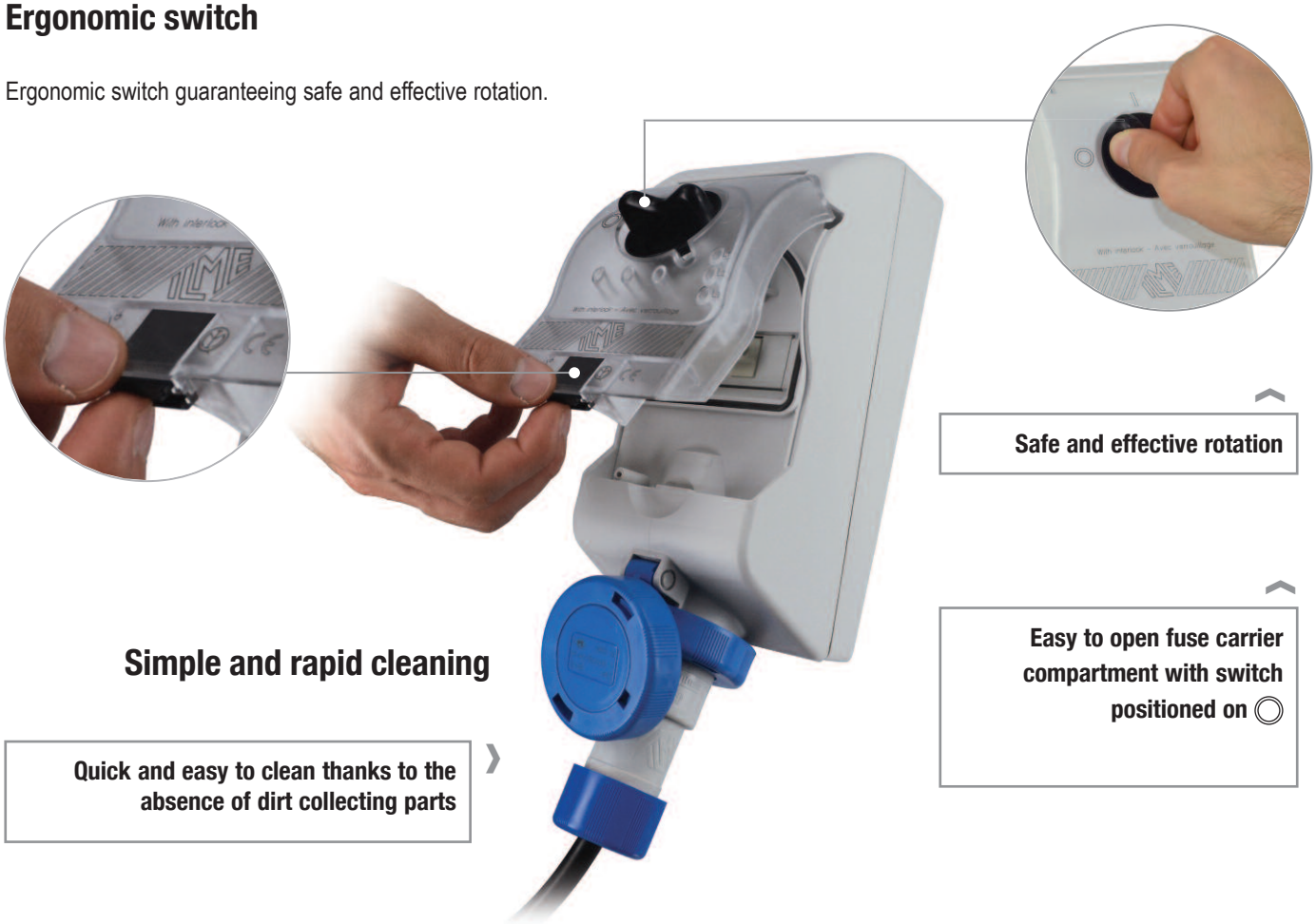
New plate for 2 socket-outlets

More space for wiring

New 63A version

Ergonomic switch

Ergonomic switch guaranteeing safe and effective rotation.



Safe and effective rotation

Easy to open fuse carrier compartment with switch positioned on ◯

Simple and rapid cleaning

Quick and easy to clean thanks to the absence of dirt collecting parts

Fuse carrier boxes

The insertion of the fuse carrier boxes in their housings is guaranteed by the closing of the transparent cover.

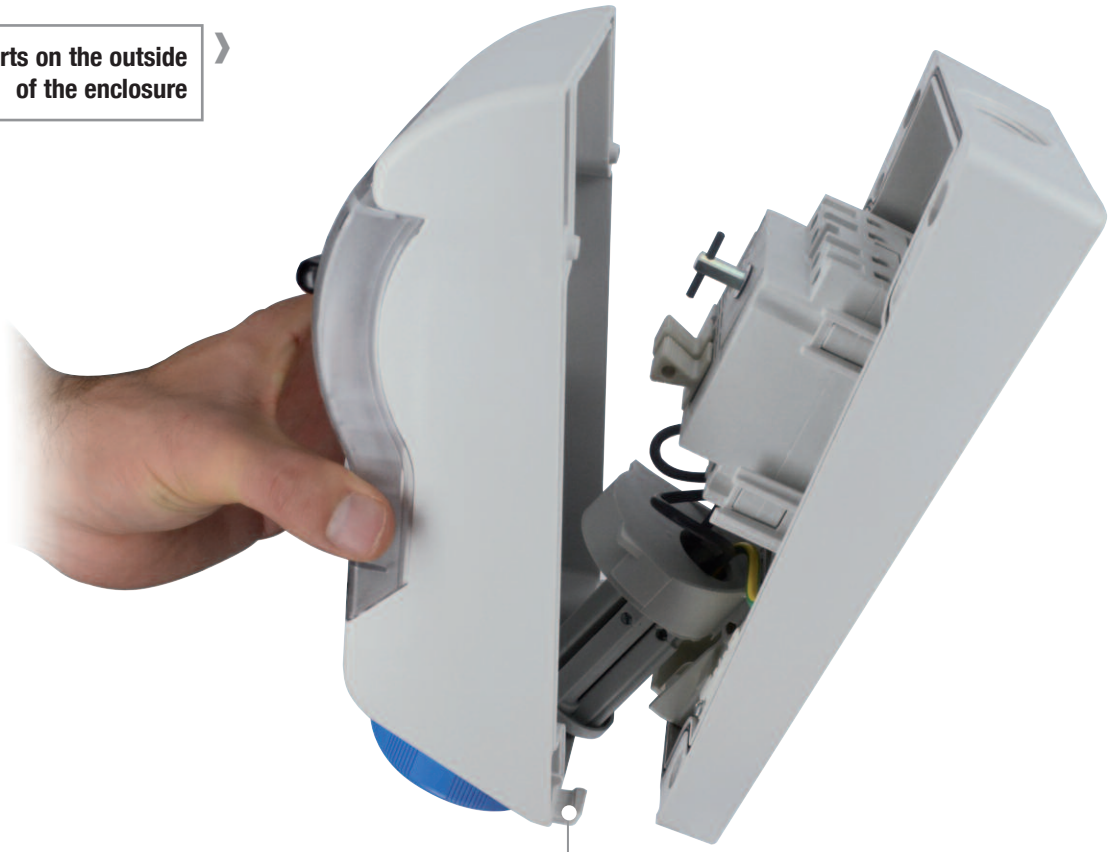
The socket-outlet will only function when protected.

Closing the transparent cover guarantees the correct insertion of the fuse carrier boxes in their housings

The cover can be locked in the open position to make changing the fuses easier

Cover locked in position by 2 screws only

No metal parts on the outside of the enclosure



Bottom engaging pin

Closing stages

The unit is closed by engaging and rotating the socket-outlet cover on the **two bottom pins and then fixed using the two screws**

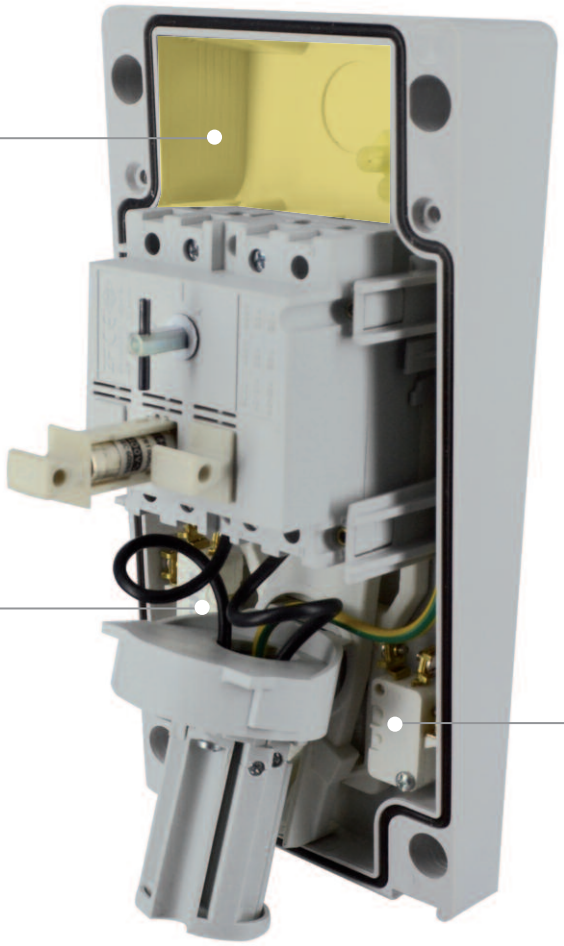
1

2

New fuse carrier compartment

More space for wiring

New fuse carrier base for up to 32A with removable boxes



Microswitch indicating open/closed status of switch

Possibility of positioning two micro switches

Microswitch indicating the presence/absence of the plug

3

4

Fuse carrier cover protection

Possibility of locking the fuse carrier cover with a screw to prevent the mishandling of fuses.

16A and 32A indicator lights

An **IB6L model** with LEDs to signal the triggering of fuses and the opening of the circuit is also available on request.

LEDs to signal the triggering of fuses and the opening of the circuit

Padlockable switch

Switch that can be locked both in position
◯ (open switch disconnector) and
▯ (closed switch) with a padlock.

◯ **- Switch disconnecter in the open position**
▯ **- Closed position**

Drilled and threaded M25 and M40

Pre-drilled and threaded base box (metric, **M25** for 16A/32A, metric for **M40** 63A) to simplify cable entry.

Predrilling and threading simplify cable entry

EN 60309-1 and EN 60309-2 standards

In 1990, **CENELEC** (European Electrotechnical Standards Committee) introduced the provisions of the international publications IEC 60309-1 and IEC 60309-2 into the two corresponding European standards EN 60309-1 and EN 60309-2 (classification CEI 23-12/1 and 23-12/2). **IEC** (*International Electrotechnical Commission*), the worldwide organisation for electrotechnical standardisation, had adopted these publications basing them almost entirely on the EEC 17 Publication of 1958, now withdrawn, issued by the now dissolved organisation **CEEél**. This is why still today this system of industrial sockets and plugs is traditionally called "EEC" by many. The European standards EN 60309-1 and -2 were then compulsorily adopted as national standards by all the CENELEC member states (which as from 1 May 2004, with the expansion of the EU, include Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Iceland, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, Holland, Poland, Portugal, United Kingdom, Czech Republic, Slovakia, Slovenia, Spain, Sweden, Switzerland and Hungary). All conflicting national standards have at the same time been abolished.
Today, therefore, the manufacture of plugs and socket-outlets for industrial use has been harmonised throughout Europe. Before its termination, CEEel's members also included Bulgaria, Israel, former Yugoslavia (today Bosnia, Croatia, Macedonia, Serbia with Montenegro, Slovenia) and the former Soviet Union (today the Russian Federation).

In virtue of the correspondence with the IEC publications, this industrial plugs and socket-outlets system is widely known and appreciated in leading non-European countries such as Argentina, Australia, Brazil, Canada, China, Korea, Egypt, Japan, India, South Africa, Turkey and the USA.
In Italy the above harmonisation is regulated by standards CEI EN 60309-1 and CEI EN 60309-2. In 1999, the fourth editions of the IEC publications were adopted as EN by CENELEC and published in Italy in 2000.

