

Introduction

Modular sockets allow the connection of devices, tools or electrical and electronic non modular equipment in civil and industrial electrical switchboards.

ABB has a very wide range of modular sockets, which includes 38 models conforming to 7 national standards – Italian, French, German, English, Swiss, Australian and Argentine – suitable for use in around 180 countries.

The modular sockets have local quality approvals, attesting their conformity with applicable regulations.

In addition to the grey-coloured (RAL 7035) version there are three other colours (red, green and black) which are useful to indicate specific socket uses.

Versions with integrated voltage indicator lights and fuse complete the range. The ABB modular sockets range is available with the following options:

- Colour, to identify a specific socket use:
 - Green (RAL 6029), for example to indicate a dedicated upstream protection device
 - Red (RAL 3000), for example to indicate an UPS group that allows the socket to be used if the main power supply fails
- Black (RAL 7012), to match with industrial and automation devices
- Voltage indicator light
- Integrated fuse to selectively protect loads and maintain continuity of service
- IP30 protective cover (when closed)

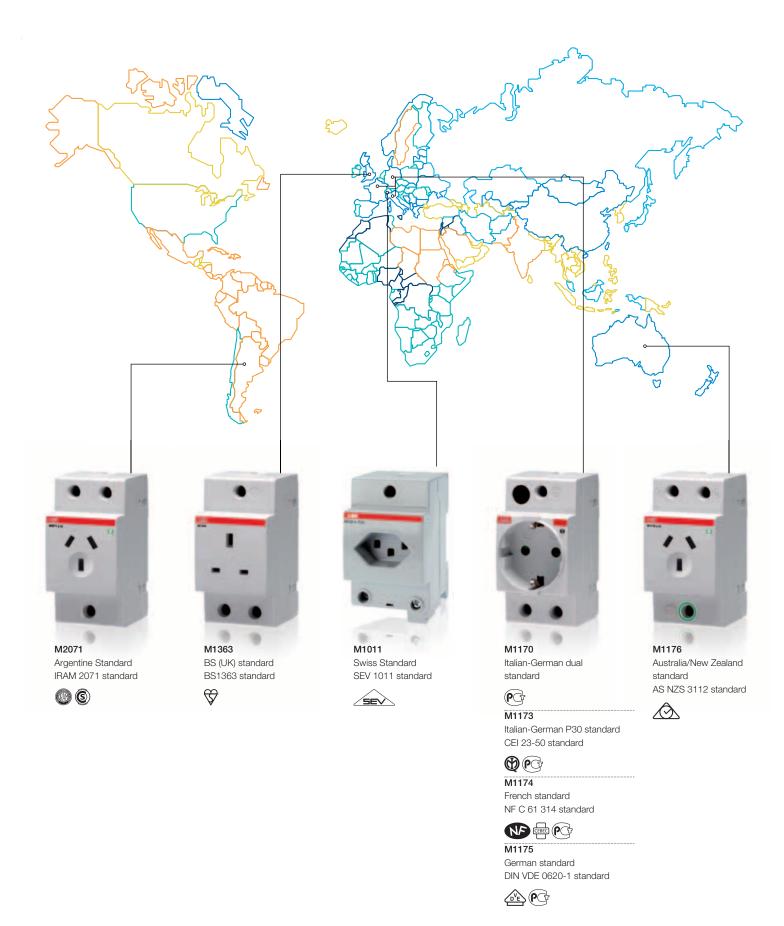








A world of solutions



Socket selection table Your solution in the blink of an eye

Series selection

	M1175	M1173	M1170	M1174	M1363	M1176	M2071	M1011
Europlug 10A	•	•	•	•				•
Italian 10 A		■	•					
Italian 16 A			•					
Schuko 10 A / 16 A	•	•	•					
French 10 A / 16 A	Pluggable but not earthed	Pluggable but not earthed	Pluggable but not earthed	•				
British 13 A					•			
Australian 10 A / 15 A						•		
Argentine 10 A							•	
 ·•	.4	L		L	4		L	4

	M1011-T13	M1011-T23	M1011-T15	M1011-T25
Swiss single-phase 10A	•	•	•	•
Swiss single-phase 16A		•		•
Swiss three-phase 10A			•	•
Swiss three-phase 16A				•

