

# AMPCO

## INDUSTRIAL PLUGS and SOCKETS

*Your Local African Connection*



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## ■ ■ Company Introduction

Ampco has been a significant Electrical Plug and Socket provider with an extensive range of products branded inhouse “Ampco” as far back as 1974.

In fact, Ampco was at the time the first company in Africa to manufacture plugs and sockets, as understood today, specified in line with the National Standards SANS/IEC 60309 P1 + 2.

Ampco by all standards in today’s terms, is a well-known and reliable product also considered as the largest leader in the supply commodities of Industrial Plugs and Sockets in Africa.

### Research and Development

Central to our manufacturing philosophy is a commitment to constantly improve our products. We are continually developing both the design and construction of our range, with particular emphasis on safety, performance and durability.

### Manufacturing Standards and Testing

All our plugs and sockets undergo rigorous inspections throughout production processes and are manufactured in accordance with our ISO 9001 Quality Management Certification.

### Design

All our products in this catalogue have been ISO rated and developed by experienced designers. This level of control ensures that all products are designed with both ease of installation and safety in mind, whilst complying with all current specifications, standards and wiring regulations. Products in this catalogue are not binding and can change without prior notice.

### Comprehensive Range

To complement our locally manufactured plugs and sockets we represent various well known branded manufacturers with a complimentary range of supplementary products. Therefore, we are in a position to supply virtually any plug and socket requirement “ex stock”.

### Technical Advice and Field Support

Our team of specialists are able to offer a full range of support services including:

- Technical advice and back-up
- Applications and installation assistance
- Field Sales technical advice
- Our sales team is always ready to visit customers and to provide any installation guidance and advice.



**SAFETY**



**RELIABILITY**



**DURABILITY**



**LOCALLY MANUFACTURED**

# CEE Plug and Socket Requirements

**Position of the earth contact and insert**

Plugs and sockets with rated voltages above 50 V must have an earth contact.

The sockets have a keyway and the plugs have a nose (key), which engages in this. The contact pin or contact tube for the earth connection has, depending on the required electrical values, a specific position with respect to the key or keyway which is fixed on the protective collar. The various positions are designated by clock face positions as shown on page 6.

Inadvertent incorrect insertion, which can result in danger to the user, is prevented as the contact pin for the earth connection has a larger diameter than the contact pins for the phase connections, which means that it cannot be inserted in the phase contact tubes.








It must be impossible for the user to change the position (relative to the keyway) of the earth contact or of any neutral contacts which exist.

It must also be impossible to interchange male and female inserts.

**Colour Coding**

The rated (operating) voltage of our CEE round plugs and sockets is indicated by a colour code. This colour code complies with the recommendation of IEC309-1E. For the standard colour we chose electric orange on all metal and grey for all PVC housings and / or code colour, depending on whether the complete outer surface or only a part (for example the flap) is in the coded colour.

Special requests with respect to colours can be considered for large quantities and/or at extra cost.

Rated (operating) voltage	Colours
20 to 25 V	 Violet
40 to 50 V	 White
100 to 130 V	 Yellow
200 to 250 V	 Blue
380 to 480 V	 Red
500 to 690 V	 Black
Over 60 to 500 Hz	 Green

**Breaking capacity**

All our CEE plugs and sockets comply with the regulations of IEC-DIN EN 60309-1:1999, §20 "breaking capacity" even at a rated voltage of 500V AC, 50Hz.

**Moisture Protection**

With no plugs inserted, socket-outlets and connectors provide the necessary moisture protection by means of a flap which is firmly attached to the device.

For the watertight versions, a bayonet system has been standardized in order to simplify use even under severe working conditions.

CEE plugs and sockets with rated currents exceeding 63A must be watertight.

**Note: In accordance with the latest IEC regulations for industrial plugs and sockets, only IP44 and IP67 applies. No other IP ratings are specified.**



**Markings, Symbols**

The following information must be marked on the accessories in such a way, that it is easily visible during normal use>

Rated current in amperes, rated (operating) voltage in volts, symbol for current type, manufacturer's name or trademark, type reference, symbol for moisture protection (if applicable), symbol indicating the position of the earth contact or the minor keyway.

The maximum rated voltage must be marked on the insert.

**If symbols are used, they must be as follows:**

Amperes	A
Volts	V
Alternating current	~
Direct current	— — — — — — — — — —
Splashproof design	 or IP44
Watertight design	 or IP67
Position of earth contact, e.g.	6 h

The rated current is the current value assigned to the device by the manufacturer. The maximum rated voltage is the voltage specified by the manufacturer on the plug or socket (the line voltage in the case of three-phase supply). The rated (operating) voltage is the nominal voltage of the power source for which the accessory is to be used.

**Interlocking**

An interlock is a mechanical or electrical device which ensures that a plug cannot be inserted or withdrawn with the voltage switched on.

A mechanical interlock must be provided in 16 A and 32 A AC plugs and sockets with rated operating voltages above 500 V. Plugs and sockets rated 63 A and above with a rated voltage of more than 42 V must have provisions for an electrical interlock in the form of pilot contacts.

## MASC Certification Mark

**All products in this Catalogue marked with a MASC label are certified by MASC To SANS 1239:2004 Plugs and Socket - outlets and couplers for industrial purposes**



The Mark Permit Logo shall only be used in accordance with instructions provided. It shall not be used in such a manner that it compromises the integrity of MASC.

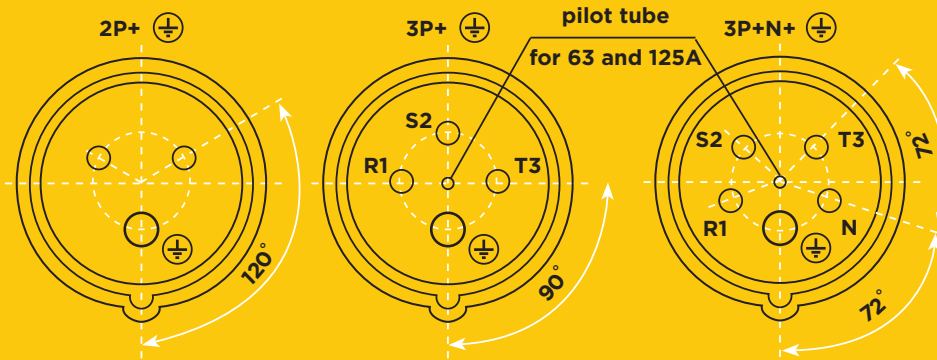
The MASC Logo may be used by manufacturers and / or repairers who has complied the requirements of the Mark Scheme and who has been issued with a Mark Permit and appropriate Product List.

# AMPCO CEE Voltage Clock

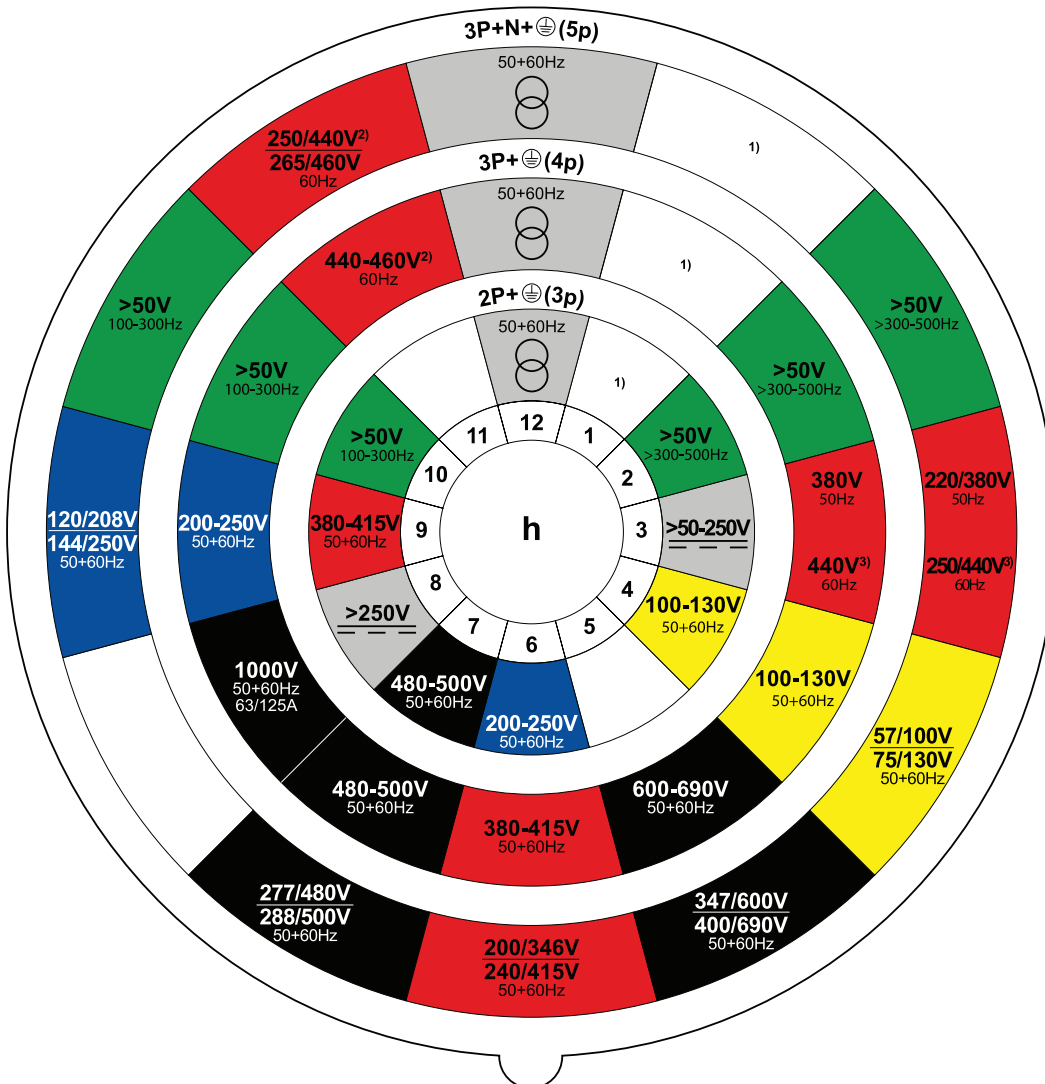
According to SANS / IEC -DIN EN 60309-2:1998  
Industrial Plugs and Sockets

Position and numbering sequence of socket-tubes

Front View of CEE Socket



The voltage (V) and frequency (Hz) determines the hour-position of the earth according to IEC 60309-2



The 2, 3 and 10-hour position are standard only with 16 and 32 Amp.  
Where no frequency is shown, the standard 50-60 Hz applies.

**\*Clock position is not normed and free for use for special applications.**





# CEE Plugs Tops and Socket Outlets - Metal

## General Information

The following range AMPCO CEE round tupe plugs and sockets in metal are well known in South Africa mines and industry. They confirm to the National and International Standards SANS/IEC 60309-1+2, 1999 and all our standard items carry the MASC mark authorisation.

They are available in all standardised pin and voltage configurations (see AMPCO CEE Voltage Clock).

We definitely reccommend this robust type of plug and socket where excessive heat and rough handling, like in steel works or mines underground, is applied.



## 06 CEE Plug Top and Socket Outlet - Metal

- 08** 63A 400/500V CEE Plug Top IP67  
 125A 400/500V CEE Plug Top IP67  
 32A 400/500V CEE Switched Socket Outlet IP44  
 32A 400/500V CEE Switched Socket Outlet IP44  
 - With Integrated Circuit Breaker
- 09** 32A 400/500V CEE Switched Socket Outlet IP44  
 - With Integrated Earth Leakage  
 63A 400/500V CEE Switched Socket Outlet IP44  
 63A 400/500V CEE Switched Socket Outlet IP44  
 - With Integrated Circuit Breaker  
 63A 400/500V CEE Switched Socket Outlet IP44  
 - With Integrated Earth Leakage Circuit Breaker
- 10** 63A 400/500V CEE Switched Socket Outlet IP44  
 - With Integrated Earth Leakage  
 125A 400/500V CEE Switched Socket Outlet IP67  
 125A 400/500V CEE Switched Socket Outlet IP67  
 - With Integrated Circuit Breaker  
 125A 400/500V CEE Switched Socket Outlet IP67  
 - With Integrated Earth Leakage Circuit Breaker
- 11** 125A 400/500V CEE Switched Socket Outlet IP67  
 - With Contactor & Overload  
 250A 500V CEE Switched Socket Outlet IP67  
 - With ITop Connection Box for Bottom Cable Entry  
 250A 500V CEE Angled Plug Top IP67

## General Description and Application

AMPCO CEE round type plugs and sockets are manufactured in South Africa out of aluminium, to meet the requirements of mines (underground and surface), steel works, ship yards, etc., in fact any place where virtual indestructability is a prerequisite.

All plugs and sockets are manufactured to SANS/IEC 60309-1+2, 1999 and are compatible with other makes of same specifications.

Housing is epoxy powder coated, to give an attractive appearance and a lasting finish, even in coastal atmospheres.

All springs and screws are cadmium plated. Inserts are manufactured of brass, inserted into Amplast insulation (unbreakable and heat resistant). Switch sockets are splash proof protected for outdoor installation.

**Note: AMPCO metal plugs and sockets are the very best technical option available to ensure a professional electrical installation at all times.**





# CEE Plug Top and Socket Outlet - Metal

\*PG Refer to technical section page.



CEE PLUG TOP METAL IP67

Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	67	6	3P+E		A1108	48A
				3P+N+E		A1117	48A
63A	500	67	7	3P+E		A1113	48A
				3P+N+E		A1122	48A

CEE PLUG TOP METAL IP67

Amp	Volt	IP	h	Description	n	Part No.	*PG
125A	400	67	6	3P+E		A1127	48B
				3P+N+E		A1128	48B
125A	500	67	7	3P+E		A1126	48B
				3P+N+E		A1134	48B

CEE SWITCHED SOCKET OUTLET INTERLOCKED - METAL IP44

Amp	Volt	IP	h	Description	n	Part No.	*PG
32A	400	44	6	2P+E		On Request	48C
				3P+E		A1139	48C
				3P+N+E		A1138	48C
32A	500	44	7	2P+E		On Request	48C
				3P+E		A1140	48C
				3P+N+E		A1137	48C





SPLASHPROOF, SWITCHED INTERLOCKED SOCKET - METAL WITH INTEGRATED CIRCUIT BREAKER IP44

Amp	Volt	IP	h	Description	n	Part No.	*PG
32A	400	44	6	2P+E		On Request	48D
				3P+E		A1143	48D
32A	500	44	7	2P+E		On Request	48D
				3P+E		A1144	48D







# CEE Plug Top and Socket Outlet - Metal

\*PG Refer to technical section page.





SWITCHED INTERLOCKED SOCKET - METAL WITH INTEGRATED EARTH LEAKAGE IP44 SPLASHPROOF							
Amp	Volt	IP	h	Description	n	Part No.	*PG
32A	400	44	6	2P+E		On Request	49A
				3P+E		A1145	49A
32A	500	44	7	2P+E		On Request	49A
				3P+E		A1146	49A







CEE SWITCHED SOCKET OUTLET INTERLOCKED - METAL IP44							
Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	44	6	3P+E		A1109	49B
				3P+N+E		A1118	49B
63A	500	44	7	3P+E		A1114	49B
				3P+N+E		A1123	49B

\*Watertight IP67 units available on request.



DUAL INTERLOCKED SOCKET - METAL WITH INTEGRATED CIRCUIT BREAKER IP44 SPLASHPROOF							
Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	44	6	3P+E		A1110	50A
				3P+N+E		A1120	50A
63A	500	44	7	3P+E		A1116	50A
				3P+N+E		-	50A

SPLASHPROOF, DUAL INTERLOCKED SOCKET - METAL WITH INTEGRATED EARTH LEAKAGE AND CIRCUIT BREAKER IP44							
Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	44	6	3P+E		A3112	50B
				3P+N+E		A3114	50B
63A	500	44	7	3P+E		A3113	50B
				3P+N+E		-	50B

\*Watertight IP67 units available on request.





# CEE Plug Top and Socket Outlet - Metal

\*PG Refer to technical section page.



CEE SWITCHED SOCKET OUTLET INTERLOCKED WITH INTEGRATED EARTH LEAKAGE - METAL IP44							
Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	44	6	3P+E		A3120	50C
				3P+N+E		A3122	50C
63A	500	44	7	3P+E		A3121	50C
				3P+N+E		On Request	50C



CEE SWITCHED SOCKET OUTLET INTERLOCKED SOCKET - METAL IP67							
Amp	Volt	IP	h	Description	n	Part No.	*PG
125A	400	67	6	3P+E		A1100	51A
				3P+N+E		A1105	51A
125A	500	67	7	3P+E		A1102	51A
				3P+N+E		A1133	51A



CEE SWITCHED SOCKET OUTLET INTERLOCKED WITH INTEGRATED CIRCUIT BREAKER - METAL IP67							
Amp	Volt	IP	h	Description	n	Part No.	*PG
125A	400	67	6	3P+E		A1101	51B
				3P+N+E		A1107	51B
125A	500	67	7	3P+E		A1104	51B
				3P+N+E		On request	51B



CEE SWITCHED SOCKET OUTLET INTERLOCKED WITH INTEGRATED CIRCUIT BREAKER & EARTH LEAKAGE BREAKER - METAL IP67							
Amp	Volt	IP	h	Description	n	Part No.	*PG
125A	400	67	6	3P+E		A2687	52A
				3P+N+E		On request	52A
125A	500	67	7	3P+E		A2688	52A
				3P+N+E		On request	52A

# CEE Plug Top and Socket Outlet - Metal

\*PG Refer to technical section page.

SWITCHED DUAL INTERLOCK SOCKET OUTLET METAL WITH CONTACTOR & OVERLOAD OPTIONAL IP67							
Amp	Volt	IP	h	Description	n	Part No.	*PG
125A	400V	67	6	3P+E		On request	52B
				3P+N+E		On request	52B
125A	500V	67	7	3P+E		On request	52B
				3P+N+E		On request	52B



IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH TOP CONNECTION BOX FOR BOTTOM CABLE ENTRY EXTENSION TO CEE RANGE (IEC 309 PART 1 ONLY)							
Amp	Volt	IP	h	Description	n	Part No.	*PG
250A	500	67	7	3P+E		A1014	53A
				3P+N+E		A1015	53A



CEE WATERTIGHT ANGLED PLUGTOP - METAL IP67							
Amp	Volt	IP	h	Description	n	Part No.	*PG
250A	500	67	7	3P+E		A1016	53B
				3P+N+E		A1017	53B







# DIN, Swedish Plugs and Sockets

## General Information

The following range of AMPCO plugs and sockets are up to now the most widely used in South Africa and these are known under the names of DIN, NOVA and CEWE sockets and plugs. The names DIN and NOVA originated in Germany under "DIN" Deutsche Industrie Norm (German Industrial Standard) No. 49449, 49450 and 49451. CEWE originated in Sweden as Swedish National Standard.

All of these units served their duty well until the 1970's when Europe decided to standardise on a round plug and socket for reason of better safety and water tightness. The CEE plug and socket was born. In 1979 South Africa adopted that round standard under SANS 1239/79 as National Standard.

Today that very same standard has been incorporated into SANS 0142 (The Wiring of Premises) and the new "OHS Act" meaning any owners of premises not complying with that standard can face heavy fines.





## 12 DIN, Swedish Plugs and Sockets

- 14** DIN Plugs Metal 400/550V  
25/40/63/100/250/400/630AMP  
DIN Plugs Plastic 400/500V IP44  
25/40/63AMP
- 15** DIN Switched Socket Outlet Metal  
400/550V IP44 25/40/63AMP  
DIN Switched Socket Outlet Metal  
400/550V IP44 - With Integrated Circuit Breaker  
DIN Switched Socket Outlet Metal  
400/550V 100AMP IP44
- 16** DIN Switched Socket Outlet Metal  
400/500V IP44 250/400/630AMP
- 17** DIN Switched Socket Outlet Metal  
400/500V 250AMP IP44 - With Contactor  
DIN Connector/Coupler Metal  
400/500V 25/40/63/100/250/400AMP
- 18** Swedish Switched Socket Outlet Metal 63AMP IP44  
Swedish Plug Metal 400/500V 63AMP IP44

## General Description and Application

AMPCO DIN and Swedish plugs and sockets are manufactured in South Africa out of SA14 aluminium and are generally used in mines and heavy industries. They are compatible with other makes of the same specifications.

Housing is epoxy powder coated to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Contacts are manufactured of brass, bedded in moulded insulation. Switch sockets are splash proof protected for outdoor

installation. AMPCOVA (NOVA) 16 and 25A plugs and sockets are also manufactured by AMPCO® in South Africa, of moulded plastic material. One can find these units generally in factories, small and big and in general industry, machine shops etc.

AMPCO plugs and sockets are the very best technical options available to ensure professional electrical installations at all times.

# DIN Plugs and Sockets

\*PG Refer to technical section page.