In 2007, Amendment EN 60309-1/A1 (IEC 60309-1 Amd 1, implemented by CEI in February 2008 and in force as from 1st November 2009) introduced technical updates, such as:
- addition of construction and test requirements for terminals and screwless terminals (spring type) and IDC terminals for 16 A accessories (prior to their development) and compliance with the requirements of SC 23F standards (EN 60999-1, EN 60999-2);
- cancellation of the "drop" and "triangle" symbols and the confirmed use of only IP degrees of protection provided for by standard EN 60529;
- introduction of possible alternative nominal current values to the classic 16A, 32A, 63A, 125A and 250A: 6A, 10A, 25A, 40A, 50A, 80A, 90A, 150A, 160A and updating, where necessary, of all test requirements in order to take into account the new nominal capacities;
- restriction on sizes of metric cables and conductors with ban on North American AWG/MCM sizes.

Again in 2007, the Amendment EN 60309-2/A1 extended the construction requirements and tests regarding accessories with screwless terminals (springs) or IDC terminals up to 32A nominal current, though only for Italy and Germany. A "versatile" degree of protection has been introduced, IP66/IP67 (fastenings, covers, retainers with degree of protection IP67), and for very low voltage ≤ 50V socket-outlets and plugs, the 8h position for accessories at 25V - 32A for portable electric incubators has been standardised, for use at 12V d.c. or 24V d.c. aboard ambulances or helicopters (covered by the relative ISO standard).

In 2012, Amendment EN 60309-1/A2 (IEC 60309-1 Amd 2) implemented by CEI in November 2012, in force as from 1st December 2012 – for existing products as from 13-07-2015, introduced further technical modifications in numerous points, the more important being: an increase in the max nominal voltage from 690V d.c. or a.c. to 1 000V d.c. or a.c.; an increase in the max nominal voltage from 250A to 800A, with the relative extensions regarding the sizes of the connectable conductors for the new preferential nominal current values of 315A, 400A, 630A and 800A; the restriction as regards the installation of these devices exclusively by informed personnel (IEV 60050-195:1998, Amendment 1:2001, definition 195-04-02) or appropriately trained personnel (IEC 60050-195:1998, Amendment 1:2001, definition 195-04-01); the extension of the usability of the screwless terminals (spring or IDC type) from 16A up to 32A for the series (that allowed in the EU by CENELEC); update of all test methods required to cover the above amendments.
Still in 2012, Amendment EN 60309-2/A2 2012-04, published by CEI in August 2012 and in force as from 1st September 2012, introduced an amendment to art. 1 "Field of application", in particular to raise the max voltage to 1 000 V a.c. or d.c., art. 3 "Reference standards", Table 104, introducing a supplementary paragraph 16.101 and modifying standardisation Sheets 2-I, 2-II, 2-III and 2-IIIa, 2-IVa, as well as Attachment ZA.

The technical notes below and the products illustrated in the present booklet refer to series 1 versions, used in Europe on the basis of said European Standards and in countries of European technical-cultural origin (e.g. most of Latin America, Australia, South Africa). A series 2 also exists, which differs for its rated current, voltage and frequency values and for its polarity and pole marking, adapting to North American installation standards and those of countries that have adopted this system (e.g. Mexico, Japan).

The provisions of standards

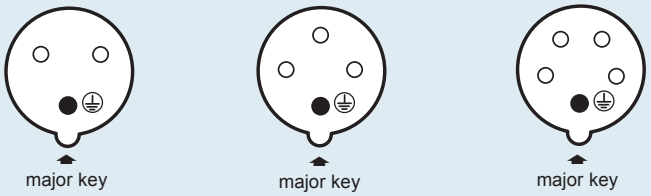
Each model of plug and socket is unique and has a specific use. Each model has safety devices that make it impossible to insert a plug into a socket made for a different capacity, voltage, frequency and number of poles. In the "low voltage" versions, the safety system is based on two references:
- a guiding groove on the socket that corresponds to a nib on the plug;
- an earthing contact of increased capacity with respect to the other contacts, and located in different hour positions according to the voltages used.

The 63A and 125A plugs have a pilot contact for operating an electric interlock.

Hour position (h)

This position is determined by looking at the front of the socket and placing the major guiding groove at the 6 o'clock position and noting the hour position of the earthing contact. Following are examples of three different polarities with the earthing contact at the 6 o'clock position.

Socket - front view



Low voltage over 50V up to 1000V

Number of poles	*Frequency (Hz)*	*Rated operating voltage (V)*	*Hour position (h) earthing contact* [1]		*Colour*
			16A and 32A	*63A and 125A*	
2P+⏚	50 and 60	100 ÷ 130	4	4	yellow
		200 ÷ 250	6	6	blue
		380 ÷ 415	9	9	red
	50 and 60	480 ÷ 500	7	7	black
		supply from ins. transf.	12	12	[5]
	100 ÷ 300	> 50	10	10	[4]
	> 300 ÷ 500	> 50	2	2	[4]
	direct current	> 50 ÷ 250 [6]	3	3	[5]
		> 250	8	8	[5]
3P+⏚		supply from ins. transf.	12	12	[5]
	50 and 60	100 ÷ 130	4	4	yellow
		200 ÷ 250	9	9	blue
		380 ÷ 415	6	6	red
	60	440 ÷ 460 [2]	11	11	red
	50 and 60	480 ÷ 500	7	7	black
		600 ÷ 690	5	5	black
	50	380	3	3	red
	60	440 [3]	3	3	red
	50 and 60	1000	—	8	black
	100 ÷ 300	> 50	10	10	[4]
	> 300 ÷ 500	> 50	2	2	[4]
3P+N+⏚		57/100 ÷ 75/130	4	4	yellow
		120/208 ÷ 144/250	9	9	blue
	50 and 60	200/346 ÷ 240/415	6	6	red
		277/480 ÷ 288/500	7	7	black
		347/600 ÷ 400/690	5	5	black
	60	250/440 ÷ 265/460 [2]	11	11	red
	50	220/380	3	3	red
	60	250/440 [3]	3	3	red
	50 and 60	supply with insul. transf.	12	12	[5]
	100 ÷ 300	> 50	10	10	[4]
	> 300 ÷ 500	> 50	2	2	[4]
all types	All rated operating voltages and/or frequencies not covered by other configurations. In addition, this hour position can be used in special applications where a distinction is required with respect to the other standardised positions.		1	1	[5]

[1] The positions indicated with dashes "-" are not standardised.
[2] Mainly for marine installations.
[3] Only for refrigerated containers (standardised by ISO).
[4] If necessary, green may be used together with the colour of the operating voltage for frequencies of over 60 Hz up to 500 Hz inclusive.
[5] Colour according to voltage.
[6] This configuration must have an earthing contact as it covers voltages higher than the upper limits of the ELV (d.c.) according to IEC 60364-4-41.

Normal service conditions for electrical equipment

The standard EN 60439-1 applies to low-voltage switchgear and control gear assemblies, commonly known as low-voltage boards, with rated voltage not exceeding 1000V eff. a.c. (with frequency not exceeding 1 kHz, although boards for greater frequencies are allowed under further specific prescriptions) or 1500V in d.c. This standard defines the equipment (boards) for indoor and outdoor use in accordance with the installation conditions. The normal service conditions are in fact defined for indoor and outdoor use.
These normal conditions are also used as reference in standard EN 60664-1 (basic safety publication) for the coordination of insulation. This coordination consists of the definition of the rated insulation values (the air and surface distances between conductors of different voltages) of electrical equipment and the corresponding components relating to:

- dielectric characteristics of the insulating materials used
- degree of pollution in the environment where they are to be used
- overvoltage category of the point at which they are connected to the network (distance from the generating centres).

1. Ambient air temperature
In normal indoor service conditions, the temperature should not be lower than -5 °C or greater than +40 °C and the average value over 24 h should not exceed +35 °C. For outdoor installations the minimum value is -25 °C in mild climates and -50 °C in Arctic climates (with the possibility of an agreement between manufacturer and user in the latter case).

2. **Altitude**
The altitude of the installation site should not exceed 2000 m. For equipment to be used at higher altitudes, it is necessary to consider the reduction of dielectric rigidity and the cooling effect of the air. For installations in different conditions, refer to the manufacturer.

3. Atmospheric conditions:

Humidity and pollution
The relative humidity of the air should not exceed 50% at a maximum temperature of 40 °C. Higher relative humidity values are allowed at lower temperatures, for example: 90% at +20 °C. For outdoor installations, the relative humidity may reach 100% at a maximum temperature of +25 °C.

Degrees of pollution

The pollution degrees define the environmental conditions. To go in more detail, standard IEC 60664-1 clarifies that pollution is defined as any contribution of foreign matter, whether a solid, liquid or gaseous (ionised gas), that may negatively affect the dielectric strength of the surface resistivity of the insulating material.
Four degrees of pollution are defined and are described by conventional numbers based on the quantity of polluting agent or on the frequency with which the phenomenon occurs that reduces the dielectric strength and/or the surface resistivity.

- **pollution degree 1**: no pollution or only dry non-conductive pollution. The pollution has no influence.
- **pollution degree 2**: only non-conductive pollution except that occasionally a temporary conductivity caused by condensation is to be expected.
- **pollution degree 3**: conductive pollution occurs or dry non conductive pollution occurs which becomes conductive due to condensation [7].

The **pollution degree 2** refers to a household or similar environment.
The **pollution degree 3** refers to an industrial or similar environment.

The third edition and the forthcoming fourth edition of EN 60309-1 standard (IEC 60309-1) specifies that the normal use environment for the industrial plugs and socket-outlets complying with this standard has a pollution degree 3 according to standard IEC 60664-1.

[7] Pollution degree 4 was eliminated in the new standard edition as clearly illogical: conditions of persistent conductivity caused for example by conductive dust, rain or snow are definitely to be avoided throughout the project, and no isolating distance is capable of withstanding them.

[8] The **IP66/IP67** degree of protection has been introduced in the Amendment 1 of standards EN 60309-1 and EN 60309-2 (and of the relating IEC standards). It is already accounted for in the IP degree of protection standard EN 60529 as a "versatile" form of protection, covering the fact that the temporary immersion resistance test (protection IPX7) does not automatically comply with the two lower degrees of protection IPX6 and IPX5, tested with the respective jet tests. If the end user requires the equipment to resist both against temporary immersions and pressurized water jets, declaredly IP66/IP67 devices with double marking must be selected.

IP degree of protection and the EN 60529 standard

The minimum IP degree of protection is regulated by the CEI 64-8 installation standards (inclusion of the harmonisation documents of the CENELEC HD 384 series and the IEC 60364 publication) which, in part 7, cover a number of special environments: construction and demolition sites, structures designed for agricultural or livestock breeding use, restricted conductor areas, caravans and caravan sites, environments with a greater risk in case of fire, public performance and entertainment areas, pools and, in the future, fountains, marinas and harbour areas. The standard is applicable to enclosures for electric materials with a rated power no greater than 72.5 kW. All the equipment must be installed according to state of the art rules and must comply with any manufacturer's assembly instructions. When components of different degrees of protection are assembled, the resulting board or distribution system will assume the lowest degree of protection of the mounted components. This has been assessed and applies to:

- socket-outlets, when a plug of the same degree of protection is inserted or when the cover is closed (with counternuts tightened for IP67).
- plugs (with counternuts tightened for IP67).
- enclosures, when all covers are closed

The range of ILME products presented in this catalogue offers the following range of protection:

IP44: protection against the *penetration of solid foreign objects* with a diameter equal to or greater than 1 mm for protection against the intrusion of dangerous parts with an access calibre of Ø 1 mm (1st digit), and protected against the *dangerous effects of water spray* from all directions (2nd digit).
IP55: Protection against the *penetration of harmful quantities* of powder and against *access to dangerous* parts with an access calibre of Ø 1 mm (1st digit) and protected against the *dangerous effects of water jets* with a nozzle from all directions (2nd digit).
IP66: total protection against *dust* and access to *dangerous parts* with an accessibility calibre of Ø 1 mm (1st digit), and protected against powerful *water jets* such as sea waves (2nd digit).
IP67: total protection against *powder* and against *access to dangerous parts* with an access calibre of Ø 1 mm (1st digit) and protected against the *effects of temporary immersion* (30') in water at a maximum depth of 1 metre (2nd digit).
IP69: total protection against *dust* and access to *dangerous parts* with an accessibility calibre of Ø 1 mm (1st digit), and protected against powerful *water jets, such as sea waves, and high temperatures* (2nd digit).