Model selection

	RAL 7035	RAL 6029	RAL 3000	RAL 7012
Italian dual standard				
○ ○ ○ M1170	2CSM210000R0701	2CSM220000R0701	2CSM230000R0701	2CSM240000R0701
Italian P30 standard				
(° ∘ °) M1173	2CSM110000R0701	2CSM120000R0701	2CSM130000R0701	2CSM140000R0701
M1173-L Indicator light	2CSM112000R0701	2CSM122000R0701	2CSM132000R0701	2CSM142000R0701
Schuko German Standard				
M1175	2CSM210000R0721	2CSM220000R0721	2CSM230000R0721	2CSM240000R0721
M1175-L Indicator light	2CSM212000R0721	2CSM222000R0721	2CSM232000R0721	2CSM242000R0721
M1175-FL Indicator light 6.3 A aM fuse	2CSM214000R0721	2CSM224000R0721	2CSM234000R0721	2CSM244000R0721
M1175-C P30 cover	2CSM211000R0721	2CSM221000R0721	2CSM231000R0721	2CSM241000R0721
French standard				
(°° o) M1174	2CSM110000R0711			
BS (UK) standard				
M1363	2CSM259343R0721			
M1363-L Indicator light	2CSM258163R0721			
Australian standard				
M1176-L10 10 A Indicator light	2CSM256983R0721			
M1176-L15 15 A Indicator light	2CSM259473R0721			
Argentine Standard				
M2071-L10 10 A Indicator light	2CSM257783R0721			
Swiss Standard				
M1011-T13 Single-phase 10 A Type 13	2CSM257783R0721			
M1011-T23 Single-phase 16 A Type 23	2CSM257783R0721			
M1011-T15 Three-phase 10 A Type 15	2CSM257783R0721			
M1011-T25 Three-phase 16 A Type 25	2CSM257783R0721			

Technical specifications and overall dimensions

Technical specifications

Rated voltage Un	[V]	250 V AC fo	0 V AC for all apart from M1011-T15 and M1011-T25 (400V AC)										
Rated current In	Rated current In [A] 10 for M1011-T13, M1011-T15, M1176-L10, M2071-L10												
		13 for M1163											
		15 for M11	15 for M1176-L15										
		16 for M10	11-T23, M1011-T25	5, M1170, M1 ⁻	173, M117	4, M1175							
Rated frequency	[Hz]	50/60	/60										
Power loss	[W]	0.6 for the	single-phase versior	าร									
Modules	[no.]	2.5 for M11	.5 for M1170, M1173, M1174, M1175, M1176, M2071										
		3 for M1011, M1163											
Safety shutters	······································	for all excep	ot M1011	***************************************					•				
Terminal type	•	positive saf	ety	•									
Cable section (ø min./max.)	[mm²]	2.5/16; exc	ept for M1011: abo	ve 25 mm² ma	ıx, below 1	6 mm² max							
Tightening torque	[Nm]	1.2; except	for M1011: 2.8 Nm	1									
Temperature: storage	[°C]	-40 - +70		•	•				•				
operating	[°C]	-25 - +35											
Protection degree		IP20 IP30	for versions with co	ver (when clos	ed)								
		M1011	M1175	M1173	M1170	M1174	M1363	M1176	M2071				
Reference standards		SEV 1011	DIN VDE 0620-1	IEC 23-50		NF C 61 314	BS1363	AS NZS 3112	IRAM 2071				
Approvals	•	SEV	VDE*, GOST	IMQ, GOST	GOST	LCIE, CEBEC, GOST	BSI	RCM	IRAM				

^{*} Available only on standard grey version M1175 and grey cover version M1175-C.

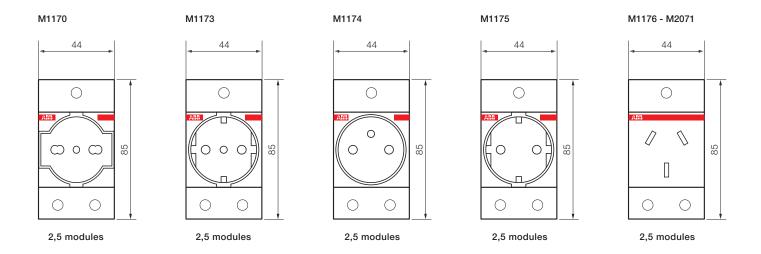
Indicator light technical specifications