PLUGS METAL, DIN TYPE IP44					
Amp	Volt	IP	Description	Part No.	*PG
25A	400	44	3P+E	A1206	54A
	550		3P+N+E	A1209	54A
40A	400	44	3P+E	A1212	54A
	550		3P+N+E	A1215	54A
63A	400	44	3P+E	A1218	54A
	550		3P+N+E	A1223	54A
100A	400	44	3P+E	A1201	54A
	550		3P+N+E	A1238	54A
250A	400	44	3P+E	A1227	54A
	550		3P+N+E	A1239	54A
250A	550	44	3P+E	A1010	54A
	550		3P+N+E	A1244	54A
400A	550	44	3P+E	A1013 ECO	54A
	550		3P+N+E	A1245 ECO	54A
400A	550	44	3P+E	A1011 XL	54A
	550		3P+N+E	A1246 XL	54A
630A	550	44	3P+E	A1018	54A
	550		3P+N+E	A1247	54A



PLUGS, PLASTIC DIN TYPE IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
25A	400	44	3P+E		A1230	54B
	550		3P+N+E		On Request	54B
40A	400	44	3P+E		A1231	54B
	550		3P+N+E		On Request	54B
63A	400	44	3P+E		A1232	54B
	550		3P+N+E		On Request	54B



# DIN Plugs and Sockets

\*PG Refer to technical section page.

SWITCHED SOCKET OUTLETS INTERLOCKED, METAL DIN TYPE IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
25A	400	44	3P+E		A1207	54C
	550		3P+N+E		A1210	54C
40A	400	44	3P+E		A1213	54C
	550		3P+N+E		A1216	54C
63A	400	44	3P+E		A1219	54D
	550		3P+N+E		A1224	54D



SWITCHED SOCKET OUTLETS INTERLOCKED WITH INTEGRATED CIRCUIT BREAKER, METAL DIN TYPE IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
63A	400	44	3P+E		A1221	55A
	550		3P+N+E		On Request	55A



SWITCHED DUAL SOCKET OUTLET INTERLOCKED METAL DIN IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
100A	400	44	3P+E		A1202	55B
	550		3P+N+E		A1248	55B



# DIN Plugs and Sockets

\*PG Refer to technical section page.



SWITCHED SOCKET OUTLETS INTERLOCKED WITH SIDE OPERATED, METAL DIN TYPE IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
250A	400	44	3P+E		A1226	55C
			3P+N+E		A1249	55C
250A	550	44	3P+E		A1004	55C
			3P+N+E		A1228	55C
400A	550	44	3P+E		A1012 ECO	55C
			3P+N+E		A1229 ECO	55C



SWITCHED SOCKET OUTLETS INTERLOCKED WITH FRONT OPERATED, METAL DIN TYPE IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
250A	400	44	3P+E		A1233	55D
			3P+N+E		A1234	55D
250A	550	44	3P+E		A1006	55D
			3P+N+E		A1235	55D



SWITCHED SOCKET OUTLETS INTERLOCKED WITH FRONT OPERATED, METAL DIN FLAT OVAL TYPE IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
400A	550	44	3P+E		A1005	56A
			3P+N+E		A1236	56A
630A	550	44	3P+E		A1019	56A
			3P+N+E		A1237	56A





# DIN Plugs and Sockets

\*PG Refer to technical section page.

SWITCHED SOCKET OUTLETS INTERLOCKED WITH CONTACTOR, METAL DIN TYPE IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
250A	400	44	3P+E		A1003	56B
			3P+N+E		On Request	56B
250A	500	44	3P+E		A1220	56B
			3P+N+E		On Request	56B

Provided the dimensions are suitable a contactor of your choice can be fitted. Micro switch interlocked.



CONNECTOR/COUPLER, METAL DIN TYPE IP44						
Amp	Volt	IP	Description	n	Part No.	*PG
25A	400	44	3P+E		A1205	56C
	550		3P+N+E		On Request	56C
40A	400	44	3P+E		A1211	56C
	550		3P+N+E		On Request	56C
63A	400	44	3P+E		A1217	56C
	550		3P+N+E		On Request	56C
100A	400	44	3P+E		A1200	56C
	550		3P+N+E		On Request	56C
250A	400	44	3P+E		A1009	56C
	550		3P+N+E		On Request	56C
400A	400	44	3P+E		On Request	56C
	550		3P+N+E		On Request	56C



# Swedish Plug Tops and Socket Outlets - Metal

\*PG Refer to technical section page.



IP44 SPLASHPROOF, SWITCHED DUAL INTERLOCKED CEWE TYPE SOCKET - METAL						
Amp	Volt	IP	Description	n	Part No.	*PG
63A	400	44	3P+E*		A1901	57A
	500		3P+N+E*		A1905	57A

\*Scraping earth



IP44 SPLASHPROOF CEWE TYPE PLUG - METAL						
Amp	Volt	IP	Description	n	Part No.	*PG
63A	400	44	3P+E*		A1900	57B
	500		3P+N+E*		A1904	57B

\*Scraping earth



# Notes



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# CEE Plugs and Sockets - Moulded

## General Description and Application

Designed to meet the requirements of SANS / IEC 60309-1+2, 1999 these moulded plugs and sockets are used in a wide range of commercial, industrial and mining applications e.g. factories machine tools, mining equipment etc. in fact wherever a reliable supply of electricity is required. All units are compatible with other makes of same specifications.





## 20 CEE Plugs and Interlocked Sockets - Moulded - Plastic

- 22** CEE Switched Socket Outlets Economy Range Plastic IP44 230/400/500V 16-32AMP  
CEE Switched Socket Outlets Plastic IP67 230/400/500V 16-32-63AMP
- 23** CEE Switched Socket Outlets Plastic IP67 - With Integrated Circuit Breaker 400/500V 63AMP  
CEE Switched Socket Outlets Plastic IP67 - With Integrated Earth Leakage 400/500V 63AMP  
CEE Switched Socket Outlets Plastic IP67 - With Integrated Earth Leakage & Circuit Breaker 400/500V 63AMP
- 24** CEE Plugs Plastic IP44 110/230/400/500V, 16 - 32AMP
- 25** CEE Plugs Plastic IP67 110/230/400/500V, 16 - 32AMP
- 26** CEE Plugs Plastic IP67 110/230/400/500V, 63AMP
- 27** CEE 7 PIN Plugs Plastic IP44 230/400/500V, 16 - 32AMP  
CEE 7 PIN Plugs Plastic IP67 230/400/500V, 16 - 32AMP
- 28** CEE Couplers/Connectors Plastic IP44 230/400/500V, 16 - 32AMP  
CEE Angled Coupler/Connector Plastic IP67 230V, 16 AMP
- 29** CEE Couplers/Connectors Plastic IP67 230/400/500V, 16/32/63 AMP
- 30** CEE Couplers/Connectors Plastic IP67 230/400/500V, 125 AMP  
CEE 7 PIN Coupler/Connector Plastic IP44 230/400/500V, 16 - 32 AMP  
CEE 7 PIN Coupler/Connector Plastic IP67 230/400/500V, 16 - 32 AMP
- 31** NOVA Switched Socket Outlet Plastic IP44 16/25 AMP  
NOVA Plug Plastic IP44 16/25 AMP

### At a Glance

- The widest range of IEC 60309 - 1+2, 1999 standard plastic moulded industrial plugs and sockets available on the market with rated currents of 16, 32, 63, 125A and voltages from 24 to 500V.
- IP44 splashproof and IP67 watertight two-three-four and five-pole versions.
- The product range (plugs, wall sockets switched and unswitched, built-in outlets, appliance inlets, couplers) covers all installation requirements in industrial and agricultural facilities, construction and camp sites. etc.

# CEE Plugs and Sockets - Moulded

\*PG Refer to technical section page.



IP44 SPLASHPROOF, INTERLOCKED SWITCH SOCKETS, ECONOMY RANGE, TYPE EURONORM - MOULDED							
Amp	Volt	IP	h	Description	n	Part No.	*PG
16A	230	44	6	2P+E		A3001	57C
	400			3P+E		A3002	57C
			3P+N+E		A3004		
32A	230	44	6	2P+E		A3006	57C
	400			3P+E		A3007	57C
			3P+N+E		A3009		
32A	500	44	6	3P+E		A3008	57C
	500			3P+N+E		A3010	
			500	7	3P+E		A3003
3P+N+E		A3005					







IP67 WATERTIGHT, DUAL INTERLOCKED SWITCHED SOCKET - MOULDED							
Amp	Volt	IP	h	Description	n	Part No.	*PG
16A	230	67	6	2P+E		A0617	58A
	400			3P+E		A0620	58A
			3P+N+E		A0619		
32A	230	67	6	2P+E		A0642	58A
	400			3P+E		A0621	58A
			3P+N+E		A0613		
32A	500	67	6	3P+E		A0665	58A
	500			3P+N+E		A0616	
			500	7	3P+E		A0622
3P+N+E		A0664					

IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH ISOLATOR ECONOMY RANGE, TYPE EURONORM - MOULDED							
Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	67	6	3P+E		A3101	58A
	400			3P+N+E		A3102	
			500	7	3P+E		A3103
500	3P+N+E		A3104				





# CEE Plugs and Sockets - Moulded

\*PG Refer to technical section page.





**IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH INTEGRATED CIRCUIT BREAKER, ECONOMY RANGE, TYPE EURONORM - MOULDED**

Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	67	6	3P+E 3P+N+E	 	A3105 A3106	58B
	500		7	3P+E 3P+N+E	 	A3107 On Request	58B



**IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH INTEGRATED EARTH LEAKAGE\*, ECONOMY RANGE, TYPE EURONORM - MOULDED**

Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	67	6	3P+E 3P+N+E	 	A3125 A3127	59A
	500		7	3P+E 3P+N+E	 	A3126 On Request	59A

**IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH INTEGRATED EARTH LEAKAGE AND CIRCUIT BREAKER, ECONOMY RANGE, TYPE EURONORM - MOULDED**

Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	400	67	6	3P+E 3P+N+E	 	A3108 A3109	59A
	500		7	3P+E 3P+N+E	 	A3110 On Request	59A

**Container Socket Outlet Interlocked - Moulded Plastic IP67**

Amp	Volt	IP	h	Description	n	Part No.	*PG
32A	400	67	3	3P+E Clear Lid with Phase Indication		A0672	59B
				3P+E Grey Lid		A0618	59B



**Reefer 32A 3H Switched Socket Outlet**

The new Reefer 3P+E 50Hz IP67 3H switched socket is an innovation designed by AMPCO. To further improve the electrical functionality of the switched socket outlet, specifically for the container maintenance and management sector.

**Salient Features**

- Transparent poly carbonate lid for ease of visual inspection and phase colours are correct for the necessary phase rotation uniformity.
- Clear indication of single or dropped phase voltage.
- Three red LED lights to indicate that each individual phase voltage is present at the isolator
- Three green LED lights to indicate that each individual phase voltage is present at the socket outlet plug.
- Mechanically dual interlocked for safe operation.
- Durable weather resistant plastic.
- IP67



# CEE Plugs and Sockets - Moulded

\*PG Refer to technical section page.



IP44 SPLASHPROOF PLUG - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
16A	110	44	2P+E		A0104	—	60A
			3P+E		250	—	
			3P+N+E		256	—	
	230		2P+E		A0105	A013-6	60A
			3P+E		251	A014-9	
			3P+N+E		257	A015-9	
	400		2P+E		249	A013-9	60A
			3P+E		A0140	A014-6	
			3P+N+E		A0133	A015-6	
	500		2P+E		—	A013-7	60A
			3P+E		A0107	A014-7	
			3P+N+E		A0101	A015-7	
32A	110	44	2P+E		259	—	60A
			3P+E		262	—	
			3P+N+E		268	—	
	230		2P+E		A0138	A023-6	60A
			3P+E		263	A024-9	
			3P+N+E		269	A025-9	
	400		2P+E		261	A023-9	60A
			3P+E		A0136	A024-6	
			3P+N+E		A0135	A025-6	
	500		2P+E		—	A023-7	60A
			3P+E		A0110	A024-7	
			3P+N+E		A0102	A024-5	

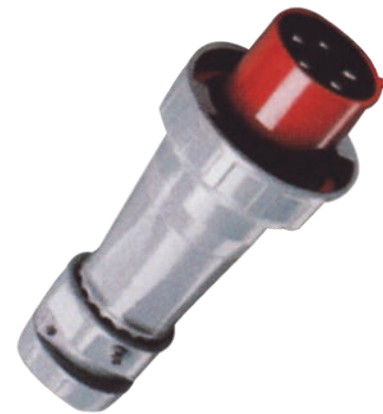




# CEE Plugs and Sockets - Moulded

\*PG Refer to technical section page.

IP67 WATERTIGHT PLUG - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
16A	110	67	2P+E		3794	—	60B
			3P+E		3807	—	
			3P+N+E		3819	—	
	230		2P+E		A0111	A0132-6	60B
			3P+E		3811	A0142-9	
			3P+N+E		3823	A0152-9	
	400		2P+E		3799	A0132-9	60B
			3P+E		A0112	A0142-6	
			3P+N+E		A0113	A0152-6	
	500		2P+E		—	A0132-7	60B
			3P+E		A0132	A0142-7	
			3P+N+E		—	A0152-7	
32A	110	67	2P+E		3829	—	60B
			3P+E		3839	—	
			3P+N+E		3851	—	
	230		2P+E		3830	A0232-6	60B
			3P+E		3844	A0242-9	
			3P+N+E		3855	A0252-9	
	400		2P+E		3832	A0232-9	60B
			3P+E		A0114	A0242-6	
			3P+N+E		A0116	A0252-6	
	500		2P+E		—	A0232-7	60B
			3P+E		3842	A0242-7	
			3P+N+E		—	A0252-7	



# CEE Plugs and Sockets - Moulded

\*PG Refer to technical section page.









IP67 WATERTIGHT PLUG - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
63A	110	67	2P+E		1570	—	60B
			3P+E		1108	—	
			3P+N+E		1112	—	
	230		2P+E		1571	A033-6	60B
			3P+E		1109	A034-9	
			3P+N+E		1113	A035-9	
	400		2P+E		1572	A033-9	60B
			3P+E		A0117	A034-6	
			3P+N+E		A0134	A035-6	
	500		2P+E		—	A033-7	60B
			3P+E		A0118	A034-7	
			3P+N+E		A0103	A035-7	
125A	110	67	2P+E		3399	—	60B
			3P+E		1441	—	
			3P+N+E		1445	—	
	230		2P+E		3400	A043-6	60B
			3P+E		1442	A044-9	
			3P+N+E		1446	A045-9	
	400		2P+E		—	A043-6	60B
			3P+E		A0120	A044-6	
			3P+N+E		A0122	A045-6	
	500		2P+E		—	A043-7	60B
			3P+E		A0121	A044-7	
			3P+N+E		A0099	A045-7	









# CEE 7 Pole Plugs and Sockets - Moulded

\*PG Refer to technical section page.

IP44 SPLASHPROOF PLUG, 7 POLE (6P+E) - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
16A	230	44	6P+E		A0127	A017-9v	61A
	400		6P+E		A0128	A017-6v	61A
	500		6P+E		1055	A017-7v	61A
32A	230	44	6P+E		743	A027-9v	61A
	400		6P+E		A0129	A027-6v	61A
	500		6P+E		1060	A027-7v	61A

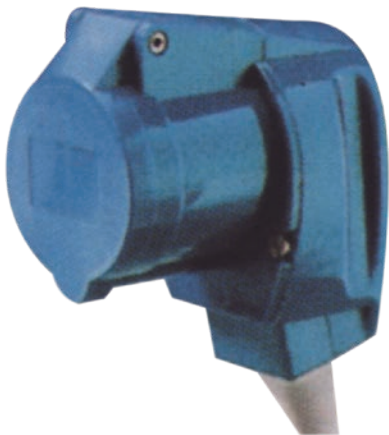


IP67 WATERTIGHT PLUG, 7 POLE (6P+E) - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
16A	230	67	6P+E		3776	A0172-9v	61B
	400		6P+E		3777	A0172-6v	61B
	500		6P+E		3913	A0172-7v	61B
32A	230	67	6P+E		2405	A0272-9v	61B
	400		6P+E		2324	A0272-6v	61B
	500		6P+E		2213	A0272-7v	61B



# CEE Plugs and Sockets - Moulded

\*PG Refer to technical section page.



## IP44 SPLASHPROOF CONNECTOR (COUPLER) - MOULDED

Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG			
16A	230	44	2P+E		A0503	A213-6	61C			
			3P+E		513	A214-9				
			3P+N+E		519	A215-9				
	400		44	2P+E		511	A213-9	61C		
				3P+E		A0504	A214-6			
				3P+N+E		A0521	A215-6			
				500	44	2P+E		—	A213-7	61C
						3P+E		A0505	A214-7	
						3P+N+E		A0528	A215-7	

32A	230	44	2P+E		A0532/ A0506	A223-6	61C			
			3P+E		525	A224-9				
			3P+N+E		531	A225-9				
	400		44	2P+E		523	A223-6	61C		
				3P+E		A0531/ A0507	A224-6			
				3P+N+E		A0529	A225-6			
				500	44	2P+E		—	A233-7	61C
						3P+E		A0508	A224-7	
						3P+N+E		2027	A225-7	

## IP44 SPLASHPROOF CONNECTOR (COUPLER), ANGLED - MOULDED














Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
16A	230	44	2P+E		A0500	A8013-6	61D





# CEE Plugs and Sockets - Moulded

\*PG Refer to technical section page.

IP67 WATERTIGHT, CONNECTOR (COUPLER) - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
16A	230	67	2P+E		A0523	A2132-6	62A
			3P+E		3873	A2142-9	
			3P+N+E		3883	A2152-9	
	400		2P+E		3862	A2132-9	62A
			3P+E		A0509	A2142-6	
			3P+N+E		A0525	A2152-6	
	500		2P+E		—	A2132-7	62A
			3P+E		3872	A2142-7	
			3P+N+E		—	A2152-7	
32A	230	67	2P+E		3888	A2232-6	62A
			3P+E		3899	A2242-9	
			3P+N+E		3909	A2252-9	
	400		2P+E		3891	A2232-9	62A
			3P+E		A0524	A2242-6	
			3P+N+E		A0526	A2252-6	
	500		2P+E		—	A2232-7	62A
			3P+E		3898	A2242-7	
			3P+N+E		—	A2252-7	
63A	230	67	2P+E		1574	A2335-6	62A
			3P+E		1116	A2345-9	
			3P+N+E		1120	A2355-9	
	400		2P+E		1575	A2335-9	62A
			3P+E		A0510	A2345-6	
			3P+N+E		A0512	A2355-6	
	500		2P+E		—	A2335-7	62A
			3P+E		A0511	A2345-7	
			3P+N+E		A0501	A2355-7	



# CEE Plugs and Sockets - Moulded

\*PG Refer to technical section page.



IP67 WATERTIGHT, CONNECTOR (COUPLER) - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
125A	230	67	2P+E		3390	A2435-6	62A
			3P+E		1449	A2445-9	
			3P+N+E		1453	A2455-9	
	400		2P+E		—	A2435-9	62A
			3P+E		A0513	A2445-6	
			3P+N+E		A0515	A2455-6	
	500		2P+E		—	A2435-7	62A
			3P+E		A0514	A2445-7	
			3P+N+E		—	A2455-7	



IP44 SPLASHPROOF CONNECTOR (COUPLER) 7 POLE (6P+E) - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
16A	230	44	6P+E		A0518	A217-9v	62B
	400		6P+E		A0519	A217-6v	62B
	500		6P+E		1065	A217-7v	62B
32A	230	44	6P+E		747	A227-9v	62B
	400		6P+E		A0520	A227-6v	62B
	500		6P+E		1070	A227-7v	62B



IP67 WATERTIGHT CONNECTOR (COUPLER) - MOULDED							
Amp	Volt	IP	Description	n	Part No.	New Part No.	*PG
16A	230	67	6P+E		3783	A2172-9v	62C
	400		6P+E		3916	A2172-6v	62C
	500		6P+E		3748	A2172-7v	62C
32A	230	67	6P+E		2406	A2272-9v	62C
	400		6P+E		2255	A2272-6v	62C
	500		6P+E		2640	A2272-7v	62C

# Nova Plugs and Sockets

\*PG Refer to technical section page.