The socket-outlets with IP55 degree of protection and those with double degree of protection IP66/IP67 [8] have a bayonet jointed lid, traditionally defined as "water-tight" and require plugs with IP67 degree of protection (with counternut and gasket) to preserve the degree of protection marked on the apparatus.

1st digit
Personal protection against contact with hazardous parts

IP	External solid objects	Protection
0		none
1		against solid foreign objects with Ø greater or equal to 50 mm (e.g. hand)
2		against solid foreign objects with Ø greater or equal to 12 mm (e.g. finger)
3		against solid foreign objects with Ø greater or equal to 2.5 mm (e.g. tools and wires)
4		against solid foreign objects with Ø greater or equal to 1 mm (e.g. fine tools and wires)
5		against dust (no harmful deposit)
6		total against dust

2nd digit
Protection of materials against harmful penetration of water

IP	Tests	Protection
0		none
1		against vertical drops of water
2		against drops of water with an inclination of 15° from the vertical
3		against drops of water with an inclination of 60° from the vertical
4		against splashing water from all directions
5		against jets of water from all directions
6		against powerful jets of water (such as sea waves)
7		against the effect of temporary immersion in water at a depth of 1 metre
8		against the effect of prolonged immersion in water (duration and/or depth according to requirements)
9		against jets of water at high pressure and high temperature

General characteristics

This chapter illustrates the technical characteristics of the IB6 series of interlocked socket outlets.

Socket-outlets have tested reliability and can be used in combination with ILME socket-outlets for industrial use as modular integrated systems to configure distribution systems for industrial socket-outlets.

ILME socket outlets are designed to be used in industrial, agricultural, livestock breeding, domestic and similar environments (i.e. common areas of condominiums, cellars, garages, community buildings, kitchens, etc.) as well as in the services sector (commercial, trade exhibitions, etc.).

The following are types of socket-outlets in **insulating enclosures:**

- **KI...EB6** types with interlock and without fuse carrier
- **KI...IB6** types with interlock and fuse carrier
- **KI...IB6L** types with interlock, fuse carrier and indicator lights.

To ensure the correct electrical connections, socket-outlets are supplied with a base box **with an M25 or M40 metric threaded hole.**

Socket-outlets are also suppliedwith accessories specifically designed for **distribution systems in group configuration to** meet all possible installation needs.

Models can also be supplied with **matching back plates** in two sizes for the assembly of socket-outlets, **connection/distribution boxes** and **compartments for modular units** (i.e. for protection and control equipment).

Socket-outlets and boxes with compartment for modular units can be used to spring-lock modular units (17,5 mm x 45 mm base unit, compliant with DIN 43880) with sized **guide DIN-rails EN 60715**.

Socket-outlets can generally be used in environments with high fire hazard (CEI 64-8/7).

Electrical features

- Nominal frequency:
0 Hz (direct current), and from 50 to 500 Hz

- Rated operating voltage:
socket-outlets (and plugs) for effective voltage values of over 50V and up to 690V

- Polarity:
models are designed with 3, 4 and 5 poles (low voltage, 2P+⏚, 3P+⏚, 3P+N+⏚)

- Rated current:
with 16A, 32A and 63A values (low voltage)

- Rated insulation voltage:

- **690V** for low voltage interlocked socket-outlets (KI...EB6 types).
- **500V** for low voltage interlocked socket-outlets with fuse carrier (KI...IB6 types, 16A/63A 500V and 32A 400V, compact model), limited by the fuse cartridges and switch;

  - *minimum surface insulation distance:* 10 mm (CEI EN 60309-1);
  - *minimum air insulation distance:* 8 mm (for rated operating voltages below 500V)

- Breaking capacity:
tested on socket-outlets without interlock at 1.25 times the rated current, with no load voltage equal to 1.1 times the rated operating voltage. The main part of the interlocked socket-outlets (insert + contacts) is the same as that of non-interlocked socket-outlets.

Mechanical features

- Mechanical resistance:
tested in accordance with the requirements of Article 24 of standard CEI EN 60309-1 (IEC 60309-1)

- Interlocking device:
mechanical, compliant with standard CEI EN 60309 -4 (IEC 60309 -4)

- Mechanical resistance to impacts:
IK09 (according to EN 62262)

- Maximum dissipating power of enclosures:
accordance with **Table 1** (see page 11)

- Glow-wire resistance:
in compliance with IEC 60695 -2 -11: 850 °C for enclosures; 850 °C for inserts (16A and 32A); 960 °C for inserts (63A)

- Temperature:
ambient: -25 °C ÷ +40 °C; limit of materials: -40 °C ÷ +125 °C

- Self-extinguishing capacity (UL 94 classification):
for enclosures: **V2**
for 16A, 32A and 63A inserts: **V2**

- Switch disconnectors:
compliant with standard CEI EN 60947-3, AC-22A category of use at rated current (as prescribed in standard CEI EN 60309 -4).

Materials

- Inserts in insulating self-extinguishing thermoplastic material
- Enclosures in insulating self-extinguishing thermoplastic material
- Gaskets in expanded polyurethane
- Terminals with zinc-plated screws retained in their seats when unscrewed
- Self-centring socket holes in brass with galvanised steel pressure spring
- Cover fixing screws in stainless steel.

Supply extension

The following may be supplied on request:

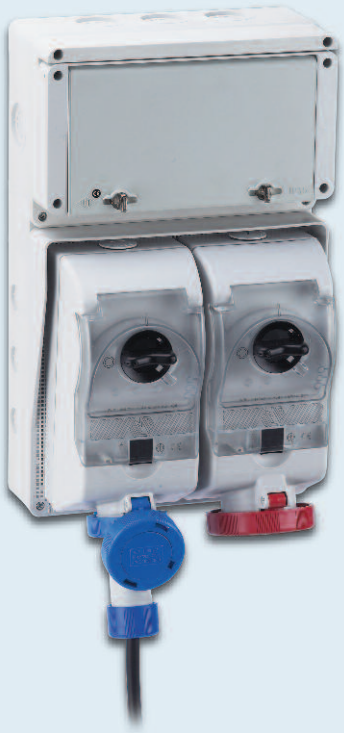
- Back plates
- Distribution boxes
- Enclosures for modular units
- Simple boards and boards with compartment for modular units
- Connections and fittings, cable glands, etc.
- Signal micro-switches
- Anti-tamper screw for panel
- Padlock for switch knob

Degree of protection

The degree of protection should be chosen according to installation standard CEI 64-8 (that implements harmonized documents CENELEC HD 384 and IEC 60364), section 7 of which refers to specific types of installations, such as: construction and demolition sites, structures designed for agricultural or livestock breeding activities, restricted conductor areas, caravans and caravan sites, environments with higher fire hazards, public performance and entertainment areas, pools and fountains, and marine and harbour areas.

KI IB6 interlocked sockets have an IP66 degree of protection. Sockets with an IP66 class of protection have a bayonet fastening cover, traditionally defined as "water-tight", and must be used with IP67 plugs (with locking ring and gasket) to guarantee a high protection of the connected equipment (IP 66).
All the equipment must be installed according to state of the art rules and must comply with any manufacturer's assembly instructions. When components of different degrees of protection are assembled, the resulting board or distribution system will assume the lowest degree of protection of the mounted components.

This has been assessed and applies:
- to socket-outlets when a plug with equivalent class is inserted or the cover is closed
- enclosures, when all covers are closed



ILME accessories for KI IB6 socket-outlets

ILME offers the following range of plugs, back plates and enclosures:

- **Plugs for industrial use** in two standard versions with degree of protection **IP44** and **IP67** (**PE, PEW, PES, PESW, SIP, SIPW** and **PEM** types)

Ordinary back plates (**FC1141 TB** and **FC 1453 TB** types)

- **Back plates with boxes for modular units** (FC 2957 DT/DC types), with degree of protection **IP66;**

- **Boxes for modular units** (**FC...GB5** types), with **IP55 and IP56 degree of protection**

- **Distribution boxes** (**FC...DB5 types**), with **IP55 and IP66 degree of protection**

- **Alveolated boards** for socket-outlet assembly (**FC 2525 MU** and **C 2542 RA**/ **RAT types**), with **IP55 degree of protection**

All plugs, back plates and enclosures cover the installation requirements specified in standard CEI 64-8 (series Cenelec HD 384, IEC 60364).

Application of "*draft*" standard CEI 23-49, CEI EN 60670-24

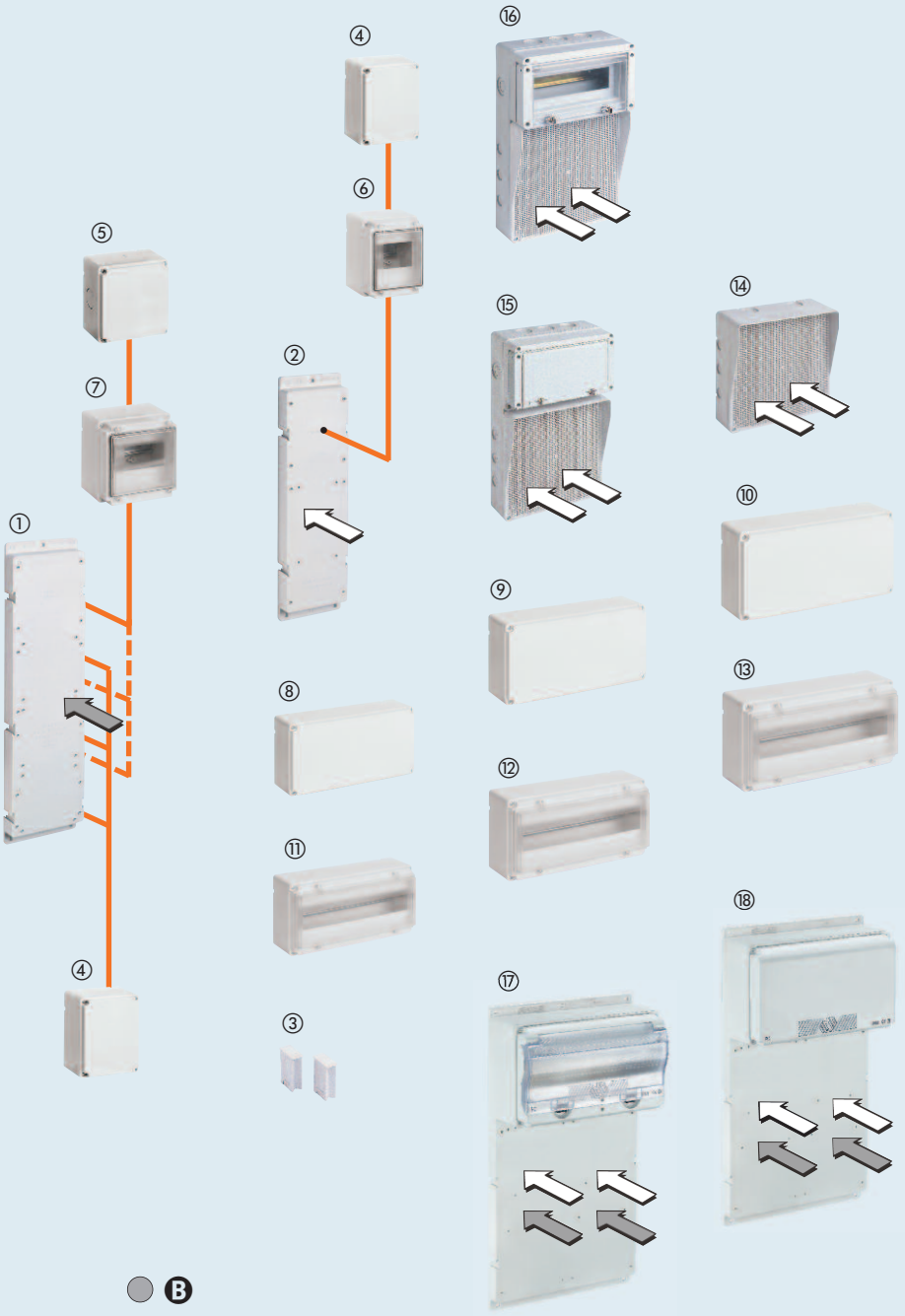
The maximum power that can be dissipated, P_{inv} has been tested for each box in the most severe operating conditions using the method described in draft standard CEI 23-49, CEI EN 60670-24. Results are shown in **Table 1 below**.