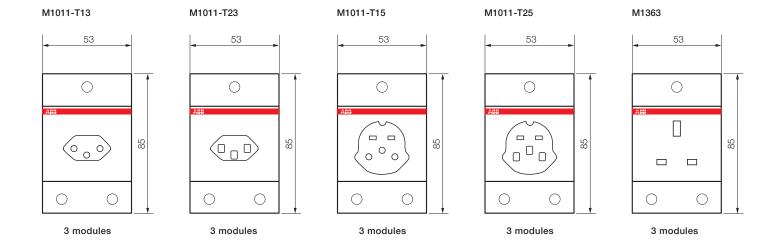
maioator light teorniloar speem	ioutions	
Туре	-	fluorescent torpedo-shaped lamp
Function		voltage presence indicator (M1363, M1173, M1175)
		plug inserted + voltage presence indicator (M1176, M2071)
Light colour		green
Power consumption	[W]	0.25

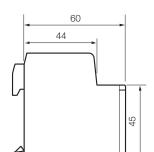
Fuse technical specifications

Туре		5 x 20 mm up to 6.3 A aM
Function		phase protection
Breaking capacity	[A]	1500 (H)
Reference standard		IEC EN 60127

Overall dimensions





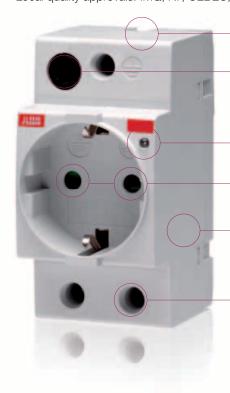


All versions Side view

Benefits

M1170, M1173, M1174, M1175 - 250V, 16 A, 2.5 modules Local quality approvals: IMQ, NF, CEBEC, VDE depending on the version.





Large cage terminals to ease security wiring

Integrated fuse: 5x20mm 6.3A aM fuse protecting phase

Indicator light: voltage presence indication

Safety shutters: socket holes protected

Coloured versions for specific uses



Screws: Pozidriv® screws, tightening torque 1.2 N

M1363 - 250 V, 13 A, 3 modules Local quality approval: BSI.





M1176, M2071 - 10 and 16A, 2.5 modules Local quality approval: OFT for M1176.









Large cage terminals to ease security wiring

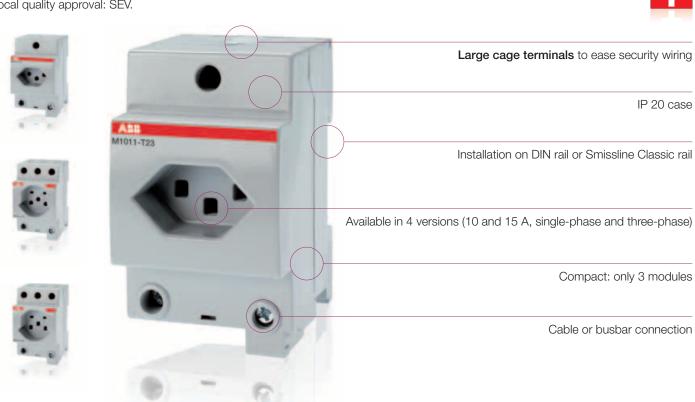
Indicator light: voltage presence and plug inserted indication

Safety shutters: socket holes protected

Screws: Pozidriv® screws, tightening torque 1.2 N

M1011 - 250 V and 400 V, 10 A and 15 A, 3 modules Local quality approval: SEV.





Country selection table

This table gives an indication of the voltage and frequency used in each country and the ABB modular sockets which can be installed. Installation rules and standards may change in each country: it is therefore important to check local regulations before installing the product.