AMPCOVA SOCKET OUTLETS IP44 3P+E 400V					
Amp	Volt	IP	Description	Part No.	*PG
16A	400	44	3P+E	A1241	63A
25A		44	3P+E	A1243	63A



AMPCOVA PLUG IP44 3P+E 400V					
Amp	Volt	IP	Description	Part No.	*PG
16A	400	44	3P+E	A1240	63B
25A		44	3P+E	A1242	63B



# MASC Permit No: MASC M-30



MASC Markscheme and Training (Pty) Ltd  
2018/348042/07

**MASC PERMIT NO: MASC-030M**

This permit authorizes

**Ampco Electric**  
(A Division of Hudaco Limited)

368 Sifton Street  
Robertville  
Roodepoort  
1709

To apply the MASC Certification Mark, illustrated below, to Manufacture plugs and sockets in compliance with the requirements of

**SANS 1239**

Plugs and socket-outlets and couplers for industrial purposes

T Mouton



Permit No: MASC-030M

Date of Issue:  
21 June 2019

Expiry Date:  
21 June 2022

Original Date of Issue:  
21 June 2016

Permit Conditions

This permit consists of a front page together with Annex 1 and MASC Standard Terms and Conditions

The permit and each annex:  
- Are without alteration

- Are identified with the company name on each page
- Are identified by applicable permit number
- Are valid, subject to ongoing compliance with the permit conditions

This document may not be reproduced unless  
Accompanied by a copy of Annex 1 (Product List)

MASC Markscheme and Training (Pty) Ltd  
Unit 5 Lelyta Park, 45 Jurg Ave, Hennopspark, Ext 87  
Centurion, 0157









# Explosion Protected Plugs and Sockets

## General information for Hazardous Areas

AMPCO manufactures and distributes plugs and sockets for hazardous areas for different zones, namely:

- ZONE 1 (Class 1 Div. 1)
- ZONE 2 (Class 1 Div. 2)
- ZONE 21/22 (Class II Div. 1)



## 34 Explosion Protected Plugs and Sockets

**36 EX ZONE 1 Metal IP67**  
Interlocked Switched Socket Outlet  
380/500V, 63AMP

**EX ZONE 1 Metal Plug IP67**  
380/500V, 63AMP

**37 EX ZONE 2 Metal IP67**  
Interlocked Switched Socket Outlet  
380/500V, 63AMP

**EX ZONE 2 Metal Plug IP67**  
380/500V, 63AMP

## Introduction to the principles of explosion protected electrical equipment

In the manufacture, processing, transport and storage of flammable chemicals and petroleum products (for example, Benzene, Alcohol, Acetylene, Coal-gas) it is inevitable that there will be leakage of gases and vapours which, in conjunction with the oxygen of the atmosphere, may form mixtures of an explosive concentration.

Accidental ignition of such a mixture - for example by an electrical spark or excessively hot surface - may cause an explosion which will endanger life and property. To avoid these risks many countries have developed specific safety practices. In view of the growing international nature of the industries, international standardisation and agreement with respect to the safety practices was extremely desirable.



# Explosion Protected Plugs and Sockets

\*PG Refer to technical section page.



**IP67 WATERTIGHT, SWITCHED DUAL INTERLOCKED SOCKET - METAL 63A 380V - 500V, 50Hz ZONE 1**

Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	380	67	6	3P+E 3P+N+E	 	A0145 A0146	64A
	500		7	3P+E 3P+N+E	 	A0147 A0148	64A

**IP67 WATERTIGHT PLUG - METAL 63A 380V - 500V, 50Hz ZONE 1**

Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	380	67	6	3P+E 3P+N+E	 	A0648 A0649	64B
	500		7	3P+E 3P+N+E	 	A0650 A0651	64B

**AMPCO® EXPLOSION PROTECTED PLUGS AND SOCKETS  
63 A 380 V - 500 V Switched Dual Interlocked**

Zone 1 AMPCO® Switch Sockets are manufactured to include the following:

**Salient Features**

- Switch knob, lockable in “off” position
- One top and one bottom entry (32mm)
- Protection Class IP 67
- Mechanically interlocked
- All contacts are manufactured of brass and female contacts are Type Multilams with torsion spring louvers
- Inserts are made of plastic and are virtually unbreakable
- Competitive pricing due to South African manufacture
- Packing: 1 off socket per carton (plug not included)

The design is in accordance with SANS/IEC 60309 Part 1 + 2 + 3. SANS 60309-1 for general requirements, SANS 60309-2 for dimensional requirements, SANS 60309-3 for particular requirements for use in explosive gas atmospheres, SANS/IEC 79-0 increased Safety “e”, SANS 314 (IEC 79-1) flameproof enclosures, SABS 1031 type “e” apparatus for use in flammable gas atmospheres, SABS 969 enclosures for use in Class II Div. 1 + 2 locations (dust ignition proof), SABS 970 Non-sparking for use in Class 1 Div 1 locations, SABS 1222 (IEC 529) classification of degrees of protection provided by enclosures.

Certificate of conformity is existent and available on request. Plugs and Sockets correspond with National (SABS 1239) and International Standards (IEC 60309 Part 1 + 2). Therefore the explosion protected plugtop can be inserted into a normal CEE round type socket. A normal CEE plugtop, however, cannot mate an explosion protected socket!

Switch socket and plug body are manufactured from an aluminium alloy LM24 in a high pressure die cast process and is epoxy coated in hammer grey to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are stainless steel. Contact pins are manufactured of brass and bedded in Amplast insulation (unbreakable and heat resistant) One bottom and top entry (32mm) is provided for easy cable termination The socket is fitted with one EXe blanking plug.

**LOCATIONS:**  
**HAZARD FREQUENCY:**

Zone 1 (Class 1 Div 1) gas surface intermittent, occurring under normal operating conditions in hazardous areas  
Group IIA to IIC Propane to Hydrogen  
T4  
Explosion protected Ex ed II T4/DIP

**ENVIRONMENT:**  
**LIMITING TEMPERATURE:**  
**CERTIFIED:**



# Explosion Protected Plugs and Sockets



\*PG Refer to technical section page.

IP67 WATERTIGHT, SWITCHED DUAL INTERLOCKED SOCKET - METAL 63A 380V - 500V, 50Hz							
Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	380	67	6	3P+E		A0644	65A
				3P+N+E		A0645	
	500		7	3P+E		A0646	65A
				3P+N+E		A0647	



IP67 WATERTIGHT PLUG - METAL 63A 380V - 500V, 50Hz							
Amp	Volt	IP	h	Description	n	Part No.	*PG
63A	380	67	6	3P+E		A0648	65B
				3P+N+E		A0649	
	500		7	3P+E		A0650	65B
				3P+N+E		A0651	



## AMPCO® EXPLOSION PROTECTED PLUGS AND SOCKETS ZONE 2, CLASS I, DIVISION 2 LOCATIONS

These are locations in which operations concerned with flammable or explosive substances, gases, or vapours or volatile liquids are so well controlled that an explosive or ignitable concentration is only likely to occur under abnormal conditions.

**NOTE 1: The following shall be regarded as the minimum requirements for a location to which this classification is applicable.**

- The area is so well ventilated that, if abnormal conditions arise, ignitable concentrations of the gas or vapour are rapidly dispersed and their possible contact with electrical equipment is of minimum duration.
- Complete segregation from any Class I, Division 0 or 1 location is ensured, in the case of enclosed premises by the use of a gasproof structure and the absence of doorways, ventilating ducts, and trenches communicating with such locations, and in the case of open premises by the distance between the area and such locations being great enough to ensure safety in any atmospheric conditions.
- Bursting discs and relief valves on the containers of the flammable liquids, gases, or vapours are situated (or so arranged as to vent) outside the area and in positions where, if they operate, no additional risk is introduced to the area.
- There is no point at which, under normal operating conditions, a flammable liquid, gas, or vapour is in direct contact with the surrounding atmosphere.
- All vessels, pumps, pipes, and fittings containing flammable liquids, gases, or vapours are so constructed and maintained as to prevent any significant leakage.

**NOTE 2: The following are examples of Class I, Division 2 locations.**

- A distillation unit on open premises, with or without a roof, and in which a flammable liquid is distilled. Such a unit may extend over several floors that house pumps, pipework, vapourizers, distillation, storage, and pressure vessels, but relief valves must be connected to a closed system or so arranged as to discharge into the open air under emergency conditions only.
- An area where equipment (such as pumps, vessels, and pipework) containing flammable liquids, gases, or vapours is installed in the open air or outside buildings that enclose a Class I, Division 1 location, any openings in the enclosing walls being far enough away from non-flameproof electrical apparatus to

ensure that the apparatus will not be exposed to a flammable concentration of the dangerous substance.

- An instrument control bay equipped with pipes, valves, and instruments and segregated from any Class I, Division 1 location with which it is associated. (Where supervision of such an area is involved, hermetically sealed windows of strengthened glass should be provided in the common wall.)
- Areas surrounding the walls of a tank installed in the open air and having a floating roof, and in which a flammable liquid is stored. Where the tank is surrounded by a bund wall, the classification of the area inside the bund wall depends on the probability of a flammable concentration arising within the wall under any foreseeable conditions.

**NOTE: The space within the tank and above the roof is classified as a Class I, Division 1 location.**

- The area surrounding a motor-driven compressor of flammable gases and in which the sealing and ventilation of the compressor are such as to prevent the exposure of the motor to a flammable concentration of the gas.
- Open air loading and unloading areas for road or rail tankers (used for transporting e.g. flammable liquids), where the use of flexible pipes is confined to the connection to the vehicle, a closed system is used, rapid drainage for any escaping liquid is provided, valves are well maintained, and blank flanges are fitted over pipe ends whenever the pipes are not in use.

**AMPCO plugs and sockets fulfill the following requirements:**

- Switched, interlocked wall mounted sockets fitted with a fully encapsulated switch and its enclosure complies at least with IP 54. An internal overpressure of 4 mbar requires more than 30 seconds to drop to 2 mbar.
- Plugs and sockets are interlocked so that the plugs may be inserted and withdrawn only with the voltage switched off.
- Zone 2 is harmonized in many countries.
- In South Africa Zone 2 complies with SABS 970-1971.

This specification covers constructional requirements for "EX N" (non-sparking electrical equipment for use in potentially flammable atmospheres Class I, Division 2 Locations) as defined in SABS 0108 and IEC 79-10, 1986. Attention is drawn to the fact that such electrical installations are subject to regulations framed under the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983) or the Mines and Works Act, 1956 (Act 27 of 1956) both Acts as latest amended and possibly also to other Regulations such as Municipal By-laws!

Note: "EX N" - equipment is not considered suitable for use in hazardous areas such as in a fiery mine. Electrical apparatus intended for use in hazardous areas such as in fiery mines is subject to approval by the Government Mining Engineer.





# Direct current Plugs, Sockets and Connectors





## 38 Direct current Plugs, Sockets and Connectors

- 40 Battery Vehicle Plug IP23  
320AMP, 24 - 96V DC
- Battery Vehicle Plugs and Sockets IP44  
250AMP, 500V DC
- Battery Vehicle Plugs IP23  
50 - 350AMP, 24 - 72V DC



# Direct current Plugs, Sockets and Connectors

\*PG Refer to technical section page.



## 320 A BATTERY VEHICLE PLUGS, TYPE FEM, IP23 - NEOPRENE RUBBER

Amp	Volt	IP	Description	Part No.	*PG
320A	24-96V DC	23	Male Plug*	A2026	66A
			Female Plug	A2025	66A
			Male Aux	A2036	66A
			Female Aux	A2014	66A

\*Handle included on male plug



## 250A BATTERY VEHICLE PLUGS AND SOCKETS, TYPE DIN, IP44, 500V WITH 30A AUXILIARY CONTACTS - METAL

Amp	Volt	IP	Description	Part No.	*PG
250A	<b>500</b>	44	Plugs	A1203	66B
250A	<b>500</b>	44	Connectors	On Request	66B
250A	<b>500</b>	44	Flush-mounted Socket outlets	A1204	66B



## 50A/175A/350A BATTERY VEHICLE PLUGS, TYPE "S", 2 POLE, IP23 - MOULDED

Amp	Volt	IP	Description	Part No.	*PG
50A	24	23	Red	49052	67A
50A	36	23	Grey	A2000	67A
175A	12	23	Yellow	49140	67A
175A	18	23	Orange	A2003	67A
175A	24	23	Red	A2002	67A
175A	36	23	Grey	A2001	67A
175A	48	23	Blue	A2004	67A
350A	12	23	Yellow	A2021	67A
350A	24	23	Red	A2010	67A
350A	36	23	Grey	A2008	67A
350A	48	23	Blue	A2009	67A
350A	72	23	Green	A2024	67A

\*Handle included on male plug





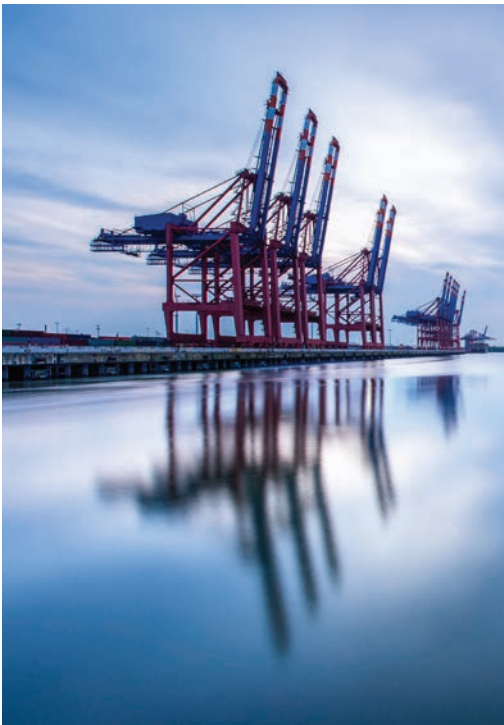




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# Special Plugs, Sockets and Isolator Switches



## 42 Special Plugs, Sockets and Isolator Switches

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- 44** 32A Refrigerated Container Socket Outlets  
16A Single Phase Socket Outlets  
- with and without Lockable Distribution Boxes
- 45** 16A Single Phase Socket Outlet Lockable  
- without Distribution Box  
16A and 32A Plastic Off Load Isolators
- 46** 16A and 125A Metal Isolators  
250A Metal Isolator  
400A and 630A Metal Isolators





# Special Plugs, Sockets and Isolator Switches

\*PG Refer to technical section page.



**32A REFRIGERATED DUAL INTERLOCKED CONTAINER SOCKETS, 380/440V, IP44 METAL ENCLOSURE (ALU) EARTH POSITION 3h**

Amp	Volt	IP	h	Description	n	Part No.	*PG
32A	400	44	6	3P+E		A3030*	68A
				K+N switched interlocked		A3037*	
				AMPCO switched interlocked		A3031*	
				With earth leakage		A3032*	
				With circuit breaker			



**32A REFRIGERATED DUAL INTERLOCKED CONTAINER SOCKETS, 380/440V, IP44 METAL ENCLOSURE (ALU) EARTH POSITION 3h - WITH WINDOW COMPARTMENT**

Amp	Volt	IP	h	Description	n	Part No.	*PG
32A	400	44	6 3	3P+E		A3033	68B
				3P+E		A3034	



**16A SINGLE PHASE INDUSTRIAL SOCKET OUTLET, IP44, 250V**

Amp	Volt	IP	h	Description	Part No.	*PG
16A	250	44	6	2P+E	A2685	68C

**16A SINGLE PHASE INDUSTRIAL SOCKET OUTLET, IP44 250V, WITH COVERED AND LOCKABLE DISTRIBUTION BOX**

Amp	Volt	IP	h	Description	Part No.	*PG
16A	250	44	6	2P+E	A2634	69A





# Special Plugs, Sockets and Isolator Switches

\*PG Refer to technical section page.

16A SINGLE PHASE INDUSTRIAL SOCKET OUTLET, IP44, LOCKABLE WITHOUT DISTRIBUTION BOX						
Amp	Volt	IP	h	Description	Part No.	*PG
16A	250	44	6	2P+E	A2635	69B



16A SINGLE PHASE INDUSTRIAL SOCKET OUTLET, IP44, 250V, LOCKABLE WITHOUT DISTRIBUTION BOX						
Amp	Volt	IP	h	Description	Part No.	*PG
16A	250	44	6	2P+E	A2635M	69C



16/32A SPLASHPROOF OFF LOAD ISOLATOR SWITCH, IP65 3+4 POLE - MOULDED						
Amp	Volt	IP	h	Description	Part No.	*PG
16A	400	65	6	3P - Orange 4P - Orange	A2105 A2112	69D
32A	400	65	6	3P - Orange 4P - Orange	A2106 A2113	69D
16A	400	65	6	3P - Grey 4P - Grey	A2099 A2097	69D
32A	400	65	6	3P - Grey 4P - Grey	A2100 A2098	69D



# Isolators

\*PG Refer to technical section page.



63/125A SPLASHPROOF ISOLATOR SWITCH, IP65, 3 + 4 POLE - METAL						
Amp	Volt	IP	h	Description	Part No.	*PG
63A	<b>500</b>	65	6	3P 4P	A2107 A2114	70A
125A	<b>500</b>	65	6	3P	A2108 A2115	70A



250A SPLASHPROOF ISOLATOR SWITCH, IP65, 3 + 4 POLE - METAL						
Amp	Volt	IP	h	Description	Part No.	*PG
250A	<b>500</b>	65	6	3P 4P	A2109 A2115	70B



250A SPLASHPROOF ISOLATOR SWITCH, IP65, 3 + 4 POLE - METAL						
Amp	Volt	IP	h	Description	Part No.	*PG
400A	<b>500</b>	65	6	3P 4P	A2110 A2117	71A
630A	<b>500</b>	65	6	3P 4P	A2111 A2118	71A



# Customised Plugs and Sockets

Contact us to attend to your special requirements



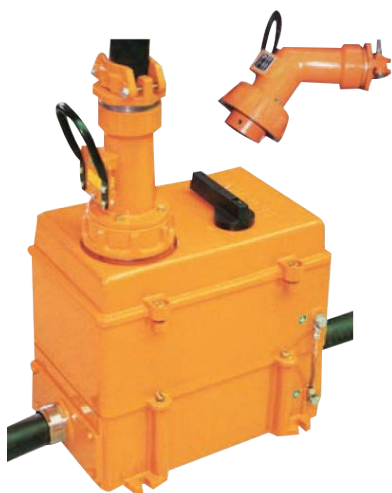
Socket with earth leakage or fuses in window compartment.



Electronic earth leakage test plug.



Harbour crane and ship to shore plugs and sockets.



Harbour crane and ship to shore plugs and sockets 250A switched fused and interlocked, to be installed in niches below quay.



Special plug and socket arrangement.

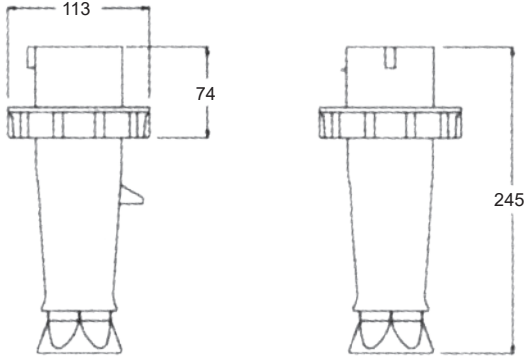


Canopy plug and socket combination.





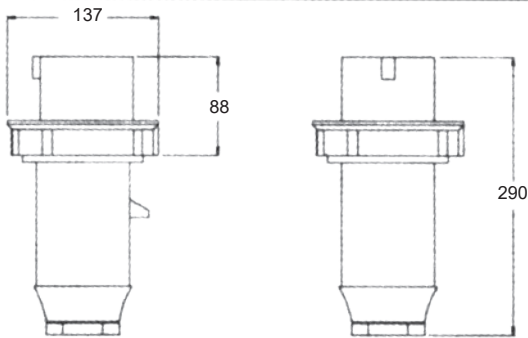
# CEE Plug Top and Socket Outlet - Metal



**CEE PLUG TOP METAL IP67**

48-A

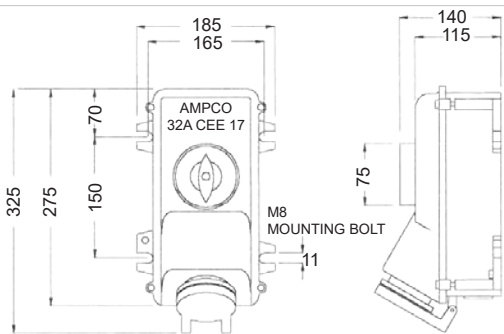
DIMENSIONS: mm  
WEIGHT: 1,3 kg



**CEE PLUG TOP METAL IP67**

48-B

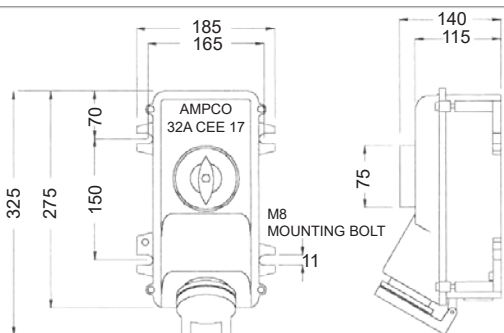
DIMENSIONS: mm  
WEIGHT: 2,5 kg



**CEE SWITCHED SOCKET OUTLET INTERLOCKED - METAL IP44**

48-C

DIMENSIONS: mm  
WEIGHT: 3,2 kg  
SOCKET: 0,165 kg  
PLUG PVC: 0,165 kg  
PLUG METAL: 0,365 kg



**IP44 SPLASHPROOF, SWITCHED INTERLOCKED SOCKET - METAL WITH INTEGRATED CIRCUIT BREAKER**

48-D

DIMENSIONS: mm  
WEIGHT: 3,2 kg  
SOCKET: 0,165 kg  
PLUG PVC: 0,165 kg  
PLUG METAL: 0,365 kg

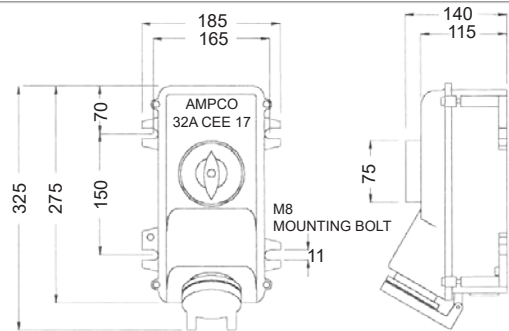


# CEE Plug Top and Socket Outlet - Metal

49-A

## IP44 SPLASHPROOF, SWITCHED INTERLOCKED SOCKET - METAL WITH INTEGRATED EARTH LEAKAGE

DIMENSIONS:	mm	
WEIGHT:		
SOCKET:		3,2 kg
PLUG PVC:		0,165 kg
PLUG METAL:		0,365 kg



The AMPCO round type sockets are mechanically interlocked with isolator, circuit breaker or earth leakage. The housing is made of high pressure die cast aluminium and is epoxy coated in electric orange to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, inserted into Amaplast insulation, (unbreakable and heat resistant). Switch sockets splashproof protected for outdoor installation. One bottom and top entry (32 mm) is provided for easy cable or conduit termination.

