

# IEC 309 HP

## Plugs and socket-outlets IEC 309 standard

The IEC 309 HP system comprises plugs and socket-outlets from 16 to 125 A in two different versions – straight mobile and 10° flush-mounting – which have IP44/IP54 and IP66/IP67/IP68/IP69 degrees of protection (IP68/IP69 only available for straight versions). The introduction of all the hours references for the earthing contact completes the range for specific applications and installations. The 16-32 A versions are available with scew wiring or fast wiring with spring terminals, while the 63-125A versions propose indirect wiring with mantle terminals.

**Technical characteristics page 869**



## IEC 309 HP - LOW VOLTAGE FAST WIRING STRAIGHT PLUGS

IP44/IP54



GW 60 004 FH

### LOW VOLTAGE FAST WIRING STRAIGHT PLUGS - HIGH PERFORMANCE



Code	No. of poles	Rated voltage	Colour	Frequency	Reference h	Pack Carton
<b>Rated current (A): 16</b>						
GW 60 001 FH	2P+E	100-130 V	■	50/60 Hz	4	25
GW 60 002 FH	3P+E	100-130 V	■	50/60 Hz	4	15
GW 60 003 FH	3P+N+E	100-130 V	■	50/60 Hz	4	50
GW 60 004 FH	2P+E	200-250 V	■	50/60 Hz	6	50
GW 60 005 FH	3P+E	200-250 V	■	50/60 Hz	9	15
GW 60 006 FH	3P+N+E	200-250 V	■	50/60 Hz	9	15
GW 60 007 FH	2P+E	380-415 V	■	50/60 Hz	9	15
GW 60 008 FH	3P+E	380-415 V	■	50/60 Hz	6	25
GW 60 009 FH	3P+N+E	380-415 V	■	50/60 Hz	6	50
<b>Rated current (A): 32</b>						
GW 60 012 FH	2P+E	100-130 V	■	50/60 Hz	4	15
GW 60 013 FH	3P+E	100-130 V	■	50/60 Hz	4	15
GW 60 014 FH	3P+N+E	100-130 V	■	50/60 Hz	4	15
GW 60 015 FH	2P+E	200-250 V	■	50/60 Hz	6	15
GW 60 016 FH	3P+E	200-250 V	■	50/60 Hz	9	15
GW 60 017 FH	3P+N+E	200-250 V	■	50/60 Hz	9	15
GW 60 018 FH	2P+E	380-415 V	■	50/60 Hz	9	15
GW 60 019 FH	3P+E	380-415 V	■	50/60 Hz	6	15
GW 60 020 FH	3P+N+E	380-415 V	■	50/60 Hz	6	15

**NOTES:** all products are packaged individually.

Halogen free according to EN 60754-2.

**CHARACTERISTICS:** connection technology with spring terminals. Nickel-plated pins.

# IEC 309 HP



## 4 IP DEGREES FOR TOTAL PROTECTION



The HP straight plugs and socket-outlets are the first and only on the electrotechnical field with IP68 and IP69 degrees of protection. Nickel plating of pins and sleeves also offers the best protection against corrosion, oxidation and abrasion, even in critical environmental conditions.

## EXCELLENT RESISTANCE TO STRESS



The use of high-performance technopolymers and the inness of rubberised surfaces to protect the areas most at risk of knocks (in all 63-125 A versions) offer excellent resistance to mechanical stress (IK09, equivalent to 10 J), also at low temperatures (down to -25 °C).

## SAFE AND INTUITIVE ASSEMBLY



The 16-32 A versions are distinguished by their patented closure with ¼ turn SAFE-LOCK system, whereas the 63-125 A versions have captive screws on brass inserts with a wider contrast flange "embedded" in the straight connectors/plugs body.

New range of plugs and socket-outlets meeting the dimensional, construction/performance and safety requisites defined by the international Standards IEC 60309-1 and IEC 60309-2, subsequently assimilated at European level as EN 60309-1 and EN 60309-2.