Country	Vo	olt.	Fr	eq.	Modular sockets							
	110-130 V	220-250 V	50 Hz	2H 09	M1011	M1163	M1170	M1173	M1174	M1175	M1176	M2071
Afghanistan		•	•				•	•	•	•		
Albania		•	•	ļ			•	•	•	•	ļ	
Algeria			•	ļ			•	•	•	•	ļ	
Andorra			•	ļ			•	•	•	•	ļ	
Angola	1		•				•	•	•	•		
Dutch Antilles			•	•			•	•	•	•		
Saudi Arabia		•		•			•	•	•	•		
Argentina		•	•				•	•	•	•		•
Armenia		•	•				•	•	•	•		
Aruba	•	•		•			•	•	•	•		
Australia		•	•								•	
Austria		•	•				•	•	•	•		
Azerbaijan		•	•				•	•	•	•		
Bahrain	İ		•	ļ		•				ļ	İ	
Bangladesh	-		•	İ		ļ	•	•	•	•	İ	
Belgium		•	•						•			
Belize	•	•		•								
Benin	+	•										
Bhutan	+			<u> </u>							 	-
Belarus	†	•	•	ļ			•	•	•	•	ļ	
Bolivia		•		ļ				•	•	•	 	
Bosnia & Herzegovina	+	•	•				•	•	•	•		
Botswana	+			ļ		•			ļ		ļ	
Brazil							•		•	•		
Brunei	·											
Bulgaria	+							•				
Burkina Faso	+			<u> </u>				•			 	
Burundi	+			<u> </u>				•			 	-
Cambodia	+			 				•	•	•	 	-
Cameroon	+	•		 		ļ !		•	•	•	 	
Cape Verde	+			 		ļ		•	•	•	 	
Chad	-			ļ				•			ļ	ļ
Chile	-		•				•	•	•			
Cyprus	+	•			-	•		•			ļ	
Comoros	+	•		-			•	•	•	•	ļ	
Congo, Dem. Rep. (Zaire)	+	-	•	ļ			_	•	•	_	ļ	-
Congo, People's Rep. of	+		•	ļ	-		_	•	•	_	 	-
Ivory Coast	+		•	ļ	-	ļ	•	•	•	_	 	-
North Korea	+	•	ļ !		ļ	<u> </u>	•	•	•	•	 	-
South Korea	-			•			•	•	•	•		
Croatia		-		-				-	•		•	
Cuba		_					_	_	_	_	-	
Denmark	-			_			_	_	_	_		
Djibouti	-	-	-				-	-	-	-		

Country	Vo	lt.	Fre	eq.	Modular sockets							
	>	>										
	30	250	N	N	Ξ	က္က	0	က	4	72	9	Ε
	10-130 V	220-250 V	50 Hz	ΪO	110	=======================================	M1170	Ξ	=	M1175	M1176	M2071
Dominica	_	■	<u>Γ</u>	9	2	2	2	2	2	2	2	
			-			-	_					
Egypt UAE						_		_	-	-		
						•		_	_			
Estonia								-	-	-		
			_		_			-	_	_		
Ethiopia			_		•			_	_	-	_	
Fiji		_										
Philippines			_							_		
Finland			_					_		_		
France			-				_	_				
Gabon						<u> </u>	-	-		-		
Gambia						•						
Georgia							•			-		
Germany			-					-	-	-		
Ghana		-				•						
Gibraltar		•	•			•	•	•	-	•		
Jordan			•		•			•	•	-		
Greece		•	•					-	-	-		
Grenada												
Greenland		•	•				•	•	•	-		
Guadalupe			•							-		
Guatemala	•	•		•		•					•	
Guinea		•	•				•	-	-	-		
Guinea-Bissau			•							-		
Equatorial Guinea			•					-	•	-		
Guyana						•						
French Guyana			•					•		•		
Hong Kong						•						
India			_					•		-		
Indonesia			•			•		•	•	•		
Iran			•					•	•	-		
Iraq			•			•		•	•	•		
Ireland			-			•						
Iceland		•	•					•	•	•		
Isle of Man		•	•			•		•	•	•		
Balearic Islands			•					•		•		
Canary Islands								•		•		
Cook Islands		•									-	
Channel Islands		•	•			•						
Falkland Islands		•				•				•		
Faroe Islands		•					•	•	•			
Israel		•					•	•	•			
Italy			•						-	•		
Kazakhstan							-	•		•		