1) Extract from MOS ACT 1983 Paragraph 9/1 (This paragraph has retained its validity under the OHS. Act)  
**PORTABLE ELECTRIC TOOLS:**  
 No user shall permit the use of and no person shall use a portable electric tool the operating voltage of which exceeds 50V to earth unless it is connected to a source of electrical energy incorporating an earth leakage device...

2) Extraction from SABS 0142-1993  
 The WIRING OF PREMISES;  
 4.5.4.c Three phase socket-outlets shall comply with (SABS 1239), SANS/ IEC60309-1+2, 1999 and shall be provided with earth-leakage protection if the circuit is intended to supply portable or stationary three phase appliances.

**Special Safety Feature:**

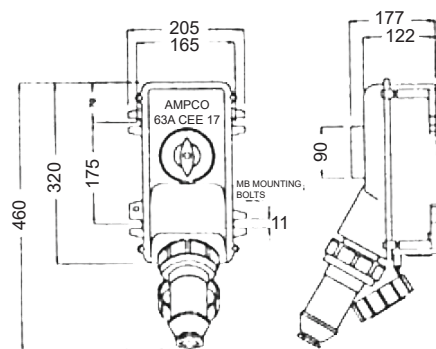
An incorporated earth leakage/circuit breaker unit will detect a fault and trip the socket where the actual fault occurs, namely in the plugged in equipment and not in a distribution board, which may be far distanced. In addition, the tripped socket will only render one user out of order and not a chain of sockets as in the case where one earth leakage unit protects a chain of socket outlets.

**Note:** If a watertight IP67 plug is inserted into an IP44 Splashproof socket and properly locked with locking ring the plug and socket combination will become watertight IP67.

49-B

## CEE SWITCHED SOCKET OUTLET INTERLOCKED - METAL IP44

DIMENSIONS:	mm	
WEIGHT:		
SOCKET:		5,8 kg
PLUG PVC:		0,65 kg
PLUG METAL:		1,3 kg

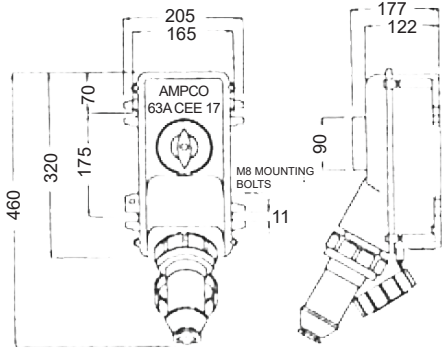


Round type sockets, mechanically interlocked, with on-load isolator. Housing made of high pressure die cast aluminium. Housing is epoxy powder coated in electric orange, to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, inserted into Amaplast insulation (unbreakable and heat resistant). Switch socket splash proof protected for outdoor installation (IP44). One bottom and top entry (32mm) is provided for easy cable or conduit termination.





# CEE Plug Top and Socket Outlet - Metal



## IP44 SPLASHPROOF, DUAL INTERLOCKED SOCKET - METAL WITH INTEGRATED CIRCUIT BREAKER

50-A

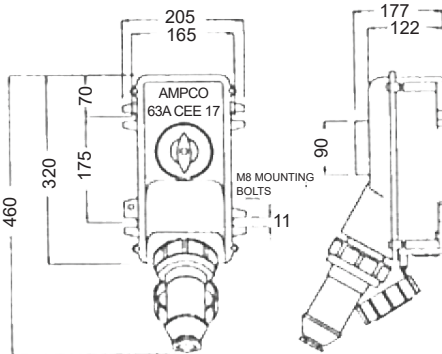
DIMENSIONS: mm

WEIGHT:  
 SOCKET: 5,8 kg  
 PLUG PVC: 0,65 kg  
 PLUG METAL: 1,3 kg

Round type sockets, mechanically interlocked, with circuitbreaker 60A 5kA. Housing made of high pressure die cast aluminium. Housing is epoxy powder coated, to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, inserted into Amplast insulation (unbreakable and heat resistant). Switch socket splashproof protected for outdoor installation. One bottom and top entry (32mm) is provided for easy cable or conduit termination.

**NOTE:**  
 All switch sockets are available with electrical Interlock and under voltage relay. This can prevent Automatic reconnection after power failure.

**Note:** If a watertight IP67 plug is inserted into an IP44 Splashproof socket and properly locked with locking ring the plug and socket combination will become watertight IP67.



## IP44 SPLASHPROOF, DUAL INTERLOCKED SOCKET - METAL WITH INTEGRATED EARTH LEAKAGE AND CIRCUIT BREAKER

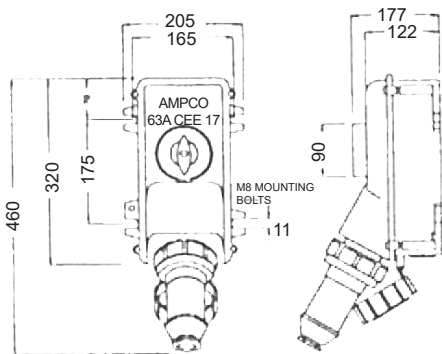
50-B

DIMENSIONS: mm

WEIGHT:  
 SOCKET: 6,5 kg  
 PLUG PVC: 0,65 kg  
 PLUG METAL: 1,3 kg

**WITH CIRCUIT BREAKER/EARTH LEAKAGE COMBINATION AS ENFORCED BY THE OHS ACT<sup>1)</sup> AND SABS<sup>2)</sup>.**

The AMPCO round type sockets are mechanically interlocked with a circuit breaker/earth leakage combination 60 Amp/30 mA, 25 kA at 380 V and 15 kA at 500 V rupturing capacity. The housing is made of high pressure die cast aluminium and is epoxy coated in electric orange to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, inserted into Amplast insulation, (unbreakable and heat resistant). Switch sockets splashproof protected for outdoor installation. One bottom and top entry (32 mm) is provided for easy cable or conduit termination.



## CEE SWITCHED SOCKET OUTLET INTERLOCKED WITH INTEGRATED EARTH LEAKAGE - METAL IP44

50-C

DIMENSIONS: mm

WEIGHT:  
 SOCKET: 6,5 kg  
 PLUG PVC: 0,65 kg  
 PLUG METAL: 1,3 kg

**WITH SWITCHED EARTH LEAKAGE AS ENFORCED BY THE OHS ACT<sup>1)</sup> AND SABS<sup>2)</sup>.**

The AMPCO round type sockets are mechanically interlocked with an earth leakage 60 Amp/30 mA, 10 kA at 380 V and 3 kA at 500V rupturing capacity. The housing is made of high pressure die-cast aluminium, and is epoxy coated in electric orange to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, inserted into Amplast insulation, (unbreakable and heat resistant). Switch sockets splashproof protected for outdoor installation. One bottom and top entry (32 mm) is provided for easy cable or conduit termination.

# CEE Plug Top and Socket Outlet - Metal



1) Extract from MOS ACT 1983 Paragraph 9/1 (This paragraph has retained its validity under the OHS Act)  
**PORTABLE ELECTRIC TOOLS:**  
 No user shall permit the use of and no person shall use a portable electric tool the operating voltage of which exceeds 50V to earth unless it is connected to a source of electrical energy incorporating an earth leakage device...

2) Extraction from SABS 0142-1993  
 The WIRING OF PREMISES;  
 4.5.4.c Three phase socket outlets shall comply with (SABS 1239) SANS/ IEC60309-1+2 and shall be provided with earth leakage protection if the circuit is intended to supply portable or stationary three phase appliances.

**Special Safety Feature:**

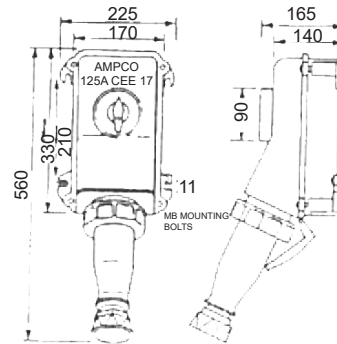
**An incorporated earth leakage/circuit breaker unit will detect a fault and trip the socket where the actual fault occurs, namely in the plugged in equipment and not in a distribution board, which may be far distanced. In addition, the tripped socket will only render one user out of order and not a chain of sockets as in the case where one earthleakage unit protects a chain of socket outlets.**

**Note:** If a watertight IP67 plug is inserted into an IP44 Splashproof socket and properly locked with locking ring the plug and socket combination will become watertight IP67.

**51-A**

**CEE SWITCHED SOCKET OUTLET INTERLOCKED SOCKET - METAL IP67**

DIMENSIONS:	mm
WEIGHT:	
SOCKET:	5,8 kg
PLUG PVC:	1,1 kg
PLUG METAL:	1,3 kg

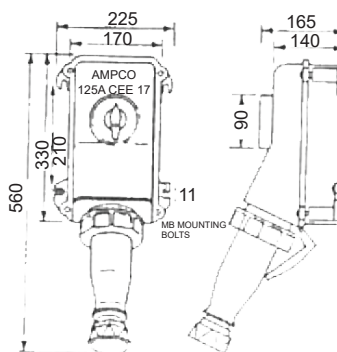


Round type sockets, mechanically interlocked, with on-load isolator. Housing made of sand cast aluminium. Housing is epoxy powder coated, to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, inserted into Amaplast insulation (unbreakable and heat resistant). Switch socket is watertight IP67 for outdoor installation. One bottom and top entry (40 mm) is provided for easy cable conduit termination.

**51-B**

**CEE SWITCHED SOCKET OUTLET INTERLOCKED WITH INTEGRATED CIRCUIT BREAKER - METAL IP67**

DIMENSIONS:	mm
WEIGHT:	
SOCKET:	7 kg
PLUG PVC:	1,1 kg
PLUG METAL:	2,5 kg

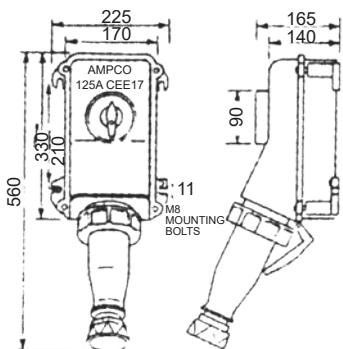


Round type sockets, mechanically interlocked, with circuit breaker (100A 5KA). Housing made of sand cast aluminium. Housing is epoxy powder coated, to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, inserted into Amaplast insulation (unbreakable and heat resistant). Switch socket is watertight IP67 for outdoor installation. One bottom and top entry (40 mm) is provided for easy cable conduit termination.





# CEE Plug Top and Socket Outlet - Metal



## CEE SWITCHED SOCKET OUTLET INTERLOCKED WITH INTEGRATED CIRCUIT BREAKER & EARTH LEAKAGE BREAKER - METAL IP67

52-A

DIMENSIONS: mm  
 WEIGHT:  
 SOCKET: 10 kg  
 PLUG PVC: 1,1 kg  
 PLUG METAL: 2,5 kg



### WITH CIRCUIT BREAKER/EARTH LEAKAGE COMBINATION AS ENFORCED BY THE OHS ACT<sup>1)</sup> AND SABS<sup>2)</sup>.

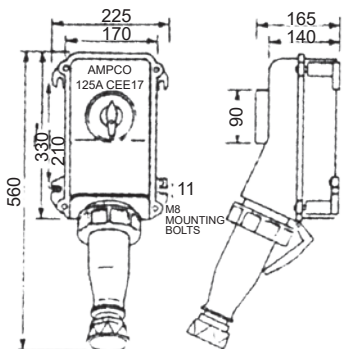
The AMPCO round type sockets are mechanically interlocked with a circuit breaker/ earth leakage combination 125Amp/30mA, with a rupturing capacity of 25kA at 380V and 15kA at 500V. The housing is made of sand cast aluminium and is epoxy coated in electric orange to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, incorporating LAM contacts in Amplast insulation, (unbreakable and heat resistant). Switch socket is watertight IP67 for outdoor installation. One bottom and top entry (40 mm) is provided for easy cable or conduit termination.

#### Special Safety Feature:

An incorporated earth leakage/circuit breaker unit will detect a fault and trip the socket where the actual fault occurs, namely in the plugged in equipment and not in a distribution board, which may be far distanced. In addition, the tripped socket will only render one user out of order and not a chain of sockets as in the case where one earth leakage unit protects a chain of socket outlets.

1) Extract from MOS ACT 1983 Paragraph 9/1  
 (This paragraph has retained its validity under the OHS. Act)  
**PORTABLE ELECTRIC TOOLS:**  
 No user shall permit the use of and no person shall use a portable electric tool the operating voltage of which exceeds 50V to earth unless it is connected to a source of electrical energy incorporating an earthleakage device...

2) Extraction from SABS 0142  
**The WIRING OF PREMISES:**  
 6.15.4.4 Three-phase socket outlet (including "welding" socket outlets) shall comply with the requirements of SABS 1239) SANS/IEC60309-1+2, and, except as allowed in 6.15.4.5, shall have earth leakage protection if the circuit is intended to supply portable or stationary three-phase Class 1 appliances.



## SWITCHED DUAL INTERLOCK SOCKET OUTLET METAL WITH CONTACTOR & OVERLOAD OPTIONAL IP67

52-B

DIMENSIONS: mm  
 WEIGHT:  
 SOCKET: 10 kg  
 PLUG PVC: 1,1 kg  
 PLUG METAL: 2,5 kg



Round type sockets, with contactor electrically interlocked, via a micro switch and operated from push buttons (ON/OFF), mounted on the socket front. Housing made of sand cast aluminium. Housing is epoxy powder coated to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are zinc yellow plated. Inserts manufactured of brass, incorporating LAM contacts, inserted into Amplast insulation (unbreakable and heat resistant). Switch socket is watertight IP67 for outdoor installation. One bottom and top entry (40mm) is provided for easy cable or conduit termination. Siemens contactor is standard.

#### AVAILABLE ON REQUEST IN:

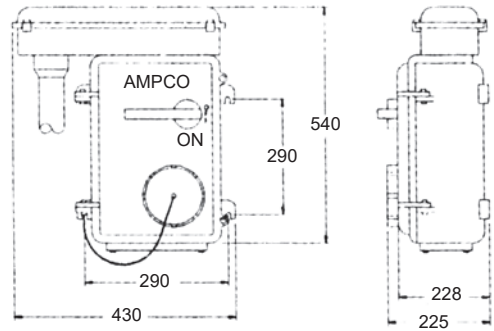
- 125 AMP 4 POLE (3 phase & earth) 380V
- 125 AMP 5 POLE (3 phase, neutral & earth) 380V
- 125 AMP 4 POLE (3 phase & earth) 500V



# CEE Plug Top and Socket Outlet - Metal

53-A

## IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH TOP CONNECTION BOX FOR BOTTOM CABLE ENTRY EXTENSION TO CEE RANGE (IEC 309 PART 1 ONLY)



DIMENSIONS: mm

WEIGHT: 21 kg

M10 MOUNTING BOLTS



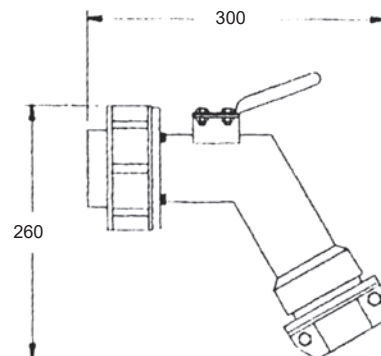
Round watertight type socket, mechanically interlocked, with on-load fuse isolator. The socket housings are manufactured of sand cast aluminium SA14 (SABS 989/992-1970)(BS) and are epoxy powder coated in electric orange to give an attractive appearance and a lasting finish, even in coastal atmospheres. All screws and springs are zinc yellow plated. Female inserts are manufactured of silver plated brass, inserted into industrial nylatron 6M insulation and are heat resistant and unbreakable. Female pins incorporating LAM contacts ensure best electrical contact with minimal inserting and withdrawal force. Switch socket is IP67 protected and therefore watertight, suitable for outdoor installation. For easy cable termination from the bottom one removable top box is provided with 50mm diameter hole.

### Socket is manufactured to include the following:

- Suitable for 250A 500V 40-60 Hz operation - max 1 000V
- Fuse isolator manufactured to comply with IEC4 AC 22 380V/400A, 500V/400A, 660V/250A. Breaking capacity 2500A at 500V Short circuit making capacity (1s) 42 KA, Short circuit withstand (1s) 14 KA
- Strong industrial aluminium housing SA14
- Bolts and nuts as well as all springs are zinc yellow plated
- Housing epoxy powder coated in electric orange
- Competitively priced due to local manufacture
- Packed 1 socket unit per carton
- With removable top box allowing cable to be entered from bottom

53-B

## CEE WATERTIGHT ANGLED PLUGTOP - METAL IP67



DIMENSIONS: mm

WEIGHT: 3 kg



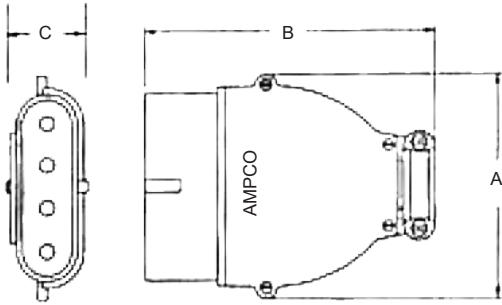
Round watertight type plug. Plug housings are manufactured of sand cast-aluminium SA14 (SABS 989/992-1970)(BS) and are epoxy powder coated in electric orange to give an attractive appearance and a lasting finish, even in coastal atmospheres. All screws and springs are zinc yellow plated. Male inserts are manufactured of silver plated brass, inserted into industrial nylatron 6M insulation and are heat resistant and unbreakable. IP67 protected and therefore watertight, suitable for outdoor installation.