## Technical data and compliance with Standards

ELECTRICAL CHARACTERISTICS						
Rated current (In) (A)	Rated frequency (Hz)	Rated voltage Un (V)	Permissible overload (A)	No. of operations carried out	Breaking capacity at 1.1 Un (A)	Insulation resistance (MΩ)
16	50/60 100 ÷ 300 > 300 ÷ 500 direct current	> 50 ÷ 690 transformer	22	> 5000	20	> 10
32			42	> 2000	40	
63	50/60 100 ÷ 300 > 300 ÷ 500 direct current	> 50 ÷ 690	-	> 2000	79	> 10
125			> 500	156		

MECHANICAL AND PHYSICAL CHARACTERISTICS				
Operating temperature (°C)	Degree of protection (IP)	Impact resistance (IK)	Heat resistance	Resistance to abnormal heat and fire
			Thermo-pressure with ball (°C)	Glow wire test (°C)
-25 ÷ +55	Straight plugs and sockets HP*: IP44/IP54 e IP66/IP67/IP68/IP69	Straight plugs and sockets HP: IK 09	125 (active parts) 80 (passive parts)	850 (active parts) 650 (passive parts)
	10° flush-mounting sockets HP: IP44/IP54 e IP66/IP67	10° flush-mounting sockets HP: IK 09		
	Other: IP44 e IP67	Other: IK 08		

(\* Although the international product standard EN 60309 does not currently require it, these products have been voluntarily subjected to tests with degrees of protection higher than IP66/IP67.

IP68: 2 bar/6 h according to EN 60529 standard after aging test in conformity with EN 60309 standards.

IP69: according to IEC 60529 standard after aging test in conformity with EN 60309 standards.

BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS										
Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Not resistant	Limited resistance	Limited resistance	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant

# IEC 309 HP

## Wiring information - Plugs and sockets IEC 309 HP

TIGHTENING CAPACITY OF THE TERMINALS (mm <sup>2</sup> )				
Rated current (In) (A)	Flexible cables		Rigid or stranded cables	
	MIN.	MAX.	MIN.	MAX.
16	1	2.5	1.5	4
32	2.5	6	2.5	10
63	6	16	6	25
125	16	50	25	70

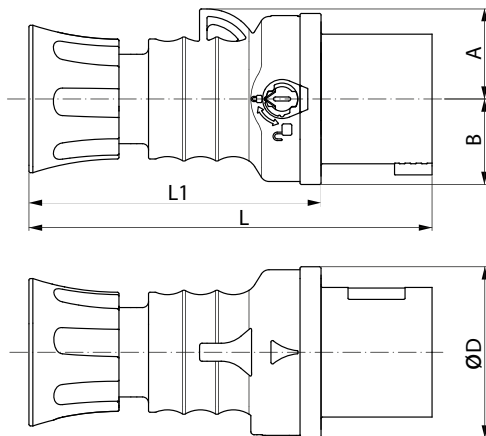
TIGHTENING CAPACITY OF THE CABLE FASTENER CLAMP * (mm)			
Rated current (In) (A)	No. poles	MIN.	MAX.
16	2P + $\perp$	7.5	13.8
	3P + $\perp$	7.5	13.8
	3P + N + $\perp$	9.2	19.9
32	2P + $\perp$	9.2	19.9
	3P + $\perp$	9.2	19.9
	3P + N + $\perp$	9.2	19.9
63**	2P + $\perp$	16.1	37
	3P + $\perp$	17.9	37
	3P + N + $\perp$	19.9	37
125**	2P + $\perp$	24.7	38.5
	3P + $\perp$	27	49
	3P + N + $\perp$	29.9	49

(\*) NB: these values refer to flexible, rigid and stranded cables.

(\*\*) Contact SAT customer service for indications of the cable size to be used in order to maintain the IPX8 degree

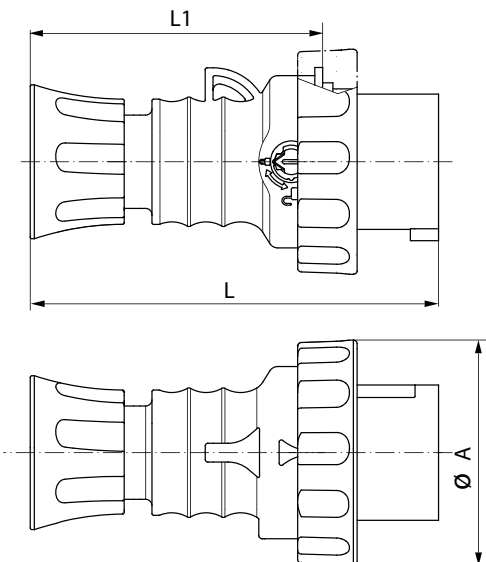
## Dimension tables - Plugs and sockets IEC 309 HP 16-32A