Country	Volt.		Freq.				Mod	lular	soc	kets	3	·····
	110-130 V	220-250 V	50 Hz	60 Hz	M1011	M1163	M1170	M1173	M1174	M1175	M1176	M2071
Kenya	-	•	■		_	•	_	_	_	_	_	_
Kyrgyzstan		•	•	<u> </u>	 !		•	•	•	•		
Kiribati		•	•	 							•	
Kuwait		•	•	ļ		•	•	•	•	•		
Laos		•	•	İ	ļ		•	•	•	•		
Azores		•	•	ļ			•	•	•	•		
Latvia		•	•				•	•	•	•		
Lebanon		•	•			•	•	•	•	•		
Lithuania	+		•	 	<u> </u>		•	•	•	•	<u> </u>	
Luxembourg	-	•	•	 	ļ		•	•		•		
Macau		•	•	 	ļ	•			ļ			
Macedonia			•	<u> </u>				•		•		
		_	-				_	_	_	_	ļ	
Madagascar Madeira	ļ -	_	-	ļ	ļ		-	-	_	-	}	
Malawi		-	-	ļ	<u>.</u>	•	_	_	_	_	<u>.</u>	
Maldives	-	-	-	ļ		-	•		-		-	
Malaysia		-	-	<u> </u>	_	-	-	-	<u> </u>	-	ļ	
Mali	-	<u> </u>	 	<u> </u>	ļ	-	_	_	_	_	ļ	
Malta		-	•	<u> </u>		_	•		•	•		
		-	•	ļ		•			_			
Morocco	-	_	_	ļ	ļ		_	_	_	_		
Martinique		•	-	ļ	ļ		-	-	_	-	ļ	
Mauritania Mauritius		•	-	ļ	ļ					•	ļ	
		•	•	ļ	ļ	•	•	•	•	•	ļ	
Moldova		•	-	ļ	ļ	ļ	-	•	•	-	ļ	
Monaco		•	•	<u> </u>			•	•	•	•	ļ	
Mongolia		•	•	ļ			•	•	•	•	ļ	
Montenegro		•	•	ļ			•	•	•	•		
Mozambique		•	•	<u> </u>	<u> </u>		•	•	•	•		
Myanmar (ex Burma)		•	•	<u> </u>			•	•	•	•		! ! !
Nauru		•	•								-	
Nepal		•	-				-	•	•	•		
Niger		•	•				•	•	•	•		
Nigeria		•	•			•						
Norway		•	•				•	•	•	•		
New Caledonia		•	•				•	•	•	•		
New Zealand		•	•								•	
Netherlands		•	•				•	•	•	•		
Oman		•	•	† 		•						
Pakistan		•	•	<u> </u>			•	•	•	•		
Papua New Guinea	1	•	•	<u> </u>					ļ		•	
Paraguay	<u> </u>	•	•	<u> </u>	<u> </u>		•			•		
Peru		•					•	•		•		
Poland		-	-				-	•	•	-		
Portugal							•					
Qatar	-			1								
United Kingdom		_	_			-						
Czech Republic		_	-	1		_						
Central African Republic		-	ļ	 	<u> </u>		•	•	-	•	ļ	
——————————————————————————————————————		_	•	!	!		_	_	_	_	!	

Country	Volt. Freq.			Volt. Freq. Modular sock			Modular sockets					
	>	>										
	10-130 V	220-250 V	Ż	7	Ξ	63	2	73	74	75	9/	7
	9	220	50 Hz	30 F	M1011	Ξ	Ξ	M1173	M1174	M1175	M1176	M20
Réunion Island		•	•		_	_	_	_	•	_	_	_
Romania		•	•				•	•	•	•		
Rwanda		•	•		•		•	•	•	•		
Russia		•	•				•	•		•		
Samoa		•									•	
American Samoa	•	•		•			•	•	•	•		
San Marino		•	•				•	•		•		
Senegal		•	•				•	•	•	•		
Serbia		•	•				•	•	•	•		
Seychelles		•	•			•						
Sierra Leone		•	•			•						
Singapore		•	•			•						
		•	•				•	•	•	•		
Syria Slovakia		•	•						•			
Slovenia		•	•				•		•	•		
Somalia	•	•	•				•		•	•		
Spain		•					•	•	-			
Sri Lanka		•				•						
St. Kitts and Nevis		•		•		•						
St. Lucia		•				•						
St. Vincent		•	•			•	•	•	•	•	•	
Sudan		•	•				•	•	•	•		
Suriname	•	•		•			•	•	•	•		
Sweden		•	-				-	•	-	-		
Switzerland		•	•		•		•	•	•	•		
Tahiti	•	•		•			•		•	•		
Tajikistan		•	•				•	•	•	•		
Tanzania		•	•			•						
Thailand		•	-				•	•		-		
East Timor		•	•				•	•	•	•	•	
Togo		•	•				•	•	•	•		
Tonga		•	•								•	
Tunisia		•	•				•	•	-	•		
Turkey		•	•				•	•	-	•		
Turkmenistan		•	•				•	•	•	•		
Ukraine		•	•				•	•	•	•		
Uganda		•	•			•						
Hungary		•	•				•	•	•	•		
Uruguay		•	•				•	•	•	•		
Uzbekistan		•	•				•	•	•	•		
Vietnam	•	•	•			•	•	•	•	•		
Yemen, Rep. of		•	•			•						
Zambia		•	•			•	•	•	-	•		

Main countries are highlighted.