Table 1 - Max. dissipating power P_{inv} available in enclosure (CEI 23-49, CEI EN 60670-24)

item	description	module number	P_{inv} [9] (W) wall-mounting	P_{inv} [9] (W) flush-mounted
FC 1114 DB/DB5	114 x 144 mm box	5 units	9	not applicable
FC 1414 DB/DB5	144 x 144 mm box	6 units	11	not applicable
FC 1114 GB5	114 x 144 mm box	5 units	9	not applicable
FC 1414 GB5	144 x 144 mm box	6 units	11	not applicable
FC 2214 GB5	228 x 144 mm box	11.5 units	13	not applicable
FC 2514 GB5	258 x 144 mm box	13.5 units	15	not applicable
FC 2814 GB5	288 x 144 mm box	15 units	17	not applicable
FC 2542 RA/RAT	enclosure 255 x 420 mm	10 units	14	17
FC 2957 DT.../DC...	plate with box 294 x 185 mm	14 units	16	not applicable

[9] **Determined for each enclosure size under the most sever load conditions provided for this standard.**

FC complementary parts



Series KI IB6, EB6 socket-outlets

Ⓐ

16A - 32A
IB6 / IB6L

16A - 32A
EB6

Ⓑ

63A
IB6

63A
EB6

Legend

The list shows all the possible combinations of socket-outlets, back plates and enclosures that can be used to configure distribution systems.

The coloured point near to the socket-outlets (○ ●) indicates their size,
while the arrows (in the matching colour) near to the accessories ( ) indicate the assembly options.

Ⓐ = Socket-outlets with 228 x 114 mm fixing base

Ⓑ = Socket-outlets with 343 x 143 mm fixing base

KI ... IB6 interlocked socket-outlets and sectionable fuse carrier

- Compliant with EN 60309-1, -2 and -4
- Enclosures and inserts in insulating self-extinguishing thermoplastic material, RAL 7035 grey
- 16A and 32A types with bayonet cover
- Factory installed internal wiring
- Cable entry with threaded metric opening
- "ZF" series switch, with 32A rating
- Mechanical interlock that prevents: the switch from being turned on without the plug inserted and the plug from being removed while the switch is on
- Padlockable switch
- Compartment with sectionable fuse carrier, 10 x 38 mm (fuses not supplied) and clear inspection panel openable only when the switch is off.

16A
IP66 degree of protection

32A
IP66 degree of protection

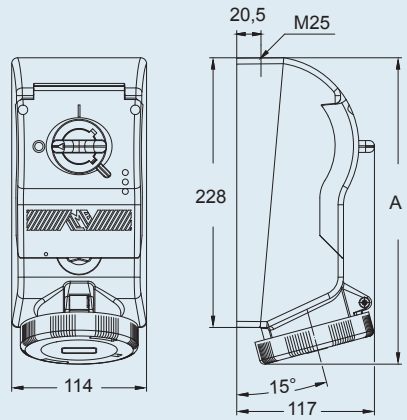
Poles	Frequency Hz	Voltage V	Earthing contact position h	part No.	Colour	part No.	Colour
2P+⏚	50 and 60	100 ÷ 130	4	**KI 1643 IB6**		**KI 3243 IB6**	
	50 and 60	200 ÷ 250	6	**KI 1663 IB6**		**KI 3263 IB6**	
	50 and 60	380 ÷ 415	9	**KI 1693 IB6**		**KI 3293 IB6**	
	50 and 60	480 ÷ 500	7	**KI 1673 IB6**			
	50 and 60	ins. transformer	12	**KI 16123 IB6**	s.t.	**KI 32123 IB6**	s.t.
	> 300 ÷ 500	> 50	2	**KI 1623 IB6**	*)	**KI 3223 IB6**	*)
	d.c.	> 50 ÷ 250	3	**KI 1633 IB6**	s.t.		
3P+⏚	50 and 60	100 ÷ 130	4	**KI 1644 IB6**		**KI 3244 IB6**	
	50 and 60	200 ÷ 250	9	**KI 1694 IB6**		**KI 3294 IB6**	
	50 and 60	380 ÷ 415	6	**KI 1664 IB6**		**KI 3264 IB6**	
	60	440 ÷ 460	11	**KI 16114 IB6**			
	50 and 60	480 ÷ 500	7	**KI 1674 IB6**			
	50	380	3	**KI 1634 IB6**		**KI 3234 IB6**	
	60	440	3	**KI 1634 IB6**			
	100 ÷ 300	> 50	10	**KI 16104 IB6**	*)	**KI 32104 IB6**	*)
	> 300 ÷ 500	> 50	2	**KI 1624 IB6**	*)	**KI 3224 IB6**	*)
3P+N+⏚	50 and 60	57/100 ÷ 75/130	4	**KI 1645 IB6**		**KI 3245 IB6**	
	50 and 60	120/208 ÷ 144/250	9	**KI 1695 IB6**		**KI 3295 IB6**	
	50 and 60	200/346 ÷ 240/415	6	**KI 1665 IB6**		**KI 3265 IB6**	
	50 and 60	277/480 ÷ 288/500	7	**KI 1675 IB6**			
	60	250/440 ÷ 265/460	11	**KI 16115 IB6**			
	50	220/380	3	**KI 1635 IB6**		**KI 3235 IB6**	
	60	250/440	3	**KI 1635 IB6**			
	> 300 ÷ 500	> 50	2	**KI 1625 IB6**	*)	**KI 3225 IB6**	*)

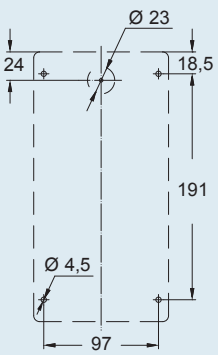
Legend

s.t. = Colour according to voltage

***)** Green may be used together with the colour of the operating range for frequencies above 60 Hz and up to a maximum of 500 Hz

dimensions in mm

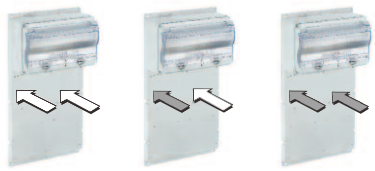




	poles	A
16A	2P+⏚	252
	3P+⏚	252
	3P+N+⏚	252
32A	2P+⏚	260
	3P+⏚	260
	3P+N+⏚	260

Modular assembled bases - DT

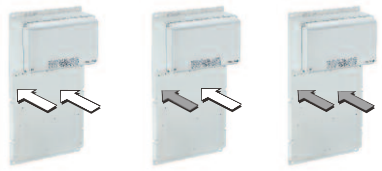
FC 2957 DTS **FC 2957 DTM** **FC 2957 DTL**



16A/32A 63A

Modular assembled bases - DC

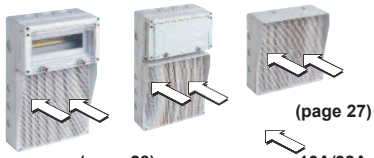
FC 2957 DCS **FC 2957 DCM** **FC 2957 DCL**



16A/32A 63A

Accessories for board mounting

FC 2542 RAT **FC 2542 RA** **FC 2525 MU**



(page 28) (page 27) 16A/32A

the dimensions shown are not binding
and may be changed without prior notice

KI ... IB6 interlocked socket-outlets and sectionable fuse carrier

- Compliant with EN 60309-1, -2 and -4
- Enclosures and inserts in insulating self-extinguishing thermoplastic material, RAL 7035 grey
- 16A and 32A types with bayonet cover
- Factory installed internal wiring
- Cable entry with threaded metric opening
- "ZG" series switch, with 63A rating
- Mechanical interlock that prevents: the switch from being turned on without the plug inserted and the plug from being removed while the switch is on
- Padlockable switch
- Compartment with sectionable fuse carrier, 22 x 58 mm (fuses not supplied) and clear inspection panel openable only when the switch is off.

63A
IP66 degree of protection

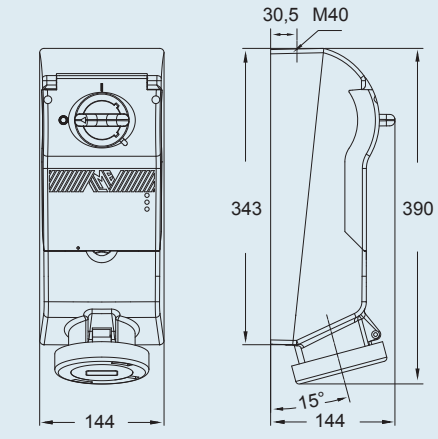
Poles	Frequency Hz	Voltage V	Earthing contact position h	part No.	Colour
2P+⏚	50 and 60	100 ÷ 130	4	**KI 6343 IB6**	
	50 and 60	200 ÷ 250	6	**KI 6363 IB6**	
	50 and 60	380 ÷ 415	9	**KI 6393 IB6**	
	50 and 60	480 ÷ 500	7	**KI 6373 IB6**	
	50 and 60	ins. transformer	12	**KI 63123 IB6**	s.t.
	> 300 ÷ 500	> 50	2	**KI 6323 IB6**	*)
	d.c.	> 50 ÷ 250	3		
3P+⏚	50 and 60	100 ÷ 130	4	**KI 6344 IB6**	
	50 and 60	200 ÷ 250	9	**KI 6394 IB6**	
	50 and 60	380 ÷ 415	6	**KI 6364 IB6**	
	60	440 ÷ 460	11	**KI 63114 IB6**	
	50 and 60	480 ÷ 500	7	**KI 6374 IB6**	
	50	380	3	**KI 6334 IB6**	
	60	440	3	**KI 6334 IB6**	
	100 ÷ 300	> 50	10	**KI 63104 IB6**	*)
	> 300 ÷ 500	> 50	2	**KI 6324 IB6**	*)
3P+N+⏚	50 and 60	57/100 ÷ 75/130	4	**KI 6345 IB6**	
	50 and 60	120/208 ÷ 144/250	9	**KI 6395 IB6**	
	50 and 60	200/346 ÷ 240/415	6	**KI 6365 IB6**	
	50 and 60	277/480 ÷ 288/500	7	**KI 6375 IB6**	
	60	250/440 ÷ 265/460	11	**KI 63115 IB6**	
	50	220/380	3	**KI 6335 IB6**	
	60	250/440	3	**KI 6335 IB6**	
	> 300 ÷ 500	> 50	2	**KI 6325 IB6**	*)

Legend

s.t. = Colour according to voltage

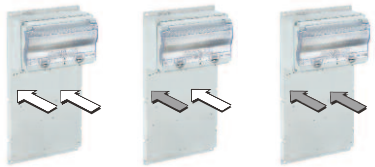
***)** Green may be used together with the colour of the operating range for frequencies above 60 Hz and up to a maximum of 500 Hz

dimensions in mm



Modular assembled bases - DT

FC 2957 DTS **FC 2957 DTM** **FC 2957 DTL**



16A/32A **63A**

Modular assembled bases - DC

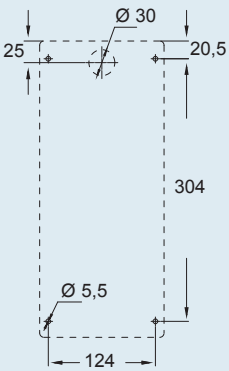
FC 2957 DCS **FC 2957 DCM** **FC 2957 DCL**

16A/32A **63A**

Accessories

KI MICRO **KI SCREW** **KI BLC**

(page 18)



the dimensions shown are not binding
and may be changed without prior notice

KI ... EB6 interlocked socket-outlets without fuse carrier

- Compliant with EN 60309-1, -2 and -4
- Enclosures and inserts in insulating self-extinguishing thermoplastic material, RAL 7035 grey
- 16A and 32A types with bayonet cover
- Factory installed internal wiring
- Cable entry with threaded metric opening
- "ZG" series switch, with 32A rating
- Mechanical interlock that prevents: the switch from being turned on without the plug inserted and the plug from being removed while the switch is on
- Padlockable switch
- Inspection panel, openable only when the switch is off.