### STRAIGHT PLUGS - IP44/IP54



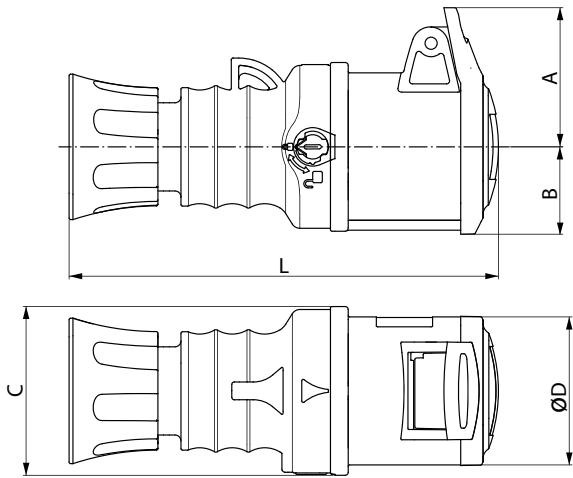
TYPE		A	B	D	L	L1
16A	2P + $\perp$	30	28.5	57	134	97
	3P + $\perp$	34	32	62	134	97
	3P+N+ $\perp$	38	36	68	153	115
32A	2P + $\perp$	40	41.5	71	162	115
	3P + $\perp$	40	41.5	71	162	115
	3P+N+ $\perp$	45	42	75	176	130

### STRAIGHT PLUGS - IP66 / IP67 / IP68 / IP69



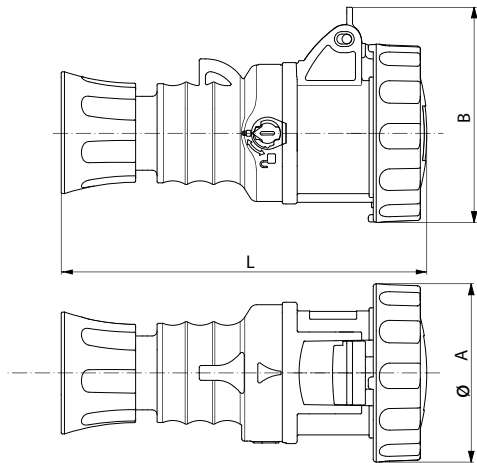
TYPE		A	L	L1
16A	2P + $\perp$	72	130	96
	3P + $\perp$	81	130.5	96.5
	3P+N+ $\perp$	88	150	116
32A	2P + $\perp$	93	158	114
	3P + $\perp$	93	158	114
	3P+N+ $\perp$	101	170	127

**STRAIGHT CONNECTORS - IP44/IP54**



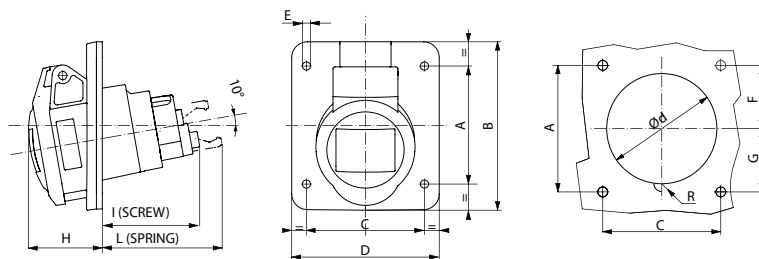
TYPE		A	B	C	D	L
16A	2P+ ±	47	29.5	57	50	148
	3P+ ±	50	32	62	55.5	148
	3P+N+ ±	56.5	35.5	68	62.5	165
32A	2P+ ±	59	39	71	64.5	176
	3P+ ±	59	39	71	64.5	176
	3P+N+ ±	62	42	75	70.5	190

**STRAIGHT CONNECTORS - IP66 / IP67 / IP68 / IP69**



TYPE		A	B	L
16A	2P+ ±	72	87	148
	3P+ ±	81	95	148
	3P+N+ ±	88	102.5	167
32A	2P+ ±	93	108	178
	3P+ ±	93	108	178
	3P+N+ ±	101	116	189