Application examples

Use of coloured sockets

Coloured sockets allow a special use to be indicated without having to apply identifying labels. This indication is clear and visible at large distances, even in low lighting.

Red sockets

Red sockets indicate an upstream UPS which ensures continuity of service even in the case of temporary black-outs.

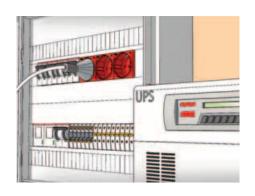
Green sockets

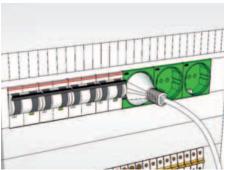
Identify the presence of a dedicated protection device on the socket. Even in the case of a fault on the line, continuity of service is maintained on the other lines.

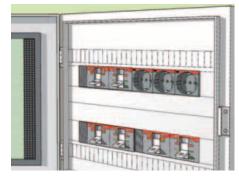
Black socket

The anthracite grey colour allows the socket to be installed in industrial switchboards, maintaining the colour scheme of other ABB components.

These socket colour usage schemes are only suggested; the colours may also be associated with other uses.







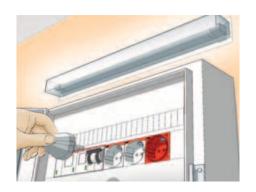
Use of sockets with indicator light

Operating principle

Coloured modular sockets are used when a clear indication of a specific use of the socket is required, clearly distinguishing it from other sockets in the switchboard. The indicator light also indicates whether supply voltage is present, making it clear if a socket is powered or not.

Installation example

As shown in the diagrams, non modular devices can be plugged directly into the electrical switchboard using a modular socket. It is possible to use a red socket to indicate that the outlet is powered by a UPS and should therefore only be used in emergencies. Using a socket with an indicator light also provides a clear indication that the upstream power supply is present.







Use of fused sockets

Operating principle

Fused modular sockets are used when continuity of service is requested. With an integrated fuse protecting the phase, they avoid the related breaker to trip if a fault occurs in the connected load.

Installation example

As shown in the diagrams, non modular devices can be plugged directly into the electrical switchboard using a modular socket. If the connected device is not working properly, there is the risk that the whole electrical system will be taken offline by the breaker tripping out.

The fuse integrated in the socket can protect against short circuits and overloads before this happens, ensuring quality of service.





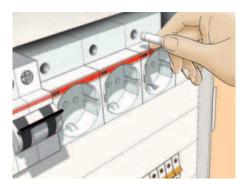


ABB modular sockets Do your customers a favour

By installing an ABB modular socket in every electrical switchboard, you will facilitate maintenance operations, supplying a complete and customised switchboard even for your customers on the other side of the world.

You just need one of these to make sure you are never cut off at the switchboard again!



Frequently asked questions

Why do modular sockets follow local rules?

Sockets are "local" products, which must adhere to the standards of the place where they are used. Over time, a large number of standards was created, and this diversity has remained almost unchanged to this day. An attempt to unify European sockets was made in 1986 (IEC 60906-1), which ended without changes in use being made in Europe but was partially adopted in Brazil and South Africa.

How many socket standards are there? Is it possible that a country uses more than one standard? In this case, how can I choose the correct solution?

There are 13 socket standards, and in many countries more than one standard is in use. Importation of equipment, such as household electrical appliances, has often made it necessary to install foreign standard sockets able to accommodate the plugs this equipment is fitted with.

You can refer to the table in this brochure which gives all ABB solutions for each country in order to ensure the correct use. To guarantee maximum safety, ask to your ABB contact.

Why do modular sockets not have the CE mark?

ABB modular sockets are not "CE" marked as this is not required by European Directive 2005/95/EC, which indicates (Annex II) that products identified as "Domestic plugs and sockets" are out of the scope of the european directive.

Modular sockets are included into this category and cannot, therefore, receive the "CE" mark.