16A
IP66 degree of protection

32A
IP66 degree of protection

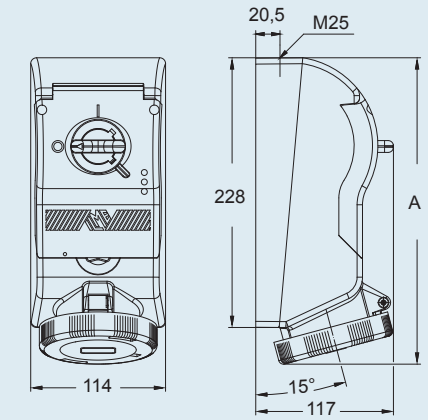
Poles	Frequency Hz	Voltage V	Earthing contact position h	part No.	Colour	part No.	Colour
2P+⏚	50 and 60	100 ÷ 130	4	KI 1643 EB6		KI 3243 EB6	
	50 and 60	200 ÷ 250	6	KI 1663 EB6		KI 3263 EB6	
	50 and 60	380 ÷ 415	9	KI 1693 EB6		KI 3293 EB6	
	50 and 60	480 ÷ 500	7	KI 1673 EB6		KI 3273 EB6	
	50 and 60	ins. transformer	12	KI 16123 EB6	s.t.	KI 32123 EB6	s.t.
	> 300 ÷ 500	> 50	2	KI 1623 EB6	*)	KI 3223 EB6	*)
	d.c.	> 50 ÷ 250	3	KI 1633 EB6	s.t.		
3P+⏚	50 and 60	100 ÷ 130	4	KI 1644 EB6		KI 3244 EB6	
	50 and 60	200 ÷ 250	9	KI 1694 EB6		KI 3294 EB6	
	50 and 60	380 ÷ 415	6	KI 1664 EB6		KI 3264 EB6	
	60	440 ÷ 460	11	KI 16114 EB6		KI 32114 EB6	
	50 and 60	480 ÷ 500	7	KI 1674 EB6		KI 3274 EB6	
	50	380	3	KI 1634 EB6		KI 3234 EB6	
	60	440	3	KI 1634 EB6		KI 3234 EB6	
	100 ÷ 300	> 50	10	KI 16104 EB6	*)	KI 32104 EB6	*)
	> 300 ÷ 500	> 50	2	KI 1624 EB6	*)	KI 3224 EB6	*)
3P+N+⏚	50 and 60	57/100 ÷ 75/130	4	KI 1645 EB6		KI 3245 EB6	
	50 and 60	120/208 ÷ 144/250	9	KI 1695 EB6		KI 3295 EB6	
	50 and 60	200/346 ÷ 240/415	6	KI 1665 EB6		KI 3265 EB6	
	50 and 60	277/480 ÷ 288/500	7	KI 1675 EB6		KI 3275 EB6	
	60	250/440 ÷ 265/460	11	KI 16115 EB6		KI 32115 EB6	
	50	220/380	3	KI 1635 EB6		KI 3235 EB6	
	60	250/440	3	KI 1635 EB6		KI 3235 EB6	
	> 300 ÷ 500	> 50	2	KI 1625 EB6	*)	KI 3225 EB6	*)

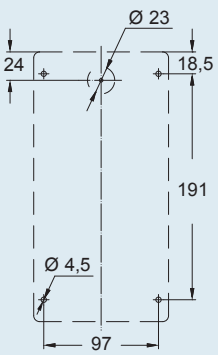
Legend

s.t. = Colour according to voltage

***)** Green may be used together with the colour of the operating range for frequencies above 60 Hz and up to a maximum of 500 Hz

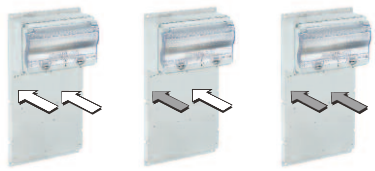
dimensions in mm





Modular assembled bases - DT

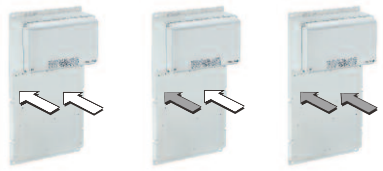
FC 2957 DTS **FC 2957 DTM** **FC 2957 DTL**



16A/32A **63A**

Modular assembled bases - DC

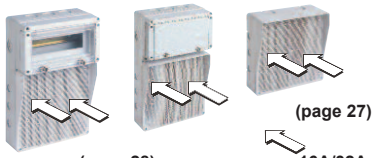
FC 2957 DCS **FC 2957 DCM** **FC 2957 DCL**



16A/32A **63A**

Accessories for board mounting

FC 2542 RAT **FC 2542 RA** **FC 2525 MU**



(page 28) (page 27) **16A/32A**

	poles	A
16A	2P+⏚	252
	3P+⏚	252
	3P+N+⏚	252
32A	2P+⏚	260
	3P+⏚	260
	3P+N+⏚	260

the dimensions shown are not binding
and may be changed without prior notice

KI ... EB6 interlocked socket-outlets without fuse carrier

- Compliant with EN 60309-1, -2 and -4
- Enclosures and inserts in insulating self-extinguishing thermoplastic material, RAL 7035 grey
- 16A and 32A types with bayonet cover
- Factory installed internal wiring
- Cable entry with threaded metric opening
- "ZG" series switch, with 63A rating
- Mechanical interlock that prevents: the switch from being turned on without the plug inserted and the plug from being removed while the switch is on
- Padlockable switch
- Inspection panel, openable only when the switch is off.

63A
IP66 degree of protection

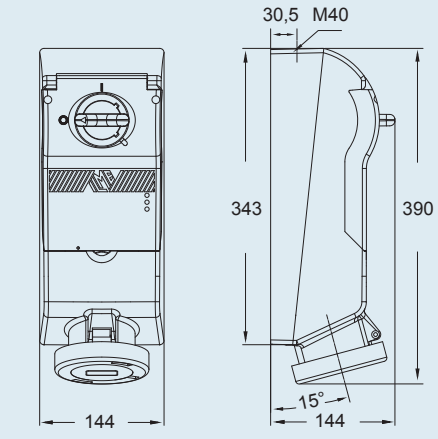
Poles	Frequency Hz	Voltage V	Earthing contact position h	part No.	Colour
2P+⏚	50 and 60	100 ÷ 130	4	**KI 6343 EB6**	
	50 and 60	200 ÷ 250	6	**KI 6363 EB6**	
	50 and 60	380 ÷ 415	9	**KI 6393 EB6**	
	50 and 60	480 ÷ 500	7	**KI 6373 EB6**	
	50 and 60	ins. transformer	12	**KI 63123 EB6**	s.t.
	> 300 ÷ 500	> 50	2	**KI 6323 EB6**	*)
	d.c.	> 50 ÷ 250	3		
3P+⏚	50 and 60	100 ÷ 130	4	**KI 6344 EB6**	
	50 and 60	200 ÷ 250	9	**KI 6394 EB6**	
	50 and 60	380 ÷ 415	6	**KI 6364 EB6**	
	60	440 ÷ 460	11	**KI 63114 EB6**	
	50 and 60	480 ÷ 500	7	**KI 6374 EB6**	
	50	380	3	**KI 6334 EB6**	
	60	440	3	**KI 6334 EB6**	
	100 ÷ 300	> 50	10	**KI 63104 EB6**	*)
	> 300 ÷ 500	> 50	2	**KI 6324 EB6**	*)
3P+N+⏚	50 and 60	57/100 ÷ 75/130	4	**KI 6345 EB6**	
	50 and 60	120/208 ÷ 144/250	9	**KI 6395 EB6**	
	50 and 60	200/346 ÷ 240/415	6	**KI 6365 EB6**	
	50 and 60	277/480 ÷ 288/500	7	**KI 6375 EB6**	
	60	250/440 ÷ 265/460	11	**KI 63115 EB6**	
	50	220/380	3	**KI 6335 EB6**	
	60	250/440	3	**KI 6335 EB6**	
	> 300 ÷ 500	> 50	2	**KI 6325 EB6**	*)

Legend

s.t. = Colour according to voltage

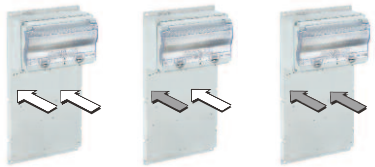
***)** Green may be used together with the colour of the operating range for frequencies above 60 Hz and up to a maximum of 500 Hz

dimensions in mm



Modular assembled bases - DT

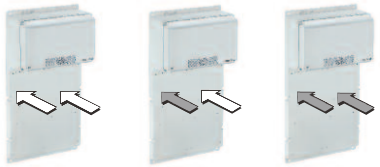
FC 2957 DTS **FC 2957 DTM** **FC 2957 DTL**



16A/32A **63A**

Modular assembled bases - DC

FC 2957 DCS **FC 2957 DCM** **FC 2957 DCL**

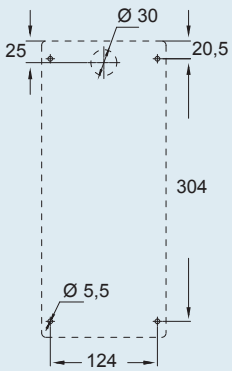


16A/32A **63A**

Accessories

KI MICRO **KI SCREW** **KI BLC**

(page 18)



the dimensions shown are not binding
and may be changed without prior notice

KI ... IB6L interlocked socket-switches, with fuse carrier and lights

- Compliant with CEI EN 60309-1, -2 and -4
- Enclosures and inserts in insulating self-extinguishing thermoplastic material, RAL 7035 grey
- 16A and 32A types with bayonet cover
- Factory installed internal wiring
- Cable entry with threaded metric opening
- "ZF" series switch, with 32A rating
- Mechanical interlock that prevents: the switch from being turned on without the plug inserted and the plug from being removed while the switch is on
- Padlockable switch
- Compartment with sectionable fuse carrier, 10 x 38 mm (fuses not supplied) and clear inspection panel openable only when the switch is off.

16A
IP66 degree of protection

32A
IP66 degree of protection

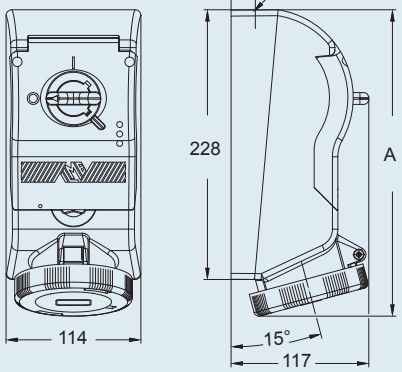
Poles	Frequency Hz	Voltage V	Earthing contact position h	part No.	Colour	part No.	Colour
2P+⏚	50 and 60	100 ÷ 130	4	KI 1643 IB6L		KI 3243 IB6L	
	50 and 60	200 ÷ 250	6	KI 1663 IB6L		KI 3263 IB6L	
	50 and 60	380 ÷ 415	9	KI 1693 IB6L		KI 3293 IB6L	
	50 and 60	480 ÷ 500	7	KI 1673 IB6L			
	50 and 60	ins. transformer	12	KI 16123 IB6L	s.t.	KI 32123 IB6L	s.t.
	> 300 ÷ 500	> 50	2	KI 1623 IB6L	*)	KI 3223 IB6L	*)
	d.c.	> 50 ÷ 250	3	KI 1633 IB6L	s.t.		
3P+⏚	50 and 60	100 ÷ 130	4	KI 1644 IB6L		KI 3244 IB6L	
	50 and 60	200 ÷ 250	9	KI 1694 IB6L		KI 3294 IB6L	
	50 and 60	380 ÷ 415	6	KI 1664 IB6L		KI 3264 IB6L	
	60	440 ÷ 460	11	KI 16114 IB6L			
	50 and 60	480 ÷ 500	7	KI 1674 IB6L			
	50	380	3	KI 1634 IB6L		KI 3234 IB6L	
	60	440	3	KI 1634 IB6L			
	100 ÷ 300	> 50	10	KI 16104 IB6L	*)	KI 32104 IB6L	*)
	> 300 ÷ 500	> 50	2	KI 1624 IB6L	*)	KI 3224 IB6L	*)
3P+N+⏚	50 and 60	57/100 ÷ 75/130	4	KI 1645 IB6L		KI 3245 IB6L	
	50 and 60	120/208 ÷ 144/250	9	KI 1695 IB6L		KI 3295 IB6L	
	50 and 60	200/346 ÷ 240/415	6	KI 1665 IB6L		KI 3265 IB6L	
	50 and 60	277/480 ÷ 288/500	7	KI 1675 IB6L			
	60	250/440 ÷ 265/460	11	KI 16115 IB6L			
	50	220/380	3	KI 1635 IB6L		KI 3235 IB6L	
	60	250/440	3	KI 1635 IB6L			
	> 300 ÷ 500	> 50	2	KI 1625 IB6L	*)	KI 3225 IB6L	*)