### Plug is manufactured to include the following:

- Suitable for 250A 500V 40-60 Hz operation - max 1 000V
- Cable clamp for 50mm (max) cable diameter entry
- Locking ring to ensure water tightness to IP67
- Strong industrial aluminium housing SA14
- Bolts and nuts as well as all springs are zinc yellow plated
- Housing epoxy powder coated in electric orange
- Competitively priced due to local manufacture
- Packed 1 plug unit per carton
- With removable top box allowing cable to be entered from bottom



# DIN, Swedish Plugs and Sockets

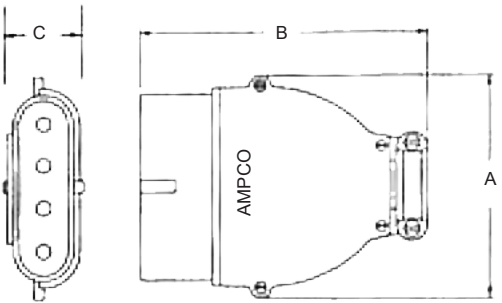


**PLUGS METAL, DIN TYPE IP44**

54-A

DIMENSIONS: mm

SIZE	A	B	C	MAX. CABLE ENTRY	WEIGHT
25 A	90	125	40	20 mm	0,5 kg
40 A	110	190	45	25 mm	0,75 kg
63 A	130	230	55	30 mm	1,20 kg
100 A	165	240	60	40 mm	1,50 kg
250 A	240	320	76	51 mm	4,40 kg
400 A ECO	240	320	76	60 mm	4,75 kg
400 A XL	240	360	76	71 mm	5,70 kg
630 A	240	360	76	71 mm	5,70 kg

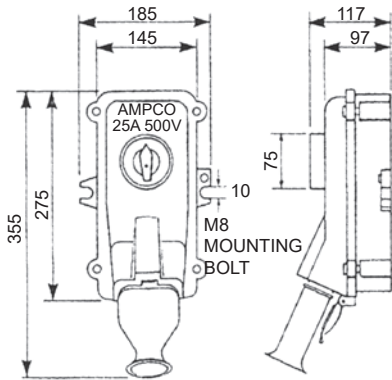


**PLUGS, PLASTIC DIN TYPE IP44**

54-B

DIMENSIONS: mm

SIZE	A	B	C	MAX. CABLE ENTRY	WEIGHT
25 A	90	115	48	20 mm	0,19 kg
40 A	112	183	53	25 mm	0,35 kg
63 A	130	195	60	30 mm	0,51 kg

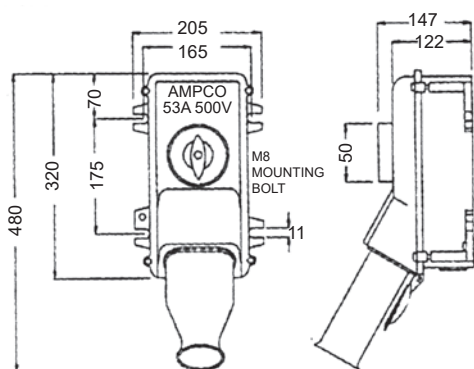


**SWITCHED SOCKET OUTLETS INTERLOCKED, METAL DIN TYPE IP44**

54-C

DIMENSIONS: mm

WEIGHT:  
SOCKET: 3,2 kg  
PLUG TOP: 0,5/0,7 kg



**SWITCHED SOCKET OUTLETS INTERLOCKED, METAL DIN TYPE IP44**

54-D

DIMENSIONS: mm

WEIGHT:  
SOCKET: 5 kg  
PLUG TOP: 1,2 kg



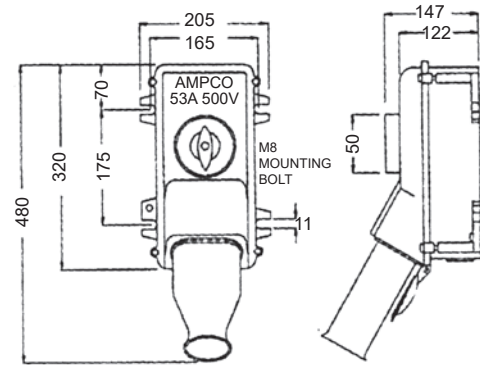


# DIN, Swedish Plugs and Sockets

**55-A**

## SWITCHED SOCKET OUTLETS INTERLOCKED WITH INTEGRATED CIRCUIT BREAKER, METAL DIN FLAT OVAL TYPE IP44

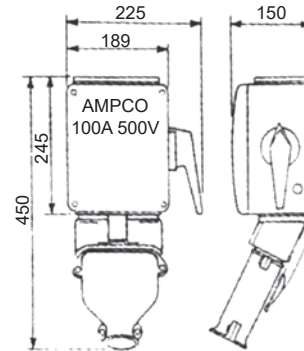
DIMENSIONS: mm  
WEIGHT: 5 kg  
SOCKET: 1,2 kg  
PLUG TOP:



**55-B**

## SWITCHED DUAL SOCKET OUTLET INTERLOCKED METAL DIN IP44

DIMENSIONS: mm  
WEIGHT: 7 kg  
SOCKET: 1,5 kg  
PLUG TOP:



**Note:**

Above socket units originate from the old German industrial norm DIN 49449 up to 100A. They are widely used units in South Africa and neighbouring countries. However they have to be phased out in South Africa before the year 2000 for new installations. See MASC Certificate on page 32.

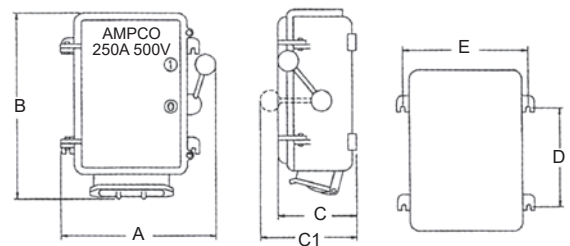
**55-C**

## SWITCHED SOCKET OUTLETS INTERLOCKED WITH SIDE OPERATED, METAL DIN FLAT OVAL TYPE IP44

DIMENSIONS: mm  
WEIGHT: 17 kg

AMPS	A	B	C	C1	D	E	ø	WEIGHT/KG
250	365	490	228	265	293	295	50	17
400	365	490	228	265	293	295	50	17

M10 MOUNTING BOLTS

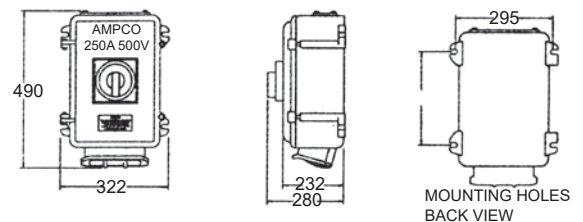


**55-D**

## SWITCHED SOCKET OUTLETS INTERLOCKED WITH FRONT OPERATED, METAL DIN FLAT OVAL TYPE IP44

DIMENSIONS: mm  
WEIGHT: 17 kg

M10 MOUNTING BOLTS



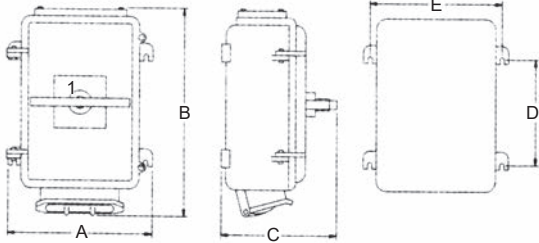
**Note:**

This unit is mechanically interlocked. Switch can only switch on once plug is fully inserted. In addition the socket cover can only be opened for inspection or maintenance if switch is in "OFF" position.





# DIN, Swedish Plugs and Sockets



## SWITCHED SOCKET OUTLETS INTERLOCKED WITH FRONT OPERATED, METAL DIN TYPE IP44

56-A

DIMENSIONS: mm

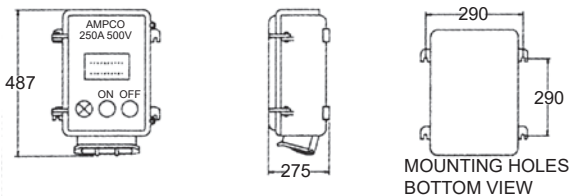
WEIGHT:  
400/630 A 30kg

AMPS	A	B	C	D	E	CABLE GLAND HOLE
400	400	600	320	290	375	74
630	400	600	320	290	365	74

M10 MOUNTING BOLTS

## SWITCHED SOCKET OUTLETS INTERLOCKED WITH CONTACTOR, METAL DIN TYPE IP44

56-B



DIMENSIONS: mm

WEIGHT:  
SOCKET 25,5kg  
PLUG TOP 5kg

M10 MOUNTING BOLTS

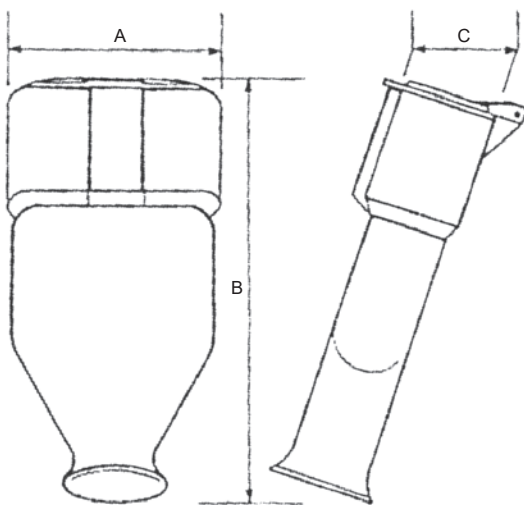
**Note:**

This unit is electrically interlocked via a microswitch. If plug is pulled under load the contactor will trip. Also contactor cannot be switched "ON" without plug being fully inserted into socket.

Provided the dimensions are suitable, any contactor of your choice can be fitted.

## CONNECTOR/COUPLER, METAL DIN TYPE IP44

56-C



DIMENSIONS: mm

SIZE	A	B	C	MAX. CABLE ENTRY	WEIGHT
25A	95	175	75	20mm	0,55kg
40A	110	200	80	25mm	0,75kg
63A	130	250	85	30mm	1,30kg
100A	155	240	100	40mm	1,60kg
250A	237	333	121	51mm	5,65kg
400A	237	333	121	71mm	6,00kg

**Note:**

Above couplers/socket units originate from the old German industrial norm DIN 49449 up to 100A. They are widely used in South Africa and neighbouring countries. However, they have to be phased out in South Africa before the year 2000 for new installations. See SABS letter on page 36 (250/400A never formed part of that standard and will not be phased out).

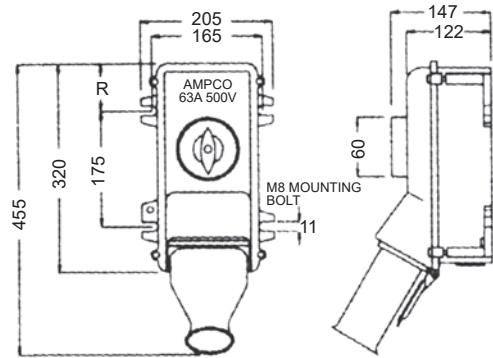
# Cewe Plugs Tops and Socket Outlets - Metal

57-A

## IP44 SPLASHPROOF, SWITCHED DUAL INTERLOCKED CEWE TYPE SOCKET - METAL

DIMENSIONS: mm  
WEIGHT: 5 kg

\*SCRAPING EARTH

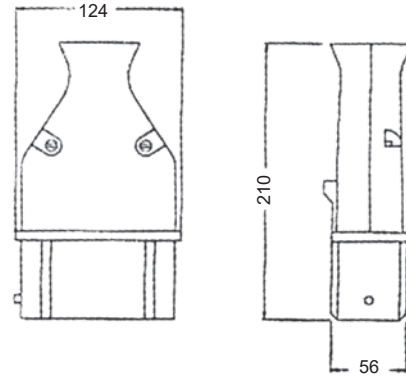


57-B

## IP44 SPLASHPROOF CEWE TYPE PLUG - METAL

DIMENSIONS: mm  
WEIGHT: 1,2 kg

\*SCRAPING EARTH



# CEE Plugs and Sockets - Moulded

57-C

## IP44 SPLASHPROOF, INTERLOCKED SWITCH SOCKETS, ECONOMY RANGE, TYPE EURONORM - MOULDED

DIMENSION TABLE in mm											WIRE SIZE min/max mm <sup>2</sup>	SWA CABLE GLAND SIZE	SWA CABLE core x mm <sup>2</sup>	
POLES	a	b	c	d	e	f	g	h	i	k				
16A	2P+E	100	190	120	190	5	76	130	30	40	21	0,75/2,5	0	3x1,5
	3P+E	100	190	125	190	5	76	130	30	40	21	0,75/2,5	0	4x1,5
	3P+N+E	100	190	130	200	5	76	130	30	40	21	0,75/2,5	0	5x1,5
32A	2P+E	100	190	130	200	5	76	130	30	40	21	1/6	1	3x4
	3P+E	100	190	130	200	5	76	130	30	40	21	1/6	1	4x4
	3P+N+E	100	190	135	200	5	76	130	30	40	21	1/6	1	5x4

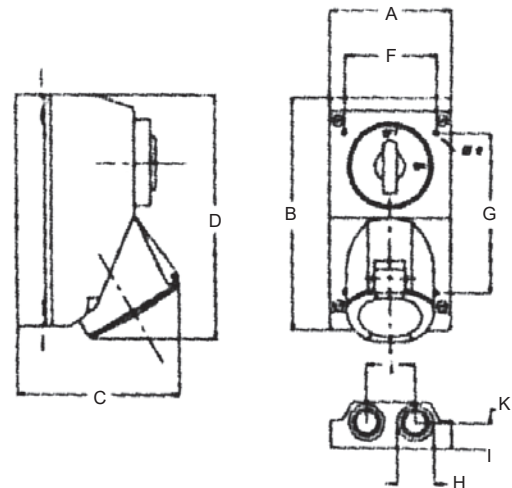


**NOTE:**

In cases where more than one socket is fed from same cable, i.e. loop in-loop out, maximum cable gland size is No. 2

**NOTE:**

also available with surge protection option!

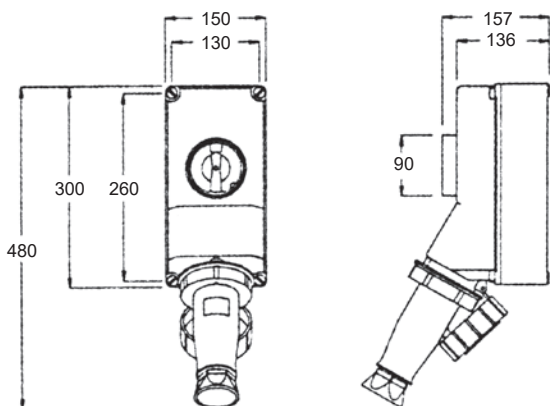




# CEE Plugs and Sockets - Moulded

## IP67 WATERTIGHT, DUAL INTERLOCKED SWITCHED SOCKET - MOULDED

58-A



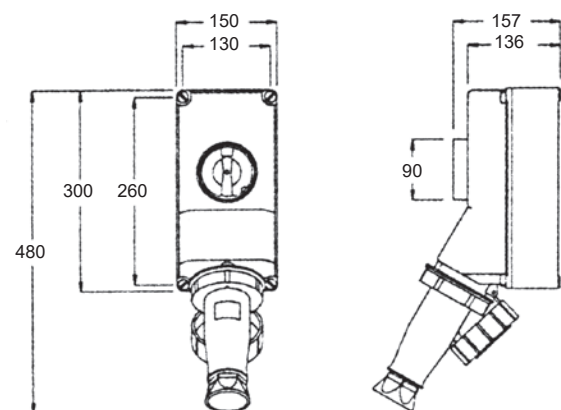
## IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH ISOLATOR ECONOMY RANGE, TYPE EURONORM - MOULDED

DIMENSION TABLE in mm										
	POLES	a	b	c	d	e	f	g	h	l
16A	2P+E	122	225	155	275	208	101	140	116	70
	3P+E	122	225	155	275	208	101	140	116	70
	3P+N+E	122	225	155	275	208	101	140	116	70
32A	2P+E	122	225	155	275	208	101	140	116	70
	3P+E	122	225	155	275	208	101	140	116	70
	3P+N+E	122	225	155	275	208	101	140	116	70
63A	3P+E	150	300	205	345	280	130	157	136	90
	3P+N+E	150	300	205	345	280	130	157	136	90



**Features**

- One top and two bottom entries (32mm) (Entries can be reversed)
- Protection class (IPX7 Outdoor use)
- Mechanical interlocking
- Lockable with padlock in off position in accordance with the MOS Act No. 6-1983 as amended (padlock optional)
- The housing consists of AMPLAST, a thermo plastic material, combining shape consistency with excellent electrical insulation properties. AMPLAST is low toxic, flame retardant and highly resistant to abrasion, heat, frost, ageing, oil, petrol and sea water. It is tough, dimensionally stable and virtually unbreakable.
- Compact switch, switching capacity according to:  
AC21 63A  
AC23 37kW at 380V  
30kW at 500V
- All contacts are manufactured of brass and female contacts are spring loaded for better heat dissipation.
- Inserts made of plastic and are virtually unbreakable.
- Mounting dimensions given at bottom of enclosure.
- Competitive pricing due to local manufacture.
- Packing: 1 off socket per carton (plug not included).



## IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH INTERGRATED CIRCUIT BREAKER, ECONOMY RANGE, TYPE EURONORM - MOULDED

58-B



**Features**

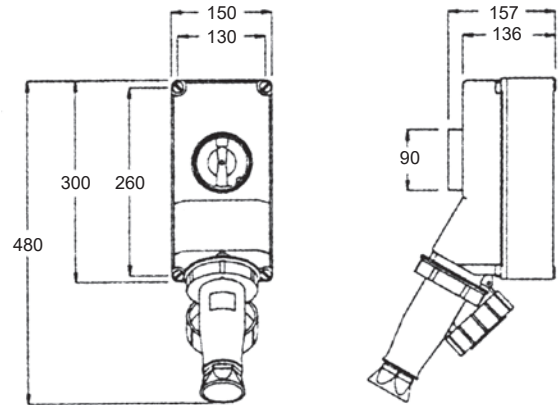
- One top and two bottom entries (32mm) (Entries can be reversed)
- Protection class IPX7 (Outdoor use)
- Mechanical interlocking
- Lockable with padlock in off position in accordance with the OHS Act No. 6-1983 as amended (padlock optional)
- The housing consists AMPLAST, a thermo plastic material, combining shape consistency with excellent electrical insulation properties. AMPLAST is low toxic, flame retardant and highly resistant to abrasion, heat, frost, ageing, oil, petrol and sea water. It is tough, dimensionally stable and virtually unbreakable.
- Mechanically interlocked circuit breaker 60A 5KA
- All contacts are manufactured of brass and female contacts are spring loaded for better heat dissipation
- Inserts made of plastic and are virtually unbreakable
- Mounting dimensions are placed inside the socket enclosure, as well as at the back of the socket base
- Competitive pricing due to South African manufacture
- Packing: 1 off socket per carton (plug not included)



# CEE Plugs and Sockets - Moulded

59-A

## IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH INTEGRATED EARTH LEAKAGE\*, ECONOMY RANGE, TYPE EURONORM - MOULDED



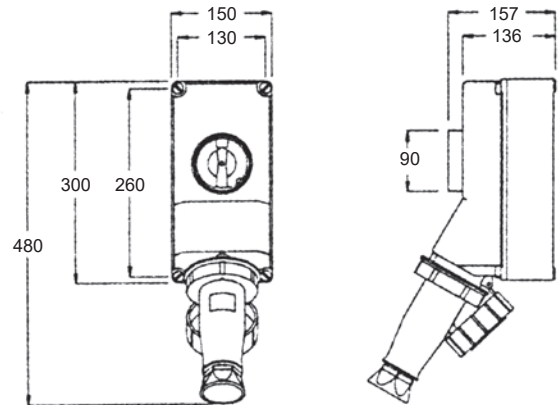
**Features**

- One top and two bottom entries (32mm) (Entries can be reversed)
- Protection class IPX7 (Outdoor use)
- Mechanical interlocking
- Lockable with padlock in off position in accordance with the OHS Act No. 6-1983 as amended (padlock optional)
- The housing consists of AMPLAST, a thermo plastic material, combining shape consistency with excellent electrical insulation properties. AMPLAST is low toxic, flame retardant and highly resistant to abrasion, heat, frost, ageing, oil, petrol and sea water.  
It is tough, dimensionally stable and virtually unbreakable

- \* Earth leakage - no overload protection  
380 -525V AC      50-60Hz      Earth fault max.30mA  
380V 10 KA      525V 3KA      Operating time max 0,1sec
- All contacts are manufactured of brass and female contacts are spring loaded for better heat dissipation
- Inserts made of plastic and are virtually unbreakable
- Mounting dimensions are placed inside the socket enclosure, as well as at the back of the socket base
- Competitive pricing due to South African manufacture
- Packing: 1 off socket per carton (plug not included)

59-B

## IP67 WATERTIGHT, DUAL INTERLOCKED SWITCH SOCKET WITH INTEGRATED EARTH LEAKAGE AND CIRCUIT BREAKER, ECONOMY RANGE, TYPE EURONORM - MOULDED



**Features**

- One top and two bottom entries (32mm) (Entries can be reversed)
- Protection class IPX7 (Outdoor use)
- Mechanical interlocking
- Lockable with padlock in off position in accordance with the OHS Act No. 6-1983 as amended (padlock optional)
- The housing consists of AMPLAST, a thermo plastic material, combining shape consistency with excellent electrical insulation properties. AMPLAST is low toxic, flame retardant and highly resistant to abrasion, heat, frost, ageing, oil, petrol and sea water.  
It is tough, dimensionally stable and virtually unbreakable

- Circuit breaker/Earthleakage combination  
380 -525V AC      50-60Hz      Earth fault max.30mA  
380V 25 KA      525V 15KA      Operating time max 0,1sec
- All contacts are manufactured of brass and female contacts are spring loaded for better heat dissipation
- Inserts made of plastic and are virtually unbreakable
- Mounting dimensions are placed inside the socket enclosure, as well as at the back of the socket base
- Competitive pricing due to South African manufacture
- Packing: 1 off socket per carton (plug not included)

**NOTE:**

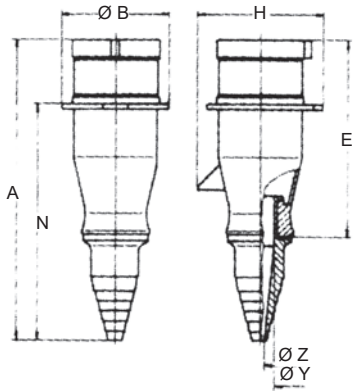
All "63A" EURONORM sockets have the same dimensions and appear the same from outside.