Why does the M1170 modular socket not carry any quality mark?

This "dual" socket accommodates different types of plugs: Europlug, Italian 10A/16A and the German Schuko. The shutters for the pins of these plugs on the M1170 modular socket are larger than the other socket models (M1173 and M1175, both with quality markings) in order to accommodate each type of plug. The product's geometry therefore makes conformity with the different standards impossible, and as a consequence it is not certified by the standards.

Why do the names of the connections change from socket to socket?

Product marking indications are defined by the applicable product standards. In table 1 you will find a summary of the markings for each model.

Why do the rated current values change for each socket model?

The rated currents of the sockets are defined by local standards. In general, the current values fall between 10 A and 20 A. It is always advisable to connect equipment with a high power consumption using sockets rated at a minimum of 10 A. Table 2 lists the voltage, current and maximum power supply for each single-phase socket.

What are safety shutters and what kind of protection do they offer?

These are insulating components located in front of the holes for the plug pins (and therefore the socket's contacts); they create a barrier between the accessible part of the socket and the live parts. They create an obstacle to inserting objects which could create a danger for untrained users: metal objects, wires, screwdrivers etc.

Safety shutters are designed to open only when a plug is inserted, therefore offering additional safety.

Modular socket	Phase connection	Neutral connection	Earth connection
M1170, M1173, M1174, M1175	These sockets are not polarised:	•	Earth symbol
unfused	Phase and neutral can be inverted, they	are not marked on the product.	
M1175 fused	No marking	"N" marking	Earth symbol
M1363	"L", for live	"N", for Neutral	Earth symbol
M1176	"A", for Active (Live)	"N", for Neutral	Earth symbol + green
			circle around the connection
M2071	"MA" for "Marron", brown in Spanish	"AZ"for "Azul", blue in Spanish	"V-A" for "Verde Amarillo",
			green-yellow in Spanish
M1011	Single-phase versions: "L"	"N", for Neutral	Earth symbol
	Three-phase versions: "L1, L2, L3"		

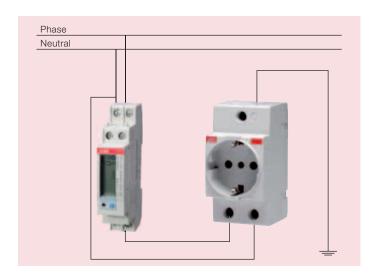
Table 1

Socket model	Single-phase rated voltage	Rated current	Max power output
	[V]	[1]	[kW]
M1175-FL	250	6.3	1.57
M1176-L10, M2071-L10, M1011-T13	250	10	2.5
M1363	250	13	3.25
M1176-L15	250	15	3.75
M1170, M1173, M1174, M1175 (unfused), M1011-T23	250	16	4

Table 2

How can I measure the energy consumed at a modular

C11 energy meter is ideal to measure the energy consumed at a modular socket.



Can I connect modular sockets in any direction in a switchboard (vertical, horizontal etc.)?

Modular sockets can be installed in any position in an electrical switchboard to meet the needs of customers around the world.

When connecting a drill to an M1175-FL modular socket, the integrated protection fuse blew. Can I replace it with a 16 A fuse to avoid this problem?

The fuse in the M1175-FL must be replaced with one of the same specification; you should, in any case, check that the device is not faulty before reconnecting it.

The 6.3 A rating allows it to blow selectively when a fault occurs, before the line protection trips out. It is the right compromise between power output and selective protection.

In this case, the integrated protection in the socket allowed continuity of service to be maintained on the other lines!

There are two types of Schuko plug which differ in the earth contact; this can be a protruding pin in the socket or side connections. Is there a socket suitable for both plug models?

The French plug standard provides for the earth connection with a protruding pin on the socket, while the German standard specifies side earth connections.

The minimal difference between the two standards is an opportunity for standardisation, and French-German standard plugs were created with both types of earth connection. In general, new equipment on sale in France is supplied with the French-German Schuko plugs, however it is necessary to provide for the connection of other socket models. If doubts should arise on the type of plug to connect, it will be necessary to install both socket models.

The following table indicates the different cases:

	French	German Schuko socket M1175
	Schuko socket	
	M1174	
French	Ok	No, or else without earth
Schuko plug		connection
German	No	Ok
Schuko plug		
French-German	Ok	Ok
Schuko plug		

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