Legend

s.t. = Colour according to voltage

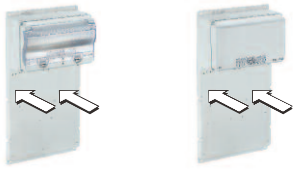
***)** Green may be used together with the colour of the operating range for frequencies above 60 Hz and up to a maximum of 500 Hz

dimensions in mm

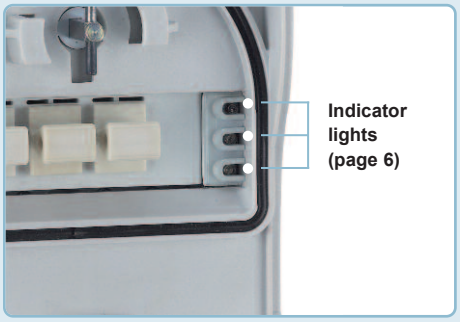


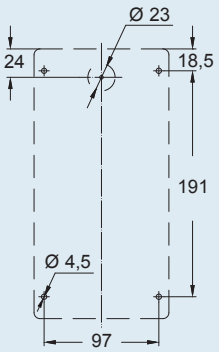
Modular assembled bases - DT / DC

FC 2957 DTS **FC 2957 DCS**



16A/32A





Accessories

KI MICRO **KI SCREW** **KI BLC**

(page 18)

	poles	A
16A	2P+⏚	252
	3P+⏚	252
	3P+N+⏚	252
32A	2P+⏚	260
	3P+⏚	260
	3P+N+⏚	260

the dimensions shown are not binding
and may be changed without prior notice

	microswitch	screw for cover padlock for switch
		 
Description	part No.	part No.
microswitch[1] indicating insertion status of plug and/or socket-outlet switch	**KI MICRO**	
screw for fuse carrier cover		**KI SCREW**
padlock for switch of socket outlets IB6/EB6 16A, 32A, 63A		**KI BLC16**

[1] **Microswitch technical characteristics**

- **Type:** C - NO - NC
- **Rating:** 10A cosφ 0.95 @ 250Va.c. 50Hz
  2A cosφ 0.45 @ 250Va.c. 50Hz
  3A (L/R = 5ms) @ 30Vd.c.
- **Operating temperature:**
  -20°C / +125°C
- **Expected mechanical life:**
  $3 \cdot 10^7$ switching cycles at 1Hz
- **Insulation resistance:**
  > 100MΩ
- **Discharge voltage between contacts:**
  > 1 $250V_{rms}$ @50Hz
- **Certificates:** IMQ, UL

the dimensions shown are not binding
and may be changed without prior notice

FC.. complementary parts and accessories for groups

- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- In self-extinguishing thermoplastic material, RAL 7035 grey
- Plates with fixing plugs and fixing screws for socket-outlets
- With sized DIN-rail EN 60715 with closing plates and fittings
- IP66/IP67 degree of protection according to EN 60529

modular base 2 x 16A/32A and case for modular equipment

modular base 1 x 16A/32A + 1 x 63A and case for modular equipment

Description	part No.	part No.
for socket-outlets N°. 2 IB6/EB6 16A/32A	**FC 2957 DTS**	
for socket-outlets N°. 1 IB6/EB6 16A/32A + 1 IB6/EB6 63A		**FC 2957 DTM**

see p. 12 for assembly configurations

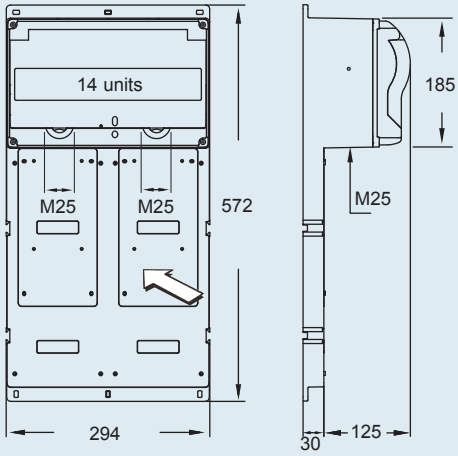
KI 16A/32A IB6 **(page 13)**

KI 16A/32A EB6 **(page 15)**

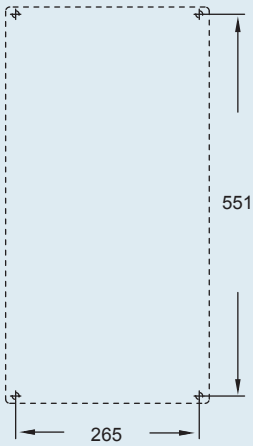
KI 63A IB6 **(page 14)**

KI 63A EB6 **(page 16)**

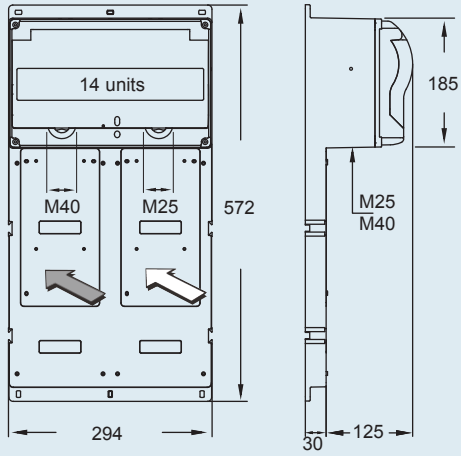
dimensions in mm



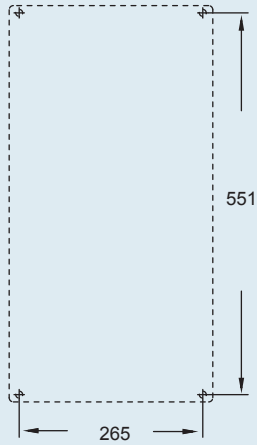
panel cut-out in mm



dimensions in mm



panel cut-out in mm



the dimensions shown are not binding
and may be changed without prior notice

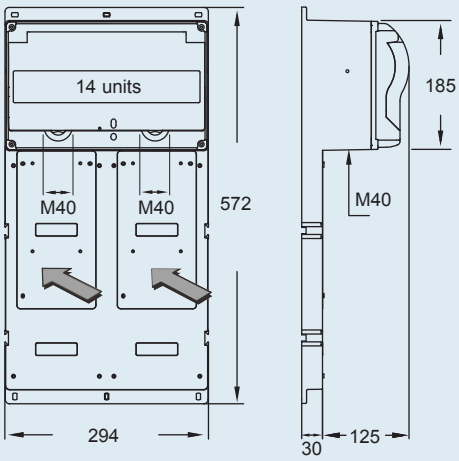
- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- In self-extinguishing thermoplastic material, RAL 7035 grey
- Plates with fixing plugs and fixing screws for socket-outlets
- With sized DIN-rail EN 60715 with closing plates and fittings
- IP66 degree of protection according to EN 60529

modular base 2 x 63A and case for modular equipment

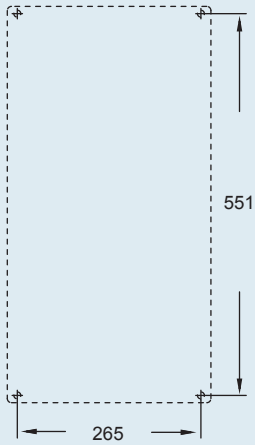
Description	part No.
for socket-outlets No. 2 IB6/EB6 63A	**FC 2957 DTL**

see p. 12 for assembly configurations

dimensions in mm



panel cut-out in mm



the dimensions shown are not binding
and may be changed without prior notice

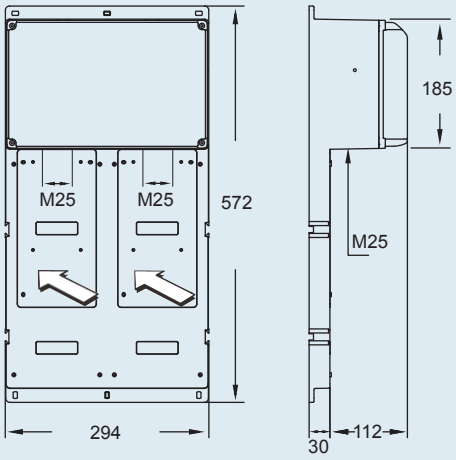
FC.. complementary parts and accessories for groups

- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- In self-extinguishing thermoplastic material, RAL 7035 grey
- Plates with fixing plugs and fixing screws for socket-outlets
- With sized DIN-rail EN 60715 with closing plates and fittings
- IP66 degree of protection according to EN 60529

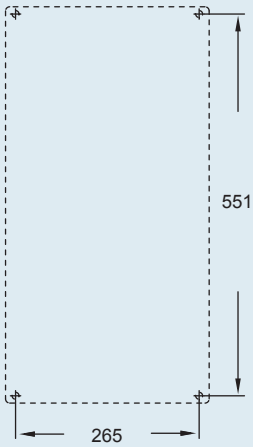
modular base 2 x 16A/32A and junction boxes

Description	part No.
for socket-outlets No. 2 IB6/EB6 16A/32A	**FC 2957 DCS**
for socket outlets No. 1 IB6/EB6 16A/32A + 1 IB6/EB6 63A	

dimensions in mm



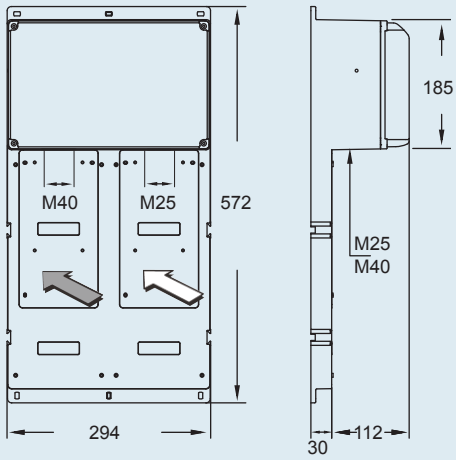
panel cut-out in mm



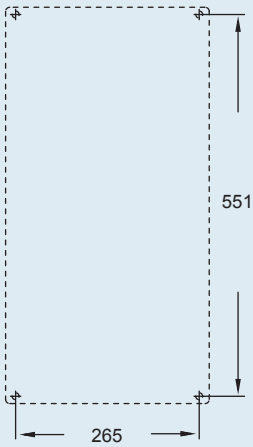
modular base 1 x 16A/32A + 1 x 63A and junction boxes

part No.
FC 2957 DCM

dimensions in mm



panel cut-out in mm



see p. 12 for assembly configurations

KI 16A/32A IB6 (page 13)

KI 16A/32A EB6 (page 15)

KI 63A IB6 (page 14)