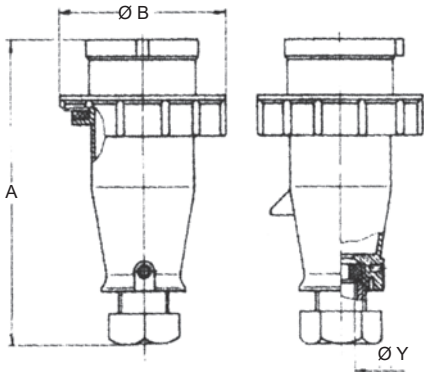
# CEE Plugs and Sockets - Moulded



IP44 SPLASHPROOF PLUG - MOULDED

60-A

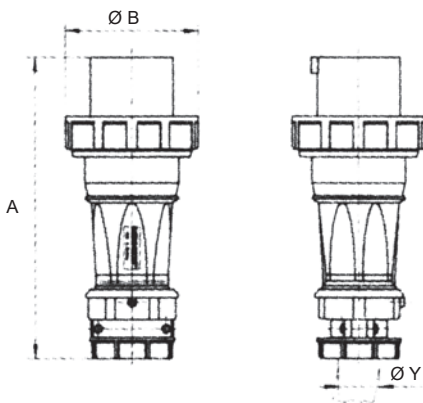
Amp.		16			32		
Pole		3	4	5	3	4	5
Dimensions	a	145	169	169	213	213	214
	b	52	59	67	71	71	77
in mm	n	59	66	73	83	83	90
	m	106	116	116	141	141	141
	n	108	132	132	168	168	168
	y	14	16,5	16,5	24	24	24
	z	6	7,5	7,5	7	7	7



IP67 WATERTIGHT PLUG - MOULDED

60-B

Amp.		16			32		
Pole		3	4	5	3	4	5
Dimensions	a	162	172	186	199	199	213
	b	71	79	89	95	95	102
in mm	y	19	19	22	24,5	24,5	28,5



Amp.		63			125		
Pole		3	4	5	3	4	5
Dimensions	a	246	246	246	293	293	293
	b	114	114	114	131	131	131
in mm	y	36	36	36	50	50	50

Electronic  
Earth leakage Test Plugs

63A4P380V	CAT A 0149
63A4P500V	CAT A 0150

PICTURE: SEE PAGE 47



NOTE:

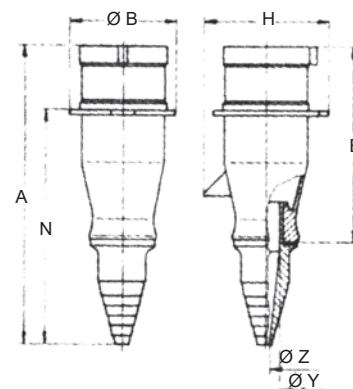
All "A" numbers represent ex stock items. All other numbers are available on request.



# CEE 7 Pole Plugs and Sockets - Moulded

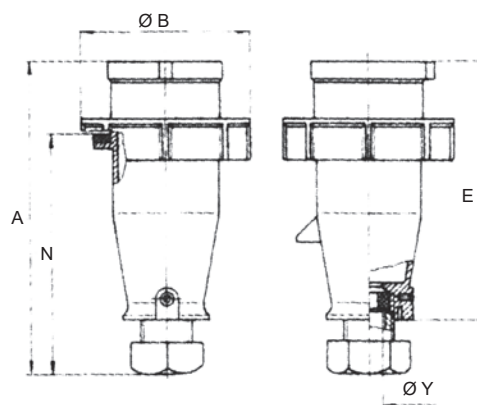
**61-A IP67 WATERTIGHT PLUG - MOULDED**

Amp.		16	32
Pole		7	7
Dimensions in mm	a	169	214
	b	67	77
	h	73	90
	m	116	141
	n	132	168
	y	16,5	24
	z	7,5	7



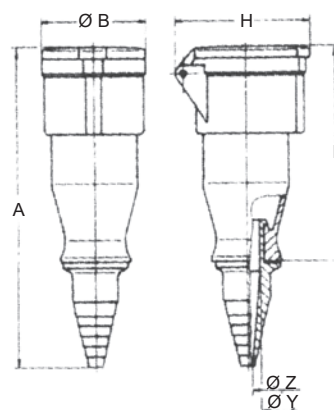
**61-B IP67 WATERTIGHT PLUG, 7 POLE (6P+E) - MOULDED**

Amp.		16	32
Pole		7	7
Dimensions in mm	a	138	166
	b	87	102
	m	116	141
	n	106	126
	y	16	21,5



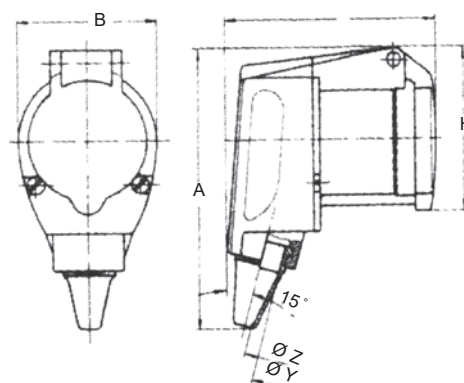
**61-C IP44 SPLASHPROOF CONNECTOR (COUPLER) - MOULDED**

Amp.		16			32		
Pole		3	4	5	3	4	5
Dimensions in mm	a	155	177	177	225	225	225
	b	51	58	66	66	66	73
	h	69	77	85	88	88	95
	m	115	124	124	150	150	150
	y	14	17,5	17,5	24	24	24
	z	6	7,5	7,5	10	10	10



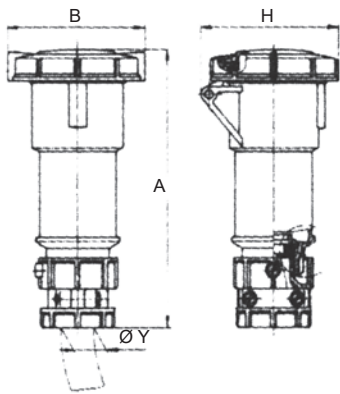
**61-D IP44 SPLASHPROOF CONNECTOR (COUPLER), ANGLED - MOULDED**

Amp.		16
Pole		3
Dimensions in mm	a	118
	b	59
	h	69
	i	88
	y	17,5
	z	7





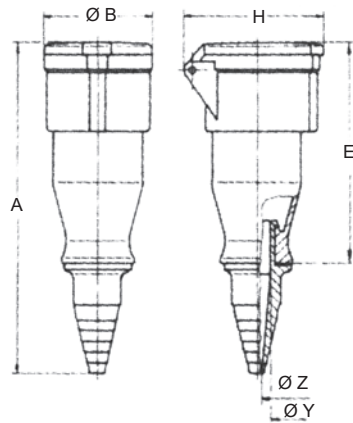
# CEE Plugs and Sockets - Moulded



**IP67 WATERTIGHT, CONNECTOR (COUPLER)  
- MOULDED**

62-A

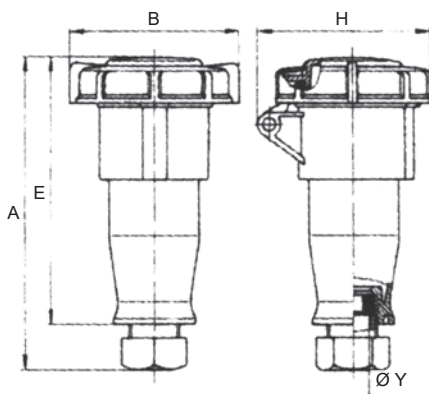
Amp.		16			32		
Pole		3	4	5	3	4	5
Dimensions in mm	a	171	182	194	217	217	229
	b	78	85	96	103	103	110
	h	79	88	95	99	99	105
	y	19	19	22	24,5	24,5	28,5



**IP44 SPLASHPROOF CONNECTOR (COUPLER)  
7 POLE (6P+E) - MOULDED**

62-B

Amp.		16	32
Pole		7	7
Dimensions in mm	a	177	225
	b	66	73
	h	85	95
	m	124	150
	y	17,5	24
	z	7,5	10



**IP67 WATERTIGHT CONNECTOR (COUPLER)  
- MOULDED**

62-C

Amp.		16	32
Pole		7	7
Dimensions in mm	a	149	181
	b	96	110
	h	95	105
	m	131	158
	y	16	21,5



**NOTE:**

All "A" numbers represent ex stock items. All other numbers are available on request. Other voltages are also available on request.



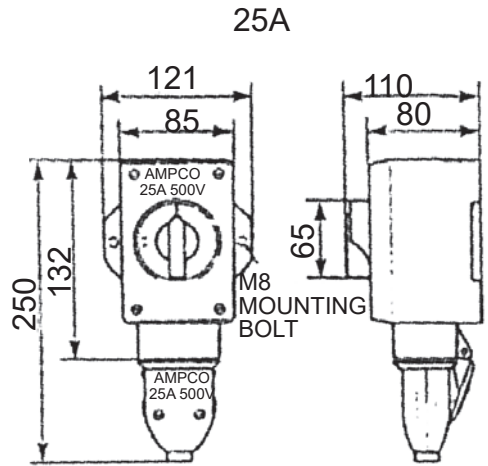
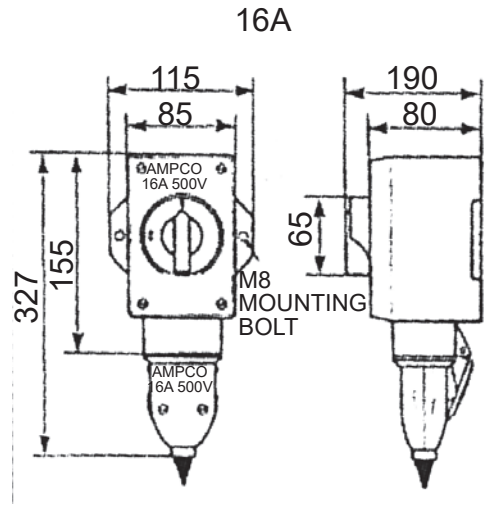
# Nova Plugs and Sockets



63-A

## AMPCOVA AMPLAST SOCKET OUTLETS IP44 3P+E 400V

DIMENSIONS: mm  
WEIGHT: 0,5kg  
16A 0,5kg  
25A 0,5kg



63-B

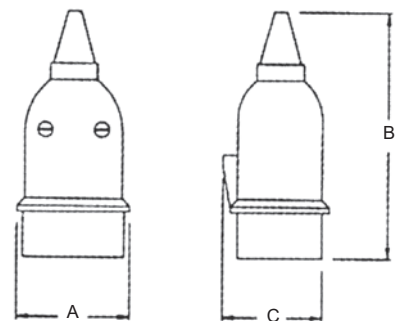
## AMPCOVA AMPLAST PLUG IP44 3P+E 400V

DIMENSIONS: mm

DIMENSIONS: IN mm

Size	A	B	C
16A	60	130	49
25A	74	157	57

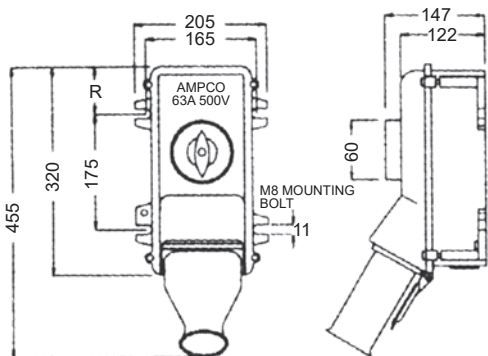
WEIGHT: 0,05kg  
16A 0,10kg  
25A







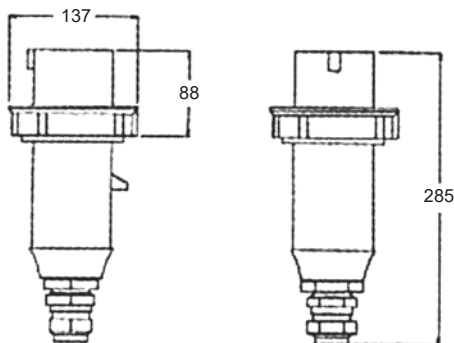
# Explosion Protected Plugs and Sockets



**IP67 WATERTIGHT, SWITCHED DUAL INTERLOCKED SOCKET - METAL 63A 380V - 500V, 50Hz ZONE 1**

64-A

DIMENSIONS: mm



**IP67 WATERTIGHT PLUG - METAL 63A 380V - 500V, 50Hz ZONE 1**

64-B

DIMENSIONS: mm



## AMPCO® EXPLOSION PROTECTED PLUGS AND SOCKETS 63 A 380 V - 500 V Switched Dual Interlocked

Zone 1 AMPCO® Switch Sockets are manufactured to include the following:

### Salient Features

- Switch knob, lockable in "off" position
- One top and one bottom entry (32mm)
- Protection Class  $\bullet\bullet$  IP 67
- Mechanically interlocked
- All contacts are manufactured of brass and female contacts are Type Multilams with torsion spring louvers
- Inserts are made of plastic and are virtually unbreakable
- Competitive pricing due to South African manufacture
- Packing: 1 off socket per carton (plug not included)

The design is in accordance with SANS/IEC 60309 Part 1 + 2 + 3. SANS 60309-1 for general requirements, SANS 60309-2 for dimensional requirements, SANS 60309-3 for particular requirements for use in explosive gas atmospheres, SANS/IEC 79-0 increased Safety "e", SANS 314 (IEC 79-1) flame proof enclosures, SABS 1031 type "e" apparatus for use in flammable gas atmospheres, SABS 969 enclosures for use in Class II Div. 1 + 2 locations (dust ignition proof), SABS 970 Non-sparking for use in Class 1 Div 1 locations, SABS 1222 (IEC 529) classification of degrees of protection provided by enclosures.

Certificate of conformity is existent and available on request. Plugs and Sockets correspond with National (SABS 1239) and International Standards (IEC 60309 Part 1 + 2). Therefore the explosion protected plugtop can be inserted into a normal CEE round type socket. A normal CEE plugtop, however, cannot mate an explosion protected socket!

Switch socket and plug body are manufactured from an aluminium alloy LM24 in a high pressure die cast process and is epoxy coated in hammer grey to give an attractive appearance and a lasting finish, even in coastal atmospheres. All springs and screws are stainless steel. Contact pins are manufactured of brass and bedded in Amplast insulation (unbreakable and heat resistant) One bottom and top entry (32mm) is provided for easy cable termination The socket is fitted with one EXe blanking plug.

**LOCATIONS:**  
**HAZARD FREQUENCY:**

Zone 1 (Class 1 Div 1) gas surface intermittent, occurring under normal operating conditions in hazardous areas Group IIA to IIC Propane to Hydrogen T4  
Explosion protected Ex ed II T4/DIP

**ENVIRONMENT:**  
**LIMITING TEMPERATURE:**  
**CERTIFIED:**



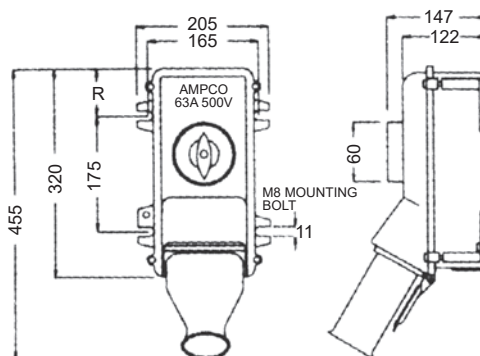
# Explosion Protected Plugs and Sockets



**AMPCO**

65-A

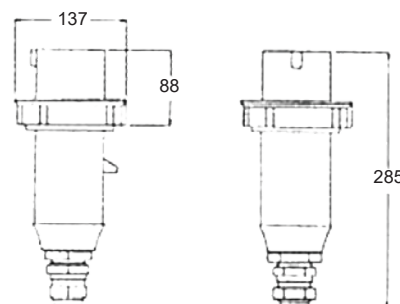
## IP67 WATERTIGHT, SWITCHED DUAL INTERLOCKED SOCKET - METAL 63A 380V - 500V, 50Hz



DIMENSIONS: mm

65-B

## IP67 WATERTIGHT PLUG - METAL 63A 380V - 500V, 50Hz



DIMENSIONS: mm



### AMPCO® EXPLOSION PROTECTED PLUGS AND SOCKETS ZONE 2, CLASS I, DIVISION 2 LOCATIONS

These are locations in which operations concerned with flammable or explosive substances, gases, or vapours or volatile liquids are so well controlled that an explosive or ignitable concentration is only likely to occur under abnormal conditions.

**NOTE 1: The following shall be regarded as the minimum requirements for a location to which this classification is applicable.**

- The area is so well ventilated that, if abnormal conditions arise, ignitable concentrations of the gas or vapour are rapidly dispersed and their possible contact with electrical equipment is of minimum duration.
- Complete segregation from any Class I, Division 0 or 1 location is ensured, in the case of enclosed premises by the use of a gasproof structure and the absence of doorways, ventilating ducts, and trenches communicating with such locations, and in the case of open premises by the distance between the area and such locations being great enough to ensure safety in any atmospheric conditions.
- Bursting discs and relief valves on the containers of the flammable liquids, gases, or vapours are situated (or so arranged as to vent) outside the area and in positions where, if they operate, no additional risk is introduced to the area.
- There is no point at which, under normal operating conditions, a flammable liquid, gas, or vapour is in direct contact with the surrounding atmosphere.
- All vessels, pumps, pipes, and fittings containing flammable liquids, gases, or vapours are so constructed and maintained as to prevent any significant leakage.

**NOTE 2: The following are examples of Class I, Division 2 locations.**

- A distillation unit on open premises, with or without a roof, and in which a flammable liquid is distilled. Such a unit may extend over several floors that house pumps, pipework, vapourizers, distillation, storage, and pressure vessels, but relief valves must be connected to a closed system or so arranged as to discharge into the open air under emergency conditions only.
- An area where equipment (such as pumps, vessels, and pipework) containing flammable liquids, gases, or vapours is installed in the open air or outside buildings that enclose a Class I, Division 1 location, any openings in the enclosing walls being far enough away from non-flameproof electrical apparatus to

ensure that the apparatus will not be exposed to a flammable concentration of the dangerous substance.

- An instrument control bay equipped with pipes, valves, and instruments and segregated from any Class I, Division 1 location with which it is associated. (Where supervision of such an area is involved, hermetically sealed windows of strengthened glass should be provided in the common wall.)
- Areas surrounding the walls of a tank installed in the open air and having a floating roof, and in which a flammable liquid is stored. Where the tank is surrounded by a bund wall, the classification of the area inside the bund wall depends on the probability of a flammable concentration arising within the wall under any foreseeable conditions.

**NOTE: The space within the tank and above the roof is classified as a Class I, Division 1 location.**

- The area surrounding a motor-driven compressor of flammable gases and in which the sealing and ventilation of the compressor are such as to prevent the exposure of the motor to a flammable concentration of the gas.
- Open air loading and unloading areas for road or rail tankers (used for transporting e.g. flammable liquids), where the use of flexible pipes is confined to the connection to the vehicle, a closed system is used, rapid drainage for any escaping liquid is provided, valves are well maintained, and blank flanges are fitted over pipe ends whenever the pipes are not in use.

**AMPCO plugs and sockets fulfill the following requirements:**

- Switched, interlocked wall mounted sockets fitted with a fully encapsulated switch and its enclosure complies at least with IP 54. An internal overpressure of 4 mbar requires more than 30 seconds to drop to 2 mbar.
- Plugs and sockets are interlocked so that the plugs may be inserted and withdrawn only with the voltage switched off.
- Zone 2 is harmonized in many countries.
- In South Africa Zone 2 complies with SABS 970-1971.

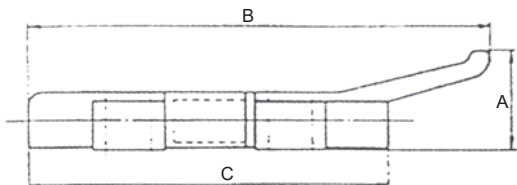
This specification covers constructional requirements for "EX N" (non-sparking electrical equipment for use in potentially flammable atmospheres Class I, Division 2 Locations) as defined in SABS 0108 and IEC 79-10, 1986. Attention is drawn to the fact that such electrical installations are subject to regulations framed under the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983) or the Mines and Works Act, 1956 (Act 27 of 1956) both Acts as latest amended and possibly also to other Regulations such as Municipal By-laws!

Note: "EX N" - equipment is not considered suitable for use in hazardous areas such as in a fiery mine. Electrical apparatus intended for use in hazardous areas such as in fiery mines is subject to approval by the Government Mining Engineer.





# Direct current Plugs, Sockets and Connectors



## 320 A BATTERY VEHICLE PLUGS, TYPE FEM, IP23 - NEOPRENE RUBBER

66-A

STYLE	A APPROX.	B APPROX.	C APPROX.
320A	75mm	310mm	290mm

DIMENSIONS (mated connector)



Rated at 320A 150V DC  
This DC connector has been designed to comply with various European standards, amongst other FEM Section 4.