KI 63A EB6 (page 16)

the dimensions shown are not binding and may be changed without prior notice

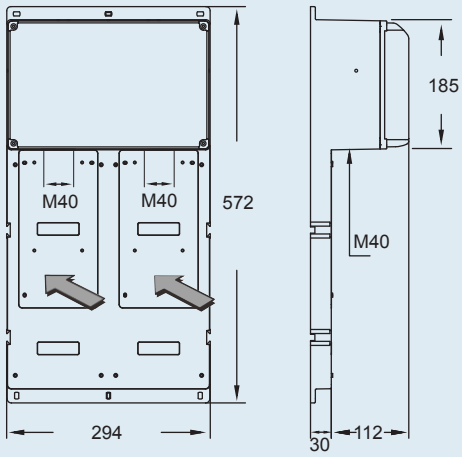
- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- In self-extinguishing thermoplastic material, RAL 7035 grey
- Plates with fixing plugs and fixing screws for socket-outlets
- With sized DIN-rail EN 60715 with closing plates and fittings
- IP66 degree of protection according to EN 60529

modular base 2 x 63A and junction box

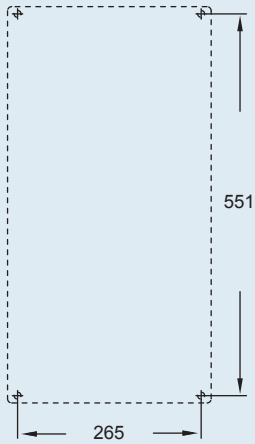
Description	part No.
for socket-outlets No. 2 IB6/EB6 63A	**FC 2957 DCL**

see p. 12 for assembly configurations

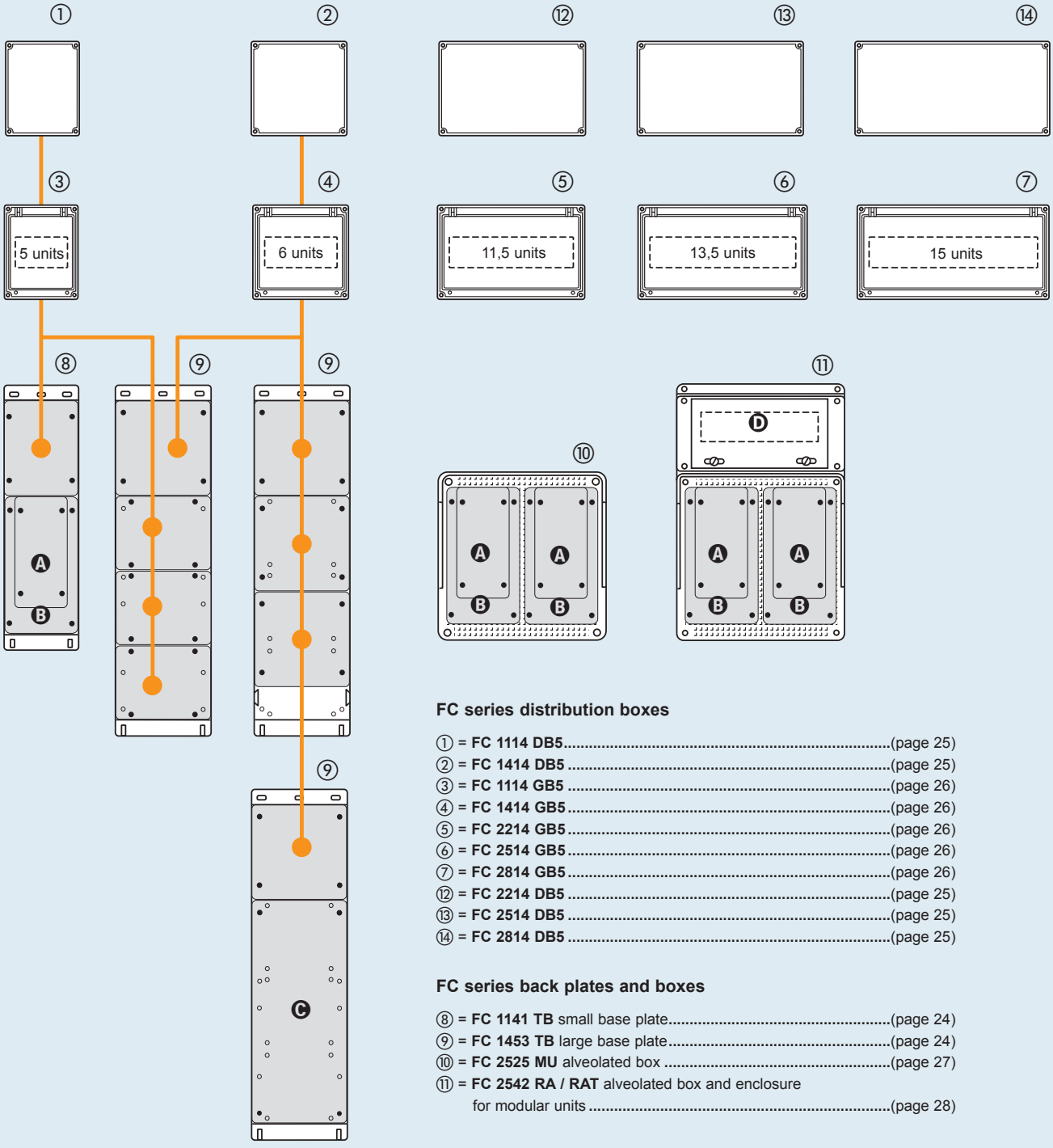
dimensions in mm



panel cut-out in mm



the dimensions shown are not binding
and may be changed without prior notice



FC series distribution boxes

FC series back plates and boxes

Socket-outlets and accessories for distribution systems in group configuration

Interlocked switched socket-outlets

Ⓐ = **PK...EB** interlocked socket-outlets without fuse carrier, 16A, IP44

Ⓑ = **KI...EB6** interlocked switched socket-outlets without fuse carrier, 16A and 32A, IP66
KI...IB6/IB6L interlocked switched socket-outlets with fuse carrier, 16A and 32A, IP66
IB6L interlocked switched socket-outlets with fuse carrier and indicator lights, 16A and 32A, IP66

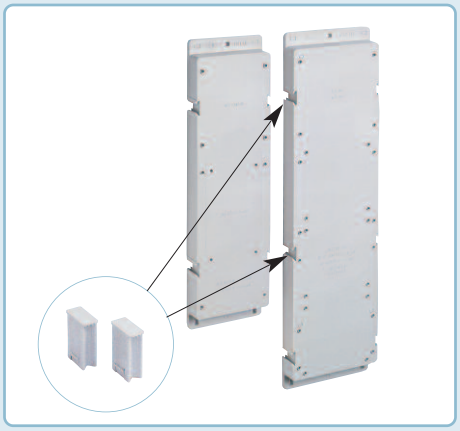
Ⓒ = **KI...RI5** interlocked switched socket-outlets with compartment for modular units, 16A, 32A and 63A, IP55
KI...EB6 interlocked switched socket-outlets without fuse carrier, 16A and 32A, IP66
KI...IB6 interlocked switched socket-outlets with fuse carrier, 63A, IP66
PB...T1 and **T2** socket-outlets with 230/24V~ transformer, 144VA, 16A, IP55

Complementary parts

Ⓓ = Spring-lock mounting modular devices for DIN-rail EN 60715, enclosure with hinged cover and padlocked locking pins

- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- In self-extinguishing thermoplastic material, RAL 7035 grey
- Plates with fixing plugs and fixing screws for socket-outlets

modular back plates
for the assembly of groups of socket-outlets



Description	part No.
Plates with fixing plugs - Small (115 x 415 x 30 mm) - Large (145 x 532 x 30 mm)	**FC 1141 TB** **FC 1453 TB**
fixing plugs for plates	**FC TXT**

see p. 12 for assembly configurations

dimensions in mm

Can be supplied with modular bases FC 2957 DT/DC

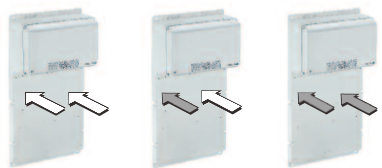
Modular assembled bases - DT

FC 2957 DTS **FC 2957 DTM** **FC 2957 DTL**

16A/32A **63A**

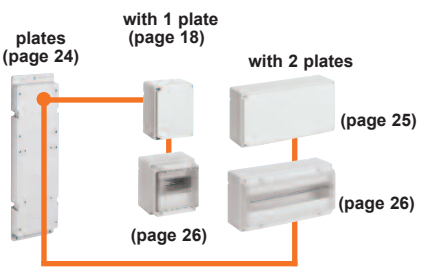
Modular assembled bases - DC

FC 2957 DCS **FC 2957 DCM** **FC 2957 DCL**

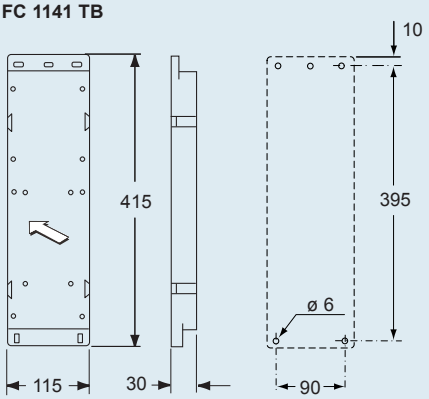


16A/32A **63A**

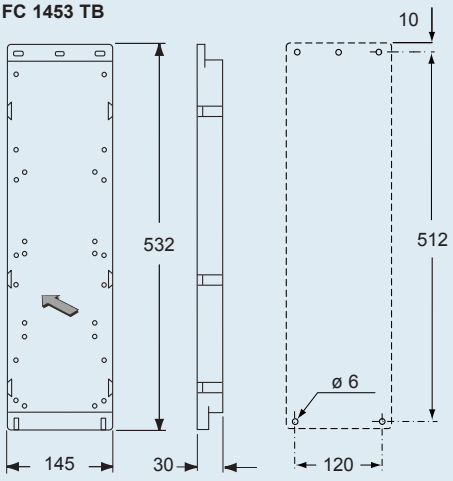
Accessories for group mounting



FC 1141 TB



FC 1453 TB



16A/32A **63A**

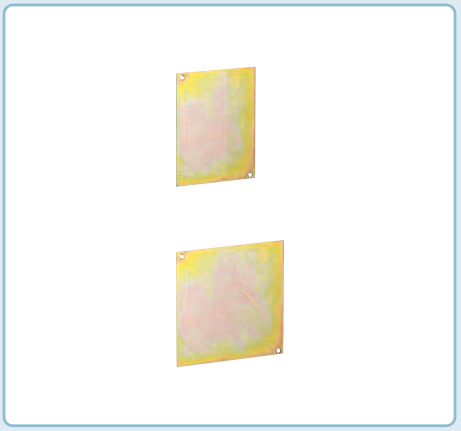
the dimensions shown are not binding
and may be changed without prior notice

FC ... complementary parts and accessories for groups

- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- In self-extinguishing thermoplastic material, RAL 7035 grey
- Boxes complete with fittings
- IP66/IP67 degree of protection (EN 60529)

distribution boxes - IP55 and IP66

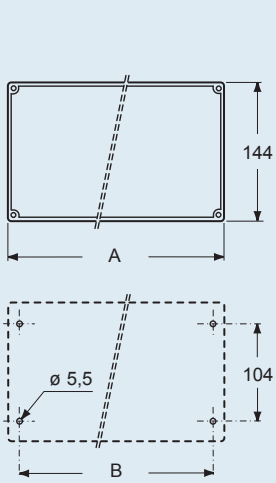
mounting plates for boxes



Description	part No.	part No.
For FC 1141 TB and FC 1453 TB plates - IP55 degree of protection	**FC 1114 DB5**	
For FC 1453 TB plates - IP55 degree of protection	**FC 1414 DB5**	
For 2 FC 1141 TB plates - IP55 degree of protection	**FC 2214 DB5**	
For FC 1141 TB + FC 1453 TB plates - IP55 degree of protection	**FC 2514 DB5**	
For 2 FC 1453 TB plates - IP55 degree of protection	**FC 2814 DB5**	
Mounting plates for distribution boxes - for FC 1114 DB and DB5 distribution boxes - for FC 1414 DB and DB5 distribution boxes		**FC 1114 PF** **FC 1414 PF**

see p. 12 for assembly configurations

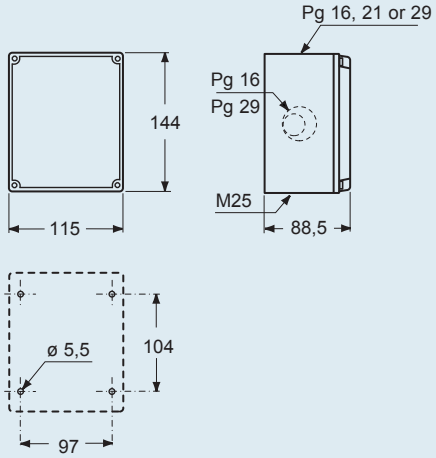
dimensions in mm



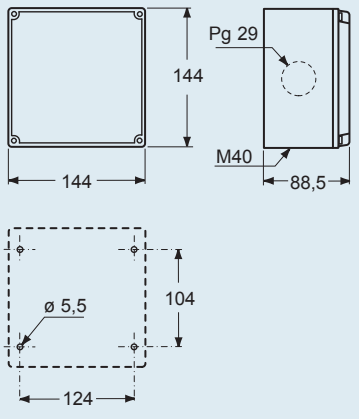
item	A	B
FC 2214 DB5	228	210
FC 2514 DB5	260	239
FC 2814 DB5	290	269