### Special Features:

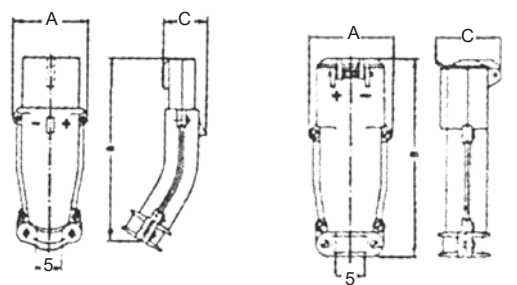
- Codeable for 24/36/43/72/80/96V - once coded they cannot be interchanged with other voltages
- Absolutely safe even under full load of 320A (VDE Finger Acc. to VDE 0470 3)
- 2 20A pilot contacts with late make/early break feature (optional)
- Connector very compact
- Connector virtually unbreakable
- Flame resistant

### Technical Data:

**Style:**  
Number of contacts: **320A**  
2 main contacts  
ø 10mm (+/-)  
2 aux. contacts+  
ø 4mm  
320A/20A  
Rated current: 150V max.  
Rated voltage: 24/36/48/72/80/96 V  
Polarised voltages indicator:  
Temperature range: -25° to 90°C  
Wire section: 5  
0/70/95 mm<sup>2</sup>  
Contacts: Male live - copper, silver plated  
Female live - copper, silver plated  
Aux. pins - brass, nickel plated

Terminations: Solder  
Protective system: IP23  
Shell material: Neoprene rubber

+If pilot function is desired as an optional extra (for example for contactor control, etc.)



## 250A BATTERY VEHICLE PLUGS AND SOCKETS, TYPE DIN, IP44, 500V WITH 30A AUXILIARY CONTACTS - METAL

66-B

### Stock no. Plugs

Stock no.	AMP	A	B	C	S/max.
A1203	250	127	270	76	51,5

### Stock no. Connectors

Stock no.	AMP	A	B	C	S/max.
On request	250	113	300	90	51,5

### Stock no. Flush-mounted Socket outlets

Stock no.	AMP	A	B	C	H	K	L	Q	R	S	T	U
A1204	250	140	100	143	50	9	8	115	75	86	120	15

DIMENSIONS: mm



High quality standard connector for charging and powering electric vehicles.

### 2 Pole 250A 500V DC + 2 Aux 30A

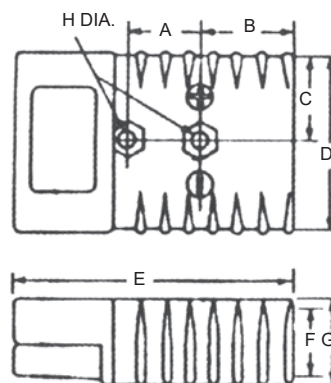
Rated at 250A and 250V the 2 pole AMPCO CONNECTOR has copper alloy contacts. They are supported inside aluminium housing by Tufnol insulation blocks. Contacts may be either screwed or soldered to the cable. The AMPCO DC CONNECTOR has brass, nickel plated contacts with the female pins fitted with multilam contacts and provides as a standard two 30A auxiliary contacts for safety circuits (late make/early break) power meters, relays or charger control units.



# Direct current Plugs, Sockets and Connectors

67-A

## 50A BATTERY VEHICLE PLUGS, TYPE "S", 2 POLE, IP23 - MOULDED



DIMENSIONS: mm



This connector is widely used on forklifts and is compatible with other makes of same dimensions and specifications.

### Characteristics:

- Max. Voltage: 600V
- Amperage: 50, 175, 350A
- Temperature class: -40°C +125°C
- Housings: Polycarbonate or polyamide, resistant to acid, solvents and hydrocarbons
- Contacts: Electrolytic copper, galvanic silver plating, protection against tarnishing, to be crimped or soldered
- Springs: Spring steel zinc yellow plated

### Voltage Colour-Keying is a Good Safety Practice

Therefore, for the sake of safety, S Connectors® are produced in a range of colours, none of which are interconnectable. Only connectors of the same colour will interconnect.

The recommended voltage/colour combinations are:

Yellow: 12V Grey: 36V  
 Orange: 18V Blue: 48V  
 Red: 24V Green: 72V

### Accessories:

- PVC handle for 50/175/350 connector  
Stock No. A2028
- Locking handle with cable clamp for 350A  
Stock No. A2019
- Locking handle without cable clamp for 350A  
Stock No. A2029
- Mounting half for 350A connector  
Stock No. A2020

### Note:

- S50 max 16mm<sup>2</sup> wire
- S175 max 50mm<sup>2</sup> wire
- S350 max 70mm<sup>2</sup> wire

### Note:

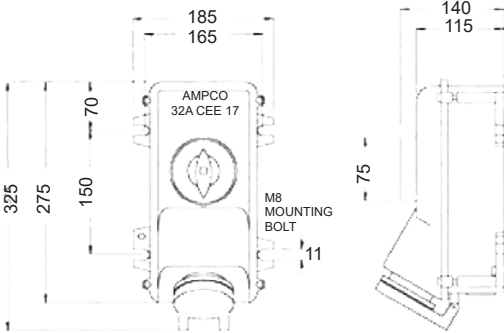
All "A" numbers represent ex stock items.  
 All other numbers are available on request.







# Special Plugs, Sockets and Isolator Switches



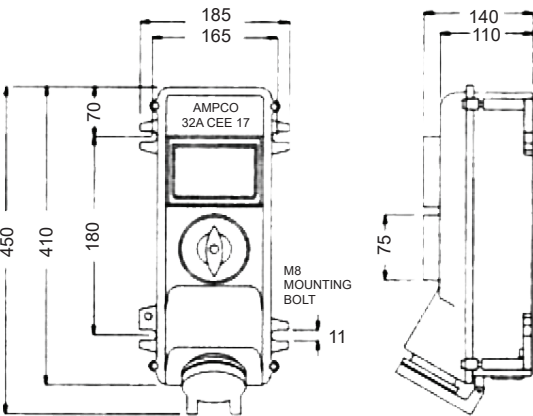
## 32A REFRIGERATED DUAL INTERLOCKED CONTAINER SOCKETS, 380/440V, IP44 METAL ENCLOSURE (ALU) EARTH POSITION 3h

68-A

Protection index: IP44 - socket only  
IP67 - plug inserted and ring locked

DIMENSIONS: mm

WEIGHT:  
SOCKET 3,2kg  
PLUG PVC 0,165kg  
PLUG METAL 0,365kg



## 32A REFRIGERATED DUAL INTERLOCKED CONTAINER SOCKETS, 380/440V, IP44 METAL ENCLOSURE (ALU) EARTH POSITION 3h - WITH WINDOW COMPARTMENT

68-B

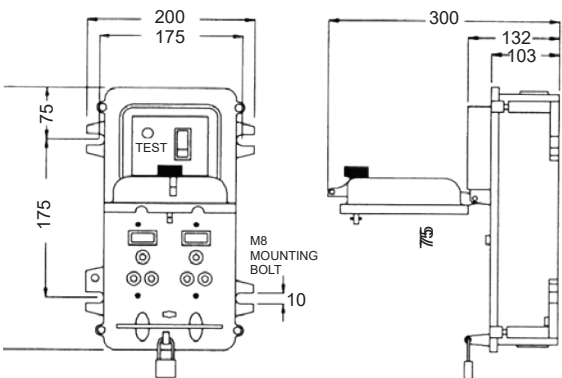
Protection index: IP44 - socket only  
IP67 - plug inserted and ring locked

DIMENSIONS: mm

WEIGHT:  
SOCKET 3,2kg  
PLUG PVC 0,165kg  
PLUG METAL 0,365kg



The unit's robust housing is made of sand cast aluminium and provides a transparent compartment (including standard DIN rail) to incorporate an earth leakage and/or circuit breaker to render the unit compliant with SANS 10142 and the OHS Act. If the need arises, other control equipment such as Kilowatt hour metre, voltage surge protector, contactor, emergency light or timer can be installed into transparent compartment.



## 16A SINGLE PHASE INDUSTRIAL SOCKET OUTLET, IP44, 250V

68-C

DIMENSIONS: mm

WEIGHT: 3,5kg



This AMPCO® industrial socket consists of 2 only 16A 2 pole + earth 250V switch sockets in accordance with the conventional National Standard SANS 164/0/1/2/3/4/5/6. (Plugs and Socket outlet for household and similar purposes). It was designed for heavy duty and outdoor applications as required in Mines on surface and underground (not suitable in hazardous areas such as on fiery mines) steel works, harbours, railway shunting yards etc. - in fact anywhere where a single phase 16A 250V power source is needed in a wet and dusty environment.

The unit's robust housing is made of sand cast aluminium and provides a window compartment (including standard DIN rail) to incorporate an earth leakage and/or circuit breaker to render the unit to be in compliance with SANS 10142 and the OHS Act.

If need arises other control equipment such as Kilowatt hour meter, voltage surge protector, contactor, emergency light and timer can be installed into the window compartment.

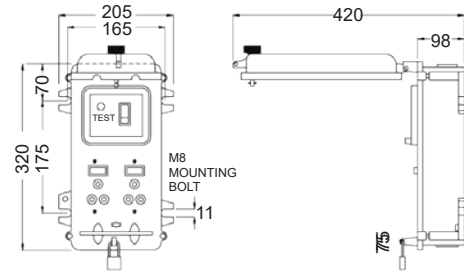
The hinged metal cover provides IP54 protection in plugged or unplugged condition and is therefore suitable for outdoor use. The lid can also be locked with a padlock to "lock in" or "lock out" plugs preventing unauthorised persons to tamper with the power source. The housing is epoxy powder coated in "electrical" orange to give an attractive appearance and lasting finish, even in coastal atmospheres. All springs and screws are cadmium plated. One bottom and one top entry (32mm) is provided for easy cable or conduit termination.



# Special Plugs, Sockets and Isolator Switches

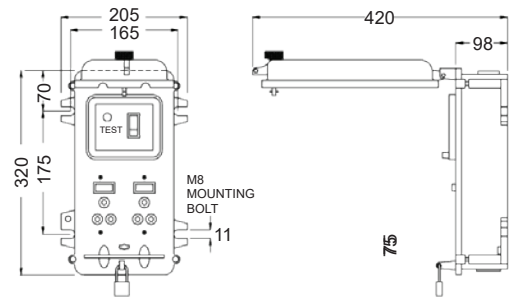
**69-A 16A SINGLE PHASE INDUSTRIAL SOCKET OUTLET, IP44 250V AS ABOVE, WITH COVERED AND LOCKABLE DISTRIBUTION BOX**

DIMENSIONS: mm  
WEIGHT: 4kg



**69-B 16A SINGLE PHASE INDUSTRIAL SOCKET OUTLET, IP44, 250V AS ABOVE, LOCKABLE WITHOUT DISTRIBUTION BOX**

DIMENSIONS: mm  
WEIGHT: 3kg

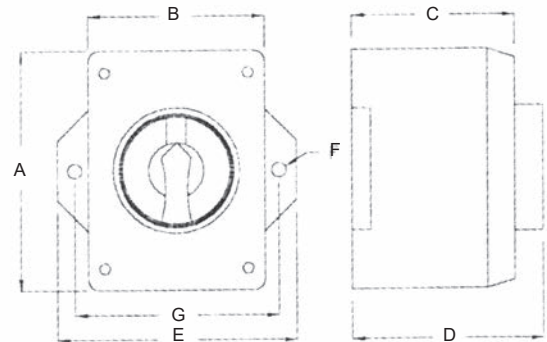


**69-C 16A SINGLE PHASE INDUSTRIAL SOCKET OUTLET, IP44, 250V AS ABOVE, LOCKABLE WITHOUT DISTRIBUTION BOX**

NEW PRODUCT  
TECHNICAL INFORMATION  
AVAILABLE ON REQUEST

**69-D 16/32A SPLASHPROOF OFF LOAD ISOLATOR SWITCH, IP65 3+4 POLE - MOULDED**

AMPAGE	DIMENSIONS mm							WEIGHT gram
	A	B	C	D	E	F	G	
16A	120	80	85	100	112	6	91	350
32A	130	95	90	110	131	7,5	110	400



The housings are moulded in Amplast, a high strength plastic with the following characteristics:

- Good electrical insulation
- High mechanical strength
- Wear resistant
- Abrasion resistant
- Dimensionally stable
- Self extinguishing
- Heat resistant
- Resistant to cold
- Resistant to ageing
- Seawater Resistant

**SPECIAL FEATURES:**

- Two top, two bottom entry 20mm
- Rigid enclosure
- Ample space for wiring
- Padlocking facilities
- Housing in electric orange or grey

AMPCO Isolater switches are compact, durable and very cost effective to disconnect or isolate motor circuits and upgrade facilities. Two different size enclosures are available.

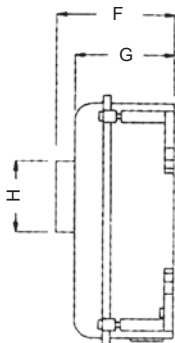
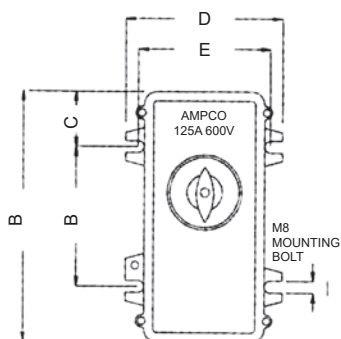




# Special Plugs, Sockets and Isolator Switches

## 63/125A SPLASHPROOF ISOLATOR SWITCH, IP65, 3 + 4 POLE - METAL

70-A



AMPS	A	B	C	D	E	F	G	H	I	WEIGHT/kg
63	310	170	70	185	165	157	137	75	M8	3,3
125	325	210	55	225	195	190	165	75	M8	4,5



AMPCO ISOLATOR SWITCHES ARE COMPACT, DURABLE AND VERY COST EFFECTIVE TO DISCONNECT OR ISOLATE MOTOR CIRCUITS AND UPGRADE FACILITIES. THE HOUSING IS MADE OF SAND CAST ALUMINIUM AND IS ORANGE POWDER COATED, ALL SCREWS ARE CADMIUM PLATED.

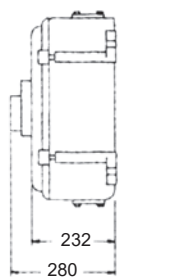
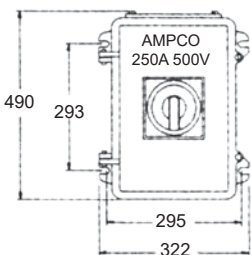
**SPECIAL FEATURES:**

- One top, one bottom entry
- Rigid enclosure
- Housing in electric orange

- Ample space for wiring
- Padlocking facilities
- IP Rating: IP65

**TECHNICAL SPECIFICATIONS:**

- 63A 500V 30kW AC23
- 125A 500V 55kW AC23



M10 MOUNTING BOLTS

## 250A SPLASHPROOF ISOLATOR SWITCH, IP65, 3 + 4 POLE - METAL

70-B

DIMENSIONS: mm

WEIGHT: 13,5kg



AMPCO ISOLATOR SWITCHES ARE COMPACT, DURABLE AND VERY COST EFFECTIVE TO DISCONNECT OR ISOLATE MOTOR CIRCUITS AND UPGRADE FACILITIES. THE HOUSING IS MADE OF SAND CAST ALUMINIUM AND IS ORANGE POWDER COATED, ALL SCREWS ARE CADMIUM PLATED.

**SPECIAL FEATURES:**

- One top, one bottom entry
- Rigid enclosure
- Housing in electric orange

- Ample space for wiring
- Padlocking facilities

**TECHNICAL SPECIFICATIONS:**

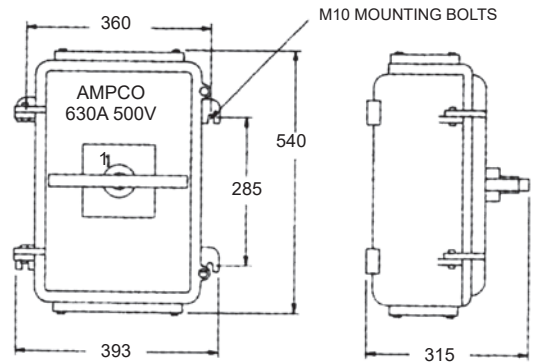
- 250A 500V 130kW AC23
- IP Rating: IP65



# Special Plugs, Sockets and Isolator Switches

71-A

## 250A SPLASHPROOF ISOLATOR SWITCH, IP65, 3 + 4 POLE - METAL



DIMENSIONS: mm  
WEIGHT: 13,5kg



AMPCO ISOLATOR SWITCHES ARE COMPACT, DURABLE AND VERY COST EFFECTIVE TO DISCONNECT OR ISOLATE MOTOR CIRCUITS AND UPGRADE FACILITIES. THE HOUSING IS MADE OF SAND CAST ALUMINIUM AND IS ORANGE POWDER COATED, ALL SCREWS ARE CADMIUM PLATED.

### SPECIAL FEATURES:

- One top, one bottom entry
- Rigid enclosure
- Housing in electric orange
- Ample space for wiring
- Padlocking facilities

### TECHNICAL SPECIFICATIONS:

- 250A 500V 130kW AC23
- IP Rating: IP65





# Notes

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# POWERTOWER, Retractable, Service Distribution Boards up to IP67, Watertight

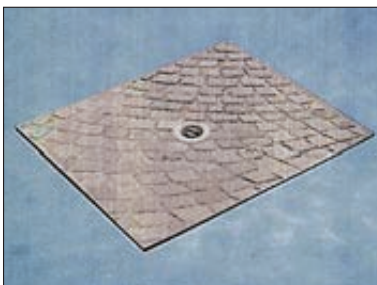
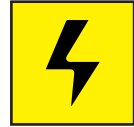
## General characteristics

The POWERTOWER retractable service distribution boards are a brand-new idea for outdoor and indoor electrical distribution. Due to their versatility they can be used in all applications, granting the maximum safety together with a total environmental adaptability. The pit must be well drained!

In the drawn back position the resulting surface becomes a free driveway while in the drawn out position (the turret can be raised with a crank) a wide range of services (electricity, water, compressed air etc.) according to the various requirements, are available

The turrent is supplied with a concrete pit for the recovery in the draw back position; the underground passage for the incoming supplies is made through holes in the pit sides.

The POWERTOWER distribution boards can be installed outdoor in market places, sites and venues suitable for festivals, concerts, sporting events and meetings. They can be installed indoor in industrial and production areas where they allow the displacement of machinery and working posts or in multi-purpose halls, in Trade Fairs, etc.



- Ports • Squares • Markets • Trade Fairs • Halls •
- Sporting Centres • Swimming Pools •

**Please ask our sales team for more information**



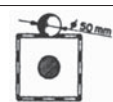
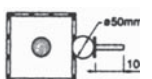


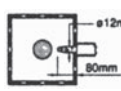

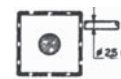
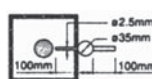




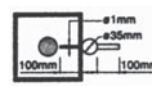





# Classification of Degrees of Protection Provided by Enclosures IEC 529-1976, SABS 1222-1985

## Enclosure protection level (International Protection)

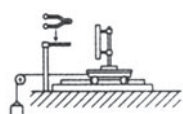
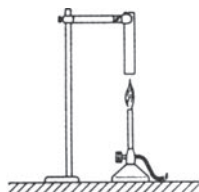
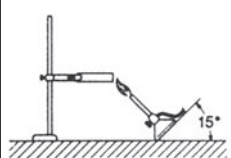
Note: For industrial plugs and sockets only

IP 44  SPLASHPROOF and IP67  WATERTIGHT does apply, depending on time and pressure exposure.

IP*	4	4
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1 <sup>st</sup> CHARACTERISTIC DIGIT PROTECTION AGAINST CONTACT WITH EXTERNAL SOLID OBJECTS AND ACCESS TO DANGEROUS PARTS			2 <sup>nd</sup> CHARACTERISTIC DIGIT PROTECTION AGAINST THE PENETRATION OF LIQUIDS		
	MEANING FOR THE PROTECTION OF MATERIALS	MEANING FOR THE PROTECTION OF PEOPLE		MEANING FOR THE PROTECTION OF LIQUIDS	
0	No protection	No protection	0	No protection	
1	Protection against solid objects larger than 50mm 	Protection against access with the back of the hand 	1	Protection against vertically falling drops of water 	
2	Protection against solid objects larger than 12.5mm 	Protection against access with a finger 	2	Protection against falling drops of water with a maximum inclination of 15° 	
3	Protection against solid objects larger than 2.5mm 	Protection against access with a tool 	3	Protections against rain 	
4	Protection against solid objects larger than 1mm 		4	Protection against splashing water 	
5	Protection against dust 	Protection against access with a wire 	5	Protection against water jets 	
6	Total protection against dust 		6	Total protection against sea waves 	
			7	Protection against the effect of immersion 	
			8	Protection against the effect of submersion 	

## Reaction of the finished products and materials to fire

TEST	TEST APPARATUS	COMPLIANCE WITH STANDARDS	PURPOSE OF TEST	TEST CONCLUSION	TEST LAYOUT		
					ignition source	test duration	test specification
GLOW -WIRE TEST		IEC 695-2-1 CEI 50-11	Test requires that abnormal heating due to electrical overload and bad connections does not affect insulating components, impairing their further use. The test is intended to simulate an ignition source. The specimen is tested with glow-wire coil horizontal, a certain pressing force and penetration depth limited to 7mm.	Any flames must end within 30 sec. of switching off the ignition source. TEST TEMPERATURES • 650°C for general purpose materials. • 750°C for current-carrying materials employed in trailing sockets and plugs • 850°C for current-carrying materials employed in socket-outlets and switches.	Glow-wire coil of 4mm diameter	Glow-wire coil pressed for 30 sec.	Time for flames to extinguish
UL (UNDERWRITERS' LABORATORIES)		UL 94	Test to determine afterflame time of specimens after removal of ignition source.	• VO: afterflame is less than 5 sec. • V1: afterflame is less than 25 sec. • V2: afterflame is less than 25 sec. with burning drops. • HB: afterflame exceeds 25 sec. (specimen lies horizontally and burning rate does not exceed 38mm/min). Similar to ASTM D-635.	Bunsenburner	Flame applied twice for 10 sec. on specimen	Duration of afterflame
ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)		ASTM D-635	Determination of burning time and extent of burning in mm of specimen after removal of ignition source.	• Material is unflamable if specimen does not burn. • Material is self-extinguishing if extent of burning on specimen is less than 100mm.	Bunsenburner	Flame applied twice for 30 sec. on specimen	Extent of burning in mm

\*If a 3rd digit in the IP rating is shown, it refers to the mechanical protection factor against impact. Details on request.

# Chemical Resistance of Moulded Plugs and Sockets Manufactured of PVC, PE, PP, PC and PA

**List of symbols:**

- + : The parts are resistant against chemical attack under conventional conditions.
- ø : The parts are partially resistant against chemical attack under conventional conditions.
- : The parts are not resistant against chemical attack.

Abbreviations: PVC = Polyvinylchloride      PE = Polyethylene      PP = Polypropylene  
 PC = Polycarbonate      PA = Polyamide

Chemical Attack	Conc. %	°C	PVC	PE/PP	PC	PA	Chemical Attack	Conc. %	°C	PVC	PE/PP	PC	PA
Acetaldehyde, aqueous	40	40	ø	+	-	ø	Hydrochloric acid	conc.	60	+	+	-	-
Acetic acid	≤<10	40	+	+	+	ø	Hydrofluorilic acid, aqueous	<32,5	60	+	+	+	-
Acetic acid	10-85	60	+	+	-	-	Hydrofluoric acid, aqueous	<40	20	+	+	-	-
Acetic acid	85-95	40	+	+	-	-	Hydrogen	100	60	+	+	+	+
Acetic acid	>95	20	+	+	-	-	Hydrogen peroxide	20	20	+	+	ø	ø
Acetone	traces	20	-	+	-	+	Hydrogen sulphide, dry or humid		60	+	+	ø	ø
Ammonia, aqueous	20	40	+	+	-	+	Hydrogen sulphide, aqueous		40	+	+	ø	ø
Ammonia, dry		60	+	+	-	+	Ketone			-	-	-	+
Ammonium fluoride	2	20	+	ø	ø	-	Lactic acid, aqueous	1	40	+	+	+	+
Aniline	saturated	60	ø	-	-	ø	Methyl alcohol, aqueous	all	40	+	+	-	+
Arsenic acid	<20	60	+	+	+	ø	Mineral oil		20	+	+	ø	+
Beer		60	+	+	ø	+	Nitric acid	<30	40	+	+	-	-
Benzene		20	-	ø	-	+	Nitric acid	30-45	45	+	+	-	-
Bleaching agent	12,5	40	+	+	ø	ø	Nitric acid	50-60	20	+	ø	-	-
Borax, aqueous		60	+	+	ø	ø	Nitric gases, dry or humid	weak	60	ø	ø	-	ø
Bromic acid, aqueous	10	20	+	+	-	-	Oils and fats (vegetable)						
Butane, gaseous			+	-	+	+	Oils and fats (organic)		60	+	+	-	+
Carbonic acid, dry		40	+	+	+	+	Oxalic acid, aqueous	10	40	+	+	+	ø
Carbonic acid, dry or humid		40	+	+	ø	+	Oxalic acid, aqueous	conc.	60	+	+	-	-
Carbon tetrachloride		20	-	-	-	+	Oxygen		60	+	+	ø	+
Carbon disulphide		20	ø	ø	-	ø	Ozone		20	+	ø	-	ø
Caustic soda	<40	40	+	+	-	+	Permanganate	<6	20	+	+	ø	-
Caustic soda	40-60	60	+	+	-	+	Petrol, normal/premium		60	+	ø	-	+
Cement, dry		20	+	+	+	+	Petroleum		20	+	+	ø	+
Cement, mixed		20	+	+	-	+	Phenol, aqueous	<90	45	ø	ø	-	-
Chloric gas, dry or humid		20	ø	ø	-	-	Phosphoric acid, aqueous	<30	40	+	+	-	-
Chloric water		20	ø	-	-	-	Phosphoric acid, aqueous	>30	60	+	+	-	-
Chlorinated hydrocarbons			-	-	-	+	Potash lye, aqueous	40	40	+	+	-	+
Chlorosulfuric acid	100	20	ø	ø	-	-	Potash lye	40-50	60	+	+	-	+
Chromium acid, aqueous	<50	50	+	+	-	-	Potassium sodium lye	<40	40	+	+	-	+
Chromium acid	20		ø	ø	+	-	Potassium sodium lye	40-50	60	+	+	-	+
Chromosulfuric acid	20		ø	ø	-	-	Propane, liquid			+	-	+	+
Citric acid	all	60	+	+	+	+	Salt solution	all	40	+	+	+	+
Cresol, aqueous	<90	45	ø	ø	-	-	Seawater		40	+	+	ø	+
Cupric sulfate	all	60	+	+	+	ø	Sulfur dioxide, aqueous	all	40	+	+	ø	ø
Diesel oil		20	+	+	ø	+	Sulfuric acid, dry or humid	all	60	+	+	ø	ø
Developer (phot.)		40	+	+	ø	+	Sulfuric acid, aqueous	<40	40	+	+	ø	-
Dextrine	18	20	+	+	ø	+	Sulfuric acid, aqueous	40-80	60	+	+	-	-
Ester			-	-	-	+	Sulfuric acid, aqueous	80-90	40	+	+	-	-
Ethyl alcohol, aqueous	<40	40	+	+	ø	+	Sulfuric acid, aqueous	90-96	20	+	+	-	-
Ethyl ether		20	-	ø	ø	+	Sodium chloride solution	weak	40	+	+	+	+
Fatty acid		20	+	ø	ø	+	Tartaric acid	10	60	+	+	+	+
Fixing bath		40	+	+	ø	+	Urine		40	+	+	+	+
Fluorochlorinated hydrocarbons			+	ø	+	+	Water		60	+	+	+	+
Formaldehyde, aqueous	all	30	+	+	ø	+	Xylene	100	20	-	ø	-	+
Formic acid	<30	40	+	+	ø	-	Zinc chloride, aqueous	all	60	ø	+	ø	-
Formic acid	conc.	20	+	+	-	-	Zinc sulfate, aqueous	weak	60	+	+	ø	-
Glycerine, aqueous		60	+	+	ø	+							
Hydrochloric acid	weak	40	+	+	ø	-							

All given values refer to standard test samples under standardized laboratory conditions. Designs and specifications subject to change without notice.



# Technical Data

## A Guide for Electric Motor Data

### AC MOTOR DATA

TABLE 1 (approximate data for 3 phase AC motors)

HP	kW	approx. PF & EFFY	380V line amp	500V line amp	HP	kW	approx. PF & EFFY	380V line amp	500V line amp
1	0,74	58,3	1,95	1,48	25	18,6	74,6	38,0	28,9
1,5	1,1	62,0	2,75	2,09	30	22,2	75,2	45,1	34,4
2	1,48	64,0	3,55	2,70	35	27,0	75,6	52,5	39,9
2,5	1,86	65,4	4,34	3,30	40	29,6	76,0	59,6	45,3
3	2,23	66,5	5,11	3,88	45	33,3	76,2	67,0	50,9
4	2,97	68,0	6,66	5,07	50	37,0	76,5	74,1	56,4
5	3,72	69,0	8,22	6,25	60	44,5	77,0	88,4	67,1
6	4,45	69,8	9,75	7,40	70	52,0	77,4	103	77,9
7	5,1	70,4	11,3	8,59	75	55,5	77,6	110	83,0
7,5	5,6	70,7	12,0	9,15	80	59,2	77,7	117	88,5
8	5,95	71,0	12,8	9,70	90	66,5	77,9	131	99,8
9	6,7	71,3	14,3	10,8	100	74,6	78,2	145	110
10	7,46	71,8	15,8	12,0	125	93,0	78,5	181	140
12,5	9,3	72,6	19,6	14,9	150	111,7	79,0	215	163
15	11,17	73,2	23,3	17,7	175	129,2	79,2	250	190
20	14,9	74,0	30,7	23,3	200	149,0	79,5	285	217

For approximate current rating related to other voltages, multiply 380V rating by:

0,88 to obtain 430V

0,75 to obtain 525V

0,69 to obtain 550V

TABLE 2 DC MOTOR DATA

HP	Effy. %	110V	115V	200V	220V	230V	250V AMPS	400V	440V	460V	500V	600V	HP
1	76	8,92	8,53	4,90	4,45	4,26	3,92	2,45	2,23	2,13	1,96	1,64	1
1,5	77	13,2	12,6	7,26	6,0	6,32	5,82	3,64	3,30	3,16	2,91	2,42	1,5
2	7	17,5	16,7	9,60	8,74	8,35	7,68	4,80	4,37	4,17	3,84	3,20	2
2,5	79	21,5	20,5	11,8	10,7	10,3	9,45	5,90	5,37	5,13	4,73	3,94	2,5
3	80	25,4	24,3	14,0	12,7	12,2	11,2	7,00	6,35	6,08	5,60	4,66	3
4	82	33,1	31,7	18,2	16,6	15,8	14,6	9,10	8,32	7,91	7,28	6,07	4
5	83	40,9	39,2	22,5	20,4	19,6	18,0	11,3	10,2	9,79	9	7,50	5
6	84	48,5	46,3	26,6	24,2	23,2	21,3	13,3	12,1	11,6	10,7	8,88	6
7	84	56,6	53,2	31,2	28,3	27,1	25,0	15,6	14,2	13,5	12,5	10,4	7
7,5	84,5	60,2	57,6	33,1	30,1	28,8	26,5	16,6	15,1	14,4	13,2	11,1	7,5
8	85	63,8	61,1	35,1	31,9	30,3	28,1	17,6	16,0	15,3	14,1	11,7	8
9	85	71,8	68,7	39,9	35,9	34,4	31,6	19,8	18,0	17,2	15,8	13,2	9
10	86	79,0	75,5	43,4	39,4	37,7	34,7	21,7	19,7	18,9	17,3	14,5	10
12,5	86	98,6	94,3	54,3	49,3	47,2	43,4	27,1	24,7	23,6	21,7	18,1	12,5
15	87	117	112	64,4	58,5	56,0	51,5	32,2	29,3	28,0	25,8	21,5	15
20	87	156	149	85,7	78,0	74,6	68,5	42,9	39,0	37,3	34,3	28,6	20
25	88	193	184	106	96,4	62,2	84,8	53,0	48,2	46,1	42,4	35,3	25
30	88	231	221	127	116	111	102	63,5	58,0	55,3	50,9	42,4	30
35	88	270	258	149	136	129	119	74,5	68,0	64,6	59,4	49,5	35
40	89	305	292	168	153	146	135	84,0	76,5	73,0	67,1	55,9	40
45	89	342	328	118	171	164	151	94,0	85,5	81,9	75,4	62,8	45
50	90	378	361	208	189	181	167	104	94,5	90,3	83,0	69,2	50
60	90	452	433	249	227	216	200	125	114	108	99,5	83,0	60
70	91	522	499	287	261	250	230	144	131	125	115	99,6	70
75	91	560	535	308	280	267	246	154	140	134	123	102	75
80	92	590	564	325	295	282	259	162	148	141	130	108	80
90	92	664	635	365	332	318	292	183	166	159	146	122	90
100	92	738	706	406	369	353	325	203	185	176	162	135	100
125	93	911	872	502	456	436	402	251	228	218	201	167	125
150	93	1100	1050	603	548	525	482	302	274	262	241	201	150
175	93	1280	1220	704	640	611	563	352	320	306	281	234	175
200	93	1460	1397	804	730	699	642	402	365	349	321	268	200

All quoted data is approximate and not binding.





# Technical Data

## A Guide for Flexible Cable users and Designers

### CURRENT CAPACITY TABLE

including derating tables and voltage drop calculation

**Max. current capacity of insulated conductors**

According to VDE Standards 0100/0298-Part 3+4

Explanation of groups:

Group 1: up to 3 conductors in conduit.

Group 2: Flat underplaster and moisture-proof conductors, armoured wires, multi-core conductors in air, and for the connection of movable apparatus (incl. trailing cables from POWERMITE.)

Group 3: Single-core conductor in air with a clearance between conductors at least equal to the diameter, and for the connection of movable apparatus.

Nominal area	Group 1		Group 2		Group 3	
	Copper	Aluminium	Copper	Aluminium	Copper	Aluminium
0,75	-	-	13	-	16	-
1	12	-	16	-	20	-
1,5	16	-	20	-	25	-
2,5	21	16	27	21	34	27
4	27	21	36	29	45	35
6	35	27	47	37	57	45
10	48	38	65	51	78	61
16	65	51	87	68	104	82
25	88	69	115	90	137	107
35	110	86	143	112	168	132
50	140	110	178	140	210	165
70	-	-	220	173	260	206
95	-	-	265	210	310	245
120	-	-	310	245	365	285
150	-	-	355	280	415	330
185	-	-	405	320	475	375
240	-	-	480	380	560	440
300	-	-	555	435	645	510
400	-	-	660	-	770	605
500	-	-	755	-	880	690

**Derating for POWERMITE cables: \***

Ambient temperatures up to °C	30	35	40	45	50	55	60	65	70	75
FACTOR to be applied to above table values	1	0,95	0,89	0,84	0,77	0,71	0,63	0,55	0,45	0,32

Reeled and bunched cables have a derating factor of 0,77 per layer.

**Derating for POWERMITE heat resisting cables: \***

Ambient temperatures up to °C	145	150	155	160	165	170	175
FACTOR to be applied to above table values	1	0,92	0,85	0,75	0,65	0,53	0,38

**For the correct current rating of your conductor size, proceed as stated below:**

1. Select a conductor size as per above current capacity table.
2. Check voltage drop requirements.
3. Take ambient temperature and bunching into account.
4. Consider the duty cycle of your machinery.

**Voltage drop formula:** Cross section =  $\frac{\text{Ampere} \times \text{length}}{40 \times \text{Volt}} = \text{mm}^2$

- length = length in metres from feeder point to furthest end-point.
- $\frac{1}{40} = \frac{\sqrt{3} \times \text{power factor}}{\text{copper conductivity}}$
- Volt = percentage of voltage drop allowable, stated in Volt.

The above formula will give you the necessary cross-section in mm<sup>2</sup> to operate your machinery within the voltage drop limits. Please note that the conductor size chosen should not be less than the figures in the above table.

If your conductors have to feed machinery with a duty cycle of 40%, then you can multiply the table values by approx.: 1,05 for core sizes 1 - 6mm<sup>2</sup>, 1,24 for core sizes 10 - 50mm<sup>2</sup>, 1,46 for core sizes 95 - 240mm<sup>2</sup>.

and calculate thereafter.

CONDUCTIVITY FACTORS:      56 Copper      34 Aluminium      Duty cycle = 40% ED means 4 min ON – 6 min OFF in a 10 min cycle  
    16 Zinc            7-10 Iron

All quoted data is approximate and not binding.

\* for cables with heat resisting insulation above +150 °C a.T.  
 + ambient temperature means the highest possible temperature on the outer sheath for longer durations i.e. sunlight etc.

**CONVERSIONS**

POWERMITE CONVERSION	POLES RELATED TO REV/MINUTE
HORSE POWER TO KILOWATT : Multiply by 0,746	2 Poles = 3 000 R.P.M.      10 Poles = 600 R.P.M.
Kilowatt to horse power : Multiply by 1,341	4 Poles = 1 500 R.P.M.      12 Poles = 500 R.P.M.
Fahrenheit to Celcius : Subtract 32 and x by 5 and ÷ by 9	6 Poles = 1 000 R.P.M.      16 Poles = 375 R.P.M.
Celsius to Fahrenheit : Multiply by 9 and ÷ by 5 and add 32	8 Poles = 750 R.P.M.



## Gland Sizes for SWA/PVC Cables

### ADJUSTABLE GLANDS

For PVC insulated swa cables manufactured to SABS 1507

Cable sizes	Number of cores	Gland sizes	Metric thread
1,5mm <sup>2</sup>	2, 3, 4 & 5	0	20
	7	1	20
	12	2	25
	19 & 27	3	32
	37	4	40
2,5mm <sup>2</sup>	2 & 3	0	20
	4	0 or 1	20
	5 & 7	1	20
	12 & 19	3	25
	27 & 37	4	32
4mm <sup>2</sup>	2	0 or 1	20
	3, 4 & 5	1	20
	7	2	25
	12	3	32
	19	3 or 4	32 / 40
	27	4	40
	37	4 or 5	40 / 50
6mm <sup>2</sup>	2 & 3	1	20
	4, 5 & 7	2	25
10mm <sup>2</sup>	2	1 or 2	20 / 25
	3 & 4	2	25
16mm <sup>2</sup>	2 & 3	2	25
	4	2 or 3	25 / 32
25mm <sup>2</sup>	2	2 or 3	25 / 32
	3 & 4	3	32
35mm <sup>2</sup>	2 & 3	3	32
	4	3 or 4	32 / 40
50mm <sup>2</sup>	2	3	32
	3 & 4	4	40
70mm <sup>2</sup>	2	3 or 4	32 / 40
	3	4	40
	4	4 or 5	40 / 50
95mm <sup>2</sup>	2	5	40
	3	4 or 5	40 / 50
	4	5	50
120mm <sup>2</sup>	2	5	40
	3	5	50
	4	5 or 6	50 / 63
150mm <sup>2</sup>	2 & 3	5	50
	4	6	63
185mm <sup>2</sup>	2	5	50
	3 & 4	6	63
240mm <sup>2</sup>	2 & 3	6	63
	4	7	75
300mm <sup>2</sup>	2	6	63
	3	6 or 7	63 / 75
	4	7	75

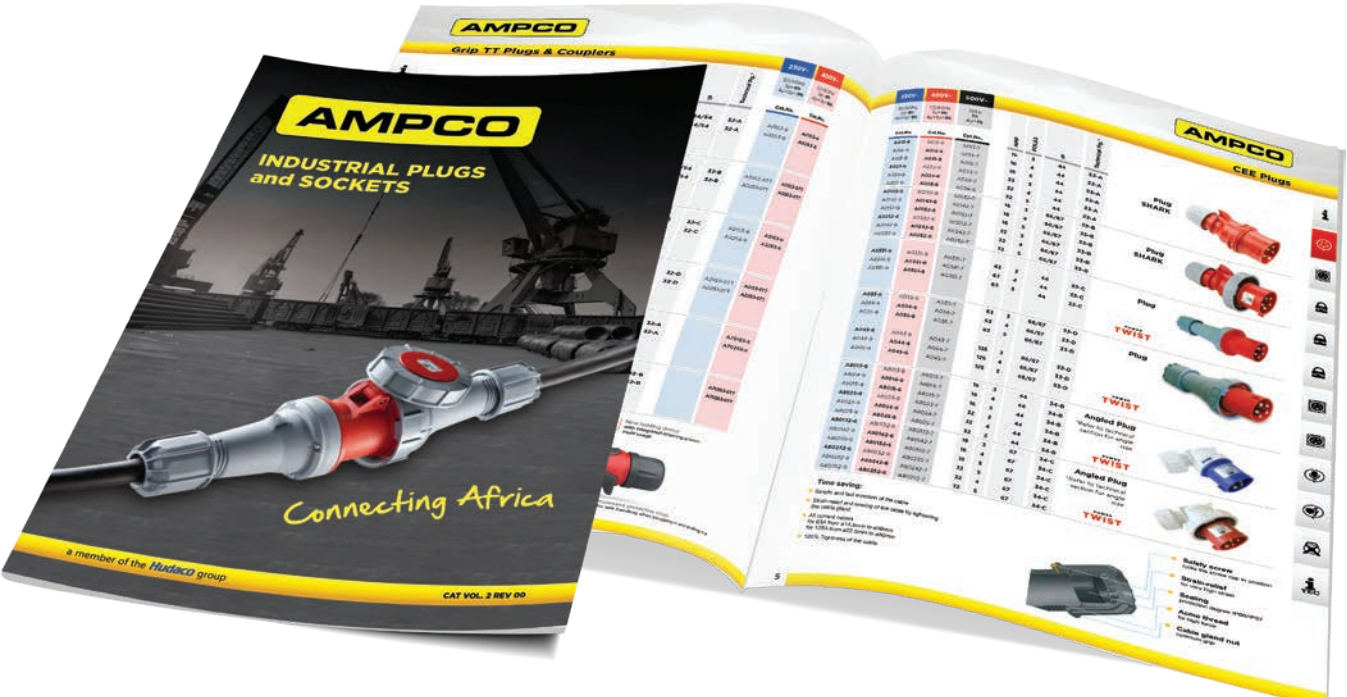


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