dimensions in mm

FC 1114 DB5

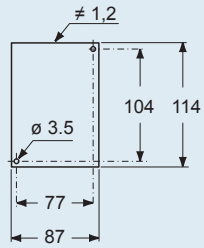


FC 1414 DB5

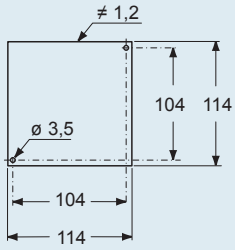


dimensions in mm

FC 1114 PF



FC 1414 PF



the dimensions shown are not binding
and may be changed without prior notice

- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- In insulating, self-extinguishing, thermoplastic material, RAL 7035 grey
- Boxes for modular units, with sized DIN-rail EN 60715, closing plates, fittings and fixing screws
- IP degree of protection according to EN 60529

boxes for modular units
single double

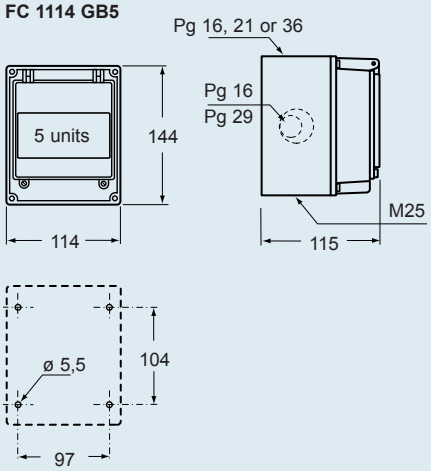
boxes for modular units
single double

Description	part No.	part No.
For FC 1141 TB plates - with enclosure for modular units (5 units) IP66	**FC 1114 GB5**	
For FC 1453 TB plates - with enclosure for modular units (6 units) IP55	**FC 1414 GB5**	
For 2 FC 1141 TB plates - with enclosure for modular units (11,5 units) IP66		**FC 2214 GB5**
For FC 1141 TB + FC 1453 TB plates - with enclosure for modular units (13,5 units) IP55		**FC 2514 GB5**
For 2 FC 1453 TB plates - with enclosure for modular units (15 units) IP55		**FC 2814 GB5**

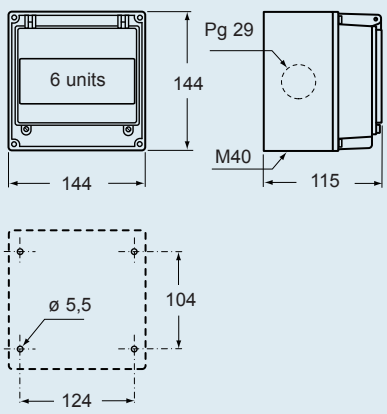
see p. 12 for assembly configurations

dimensions in mm

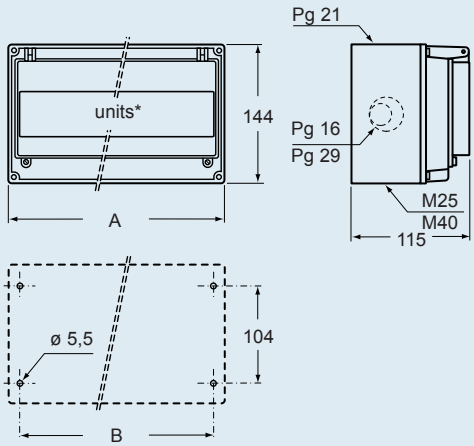
FC 1114 GB5



FC 1414 GB5



dimensions in mm



item	A	B	* units
FC 2214 GB5	228	210	11,5
FC 2514 GB5	260	239	13,5
FC 2814 GB5	290	269	15

the dimensions shown are not binding
and may be changed without prior notice

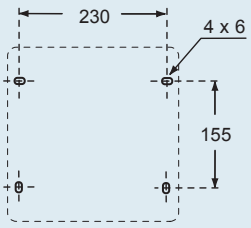
FC boxes for distribution boards

- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- Box, covers, frame and accessories in self-extinguishing thermoplastic resin, RAL 7035 grey
- Boxes are designed for wall- or flush-mounting and are supplied with all the necessary accessories
- The bottom of the box has an alveolated structure that allows devices to be installed in any position
- Sides with break-out entry holes Pg 16 / Pg 29
- Cover hinges mountable on all sides, to allow the opening of the cover to be oriented according to requirements
- IP55 degree of protection (CEI EN 60529)

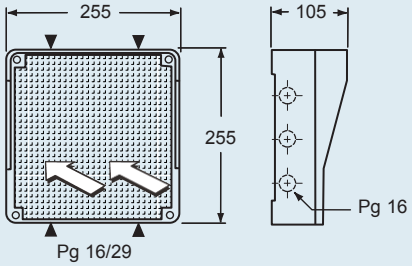
box for interlocked socket-outlets

Description	part No.
Consisting of: - FC 2525 MS base box - FC 2525 CR alveolated cover	**FC 2525 MU**

panel cut-out in mm



dimensions in mm



designed for mounting:

two interlocked socket-outlets:
- KI...IB6 types, 16A and 32A, IP55, with fuse carrier
- PK...EB6 types, 16A and 32A, without fuse carrier

KI 16A/32A IB6 **(page 13)**

KI 16A/32A EB6 **(page 15)**

the dimensions shown are not binding
and may be changed without prior notice

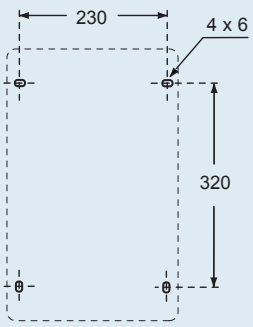
FC boxes for distribution boards

- Compliant with international standard IEC 60670 (Italian standard CEI 23-48) and with Italian draft standard CEI 23-49
- Box, covers, frame and accessories in self-extinguishing thermoplastic resin, RAL 7035 grey
- Boxes are designed for wall- or flush-mounting and are supplied with all the necessary accessories
- The bottom of the box has an alveolated structure that allows devices to be installed in any position
- Sides with break-out entry holes Pg 16 / Pg 29
- Cover hinges mountable on all sides, to allow the opening of the cover to be oriented according to requirements
- IP55 degree of protection (CEI EN 60529)

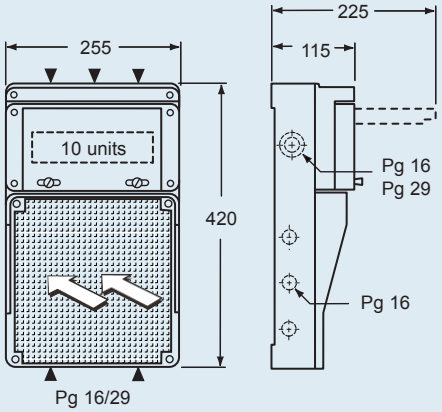
Mixed box for modular and alveolated equipment

Description	part No.	part No.
Base components - FC 2542 MS base box - FC 2525 CR alveolated cover ***Optional components:*** - 1 FC 1225 SR* or SRT** half-cover	**FC 2542 RA***	**FC 2542 RAT****

panel cut-out in mm



dimensions in mm



Legend:

*** = With opaque hinged cover**
**** = With transparent hinged cover**

designed for mounting:

Modular devices (10 units) in compartment with hinged cover and spring lockable pins, including sized DIN-rail EN 60715 (35 mm)

Two interlocked socket-outlets:
- KI...IB6 types, 16A and 32A, with fuse carrier
- KI...EB6 types, 16A and 32A, without fuse carrier

KI 16A/32A IB6 **(page 13)**

KI 16A/32A EB6 **(page 15)**

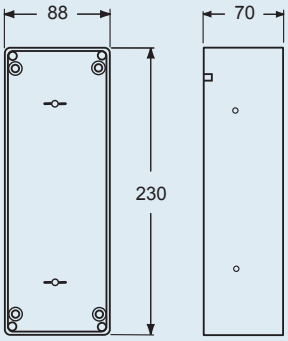
the dimensions shown are not binding
and may be changed without prior notice

- Enclosure in insulating, self-extinguishing, thermoplastic material, RAL 7035 grey
- IP55 or IP44 (CEI EN 60529) degree of protection (the degree of protection of the box varies according to the type of socket-outlet used)

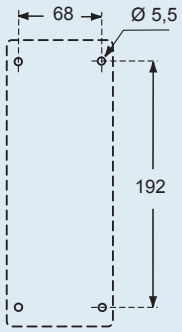
SQC enclosures for wall-mounting

Description	part No.
box for compartment covers	**SQC 923 CS**

dimensions in mm



panel cut-out in mm
(wall-mounting)



SQT 16220
- Socket-outlet with transformer 16A 2P 24V/250V IP55 usable with box SQC 923 CS

Modular assembled bases - DT

FC 2957 DTS **FC 2957 DTM** **FC 2957 DTL**

16A/32A **63A**

Modular assembled bases - DC

FC 2957 DCS **FC 2957 DCM** **FC 2957 DCL**

16A/32A **63A**

the dimensions shown are not binding
and may be changed without prior notice

compartment covers for SQC 923 CS

compartment covers for SQC 923 CS

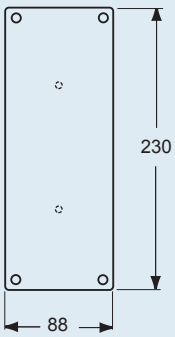
Description	part No.	part No.
dimensions 88 x 230 mm - smooth, with central hollows - smooth, designed for flush-mounted straight socket-outlets	**FM 923 CVU** **FM 923 CV**	
dimensions 88 x 230 mm - smooth, designed for French type socket-outlets Legrand 90335 - smooth, designed for 1 cover BT CQ 25502 and 1 socket-outlet type *Ⓐ PEW...PQF/PQ - with 2 BT CQ 25502 insert support covers and Schuko® socket outlet		**FM 923 CVF** **FM 923 PSK** **FM 923 RBT**

*Ⓐ For PLUSO socket-outlet (positioning with side opening of cover):

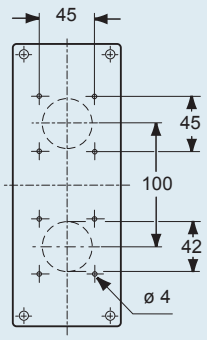
PEW	16x3 PQF	(16A, 2P+⏚)
PEW	16x4 PQF	(16A, 3P+⏚)
PEW	16x5 PQ	(16A, 3P+N+⏚)
PEW	32x3 PQ	(32A, 2P+⏚)
PEW	32x4 PQ	(32A, 3P+⏚)

dimensions in mm

FM 923 CVU (rear view)



FM 923 CV (rear view)

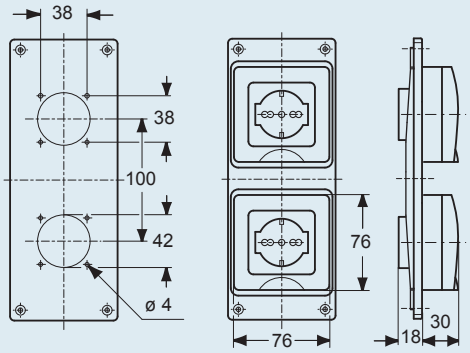


suitable (after drilling) for:
straight built-in socket-outlets;
- PB...PI types (mounting centring distance 45 x 45)

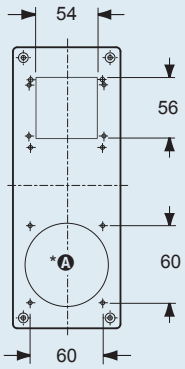
dimensions in mm

FM 923 CVF (front view)

FM 923 RBT (front view)



FM 923 RAV (front view)



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Notes

Notes

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