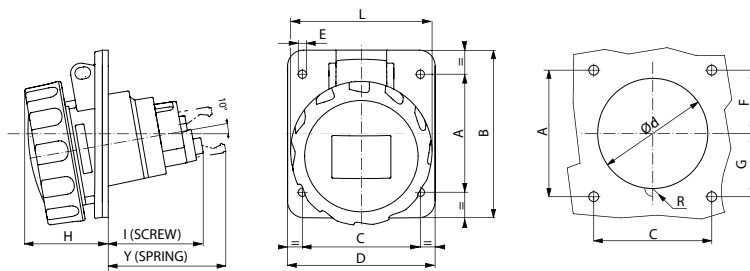
**10° FLUSH-MOUNTING SOCKET-OUTLETS - IP44/IP54**



TYPE		A	B	C	D	E	F	G	H	I	L	Ød	R
16A	2P+ ±	60	85	60	75	4.2	38	22	37.5	49.5	61	56	-
	3P+ ±	60	85	60	75	4.2	35	25	37	51.5	61	62	-
	3P+N+ ±	60	85	60	75	4.2	29	31	39.5	49	60	65	8
32A	2P+ ±	70	95	60	80	4.2	32	38	46.5	60	68	68	8
	3P+ ±	70	95	60	80	4.2	32	38	46.5	60	68	68	8
	3P+N+ ±	70	95	60	80	4.2	29.5	40.5	48.5	60	68	74	8

# IEC 309 HP

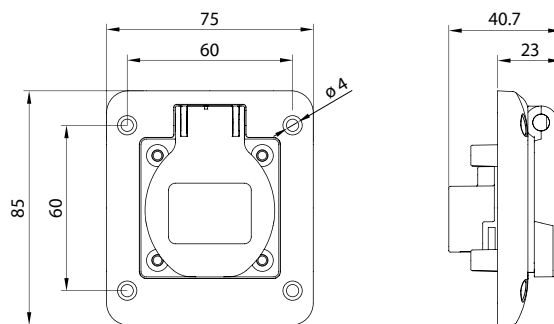
## 10° FLUSH-MOUNTING SOCKET-OUTLETS - IP66 / IP67



	TYPE	A	B	C	D	E	F	G	H	I	L	Y	ød	R
16A	2P+ $\frac{1}{2}$	60	85	60	75	4.2	38	22	42.5	48	72	60	56	-
	3P+ $\frac{1}{2}$	60	85	60	75	4.2	35	25	43	50.5	81	60	62	-
	3P+N+ $\frac{1}{2}$	60	85	60	75	4.2	29	31	44.5	48.5	88	60	66	5
32A	2P+ $\frac{1}{2}$	70	95	60	80	4.2	32	38	51	60.5	93	68.5	68	7
	3P+ $\frac{1}{2}$	70	95	60	80	4.2	32	38	51	60.5	93	68.5	68	7
	3P+N+ $\frac{1}{2}$	70	95	60	80	4.2	29.5	40.5	53	60.5	101	68.5	74	7

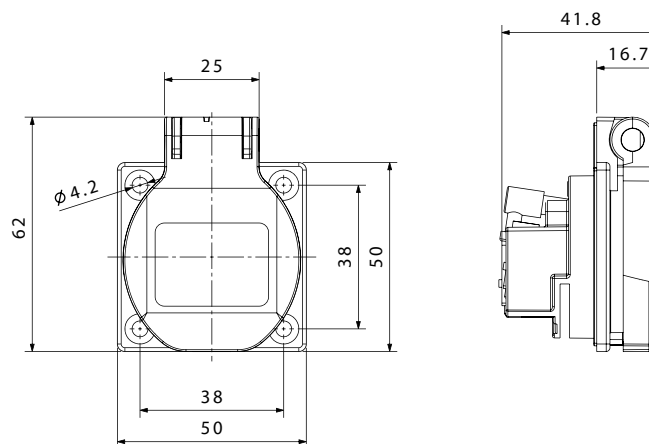
## Dimension tables - Flush-mounting domestic socket-outlets

### FLUSH-MOUNTING SOCKET-OUTLETS GERMAN STD 85X75 MM - IP54



GW62392

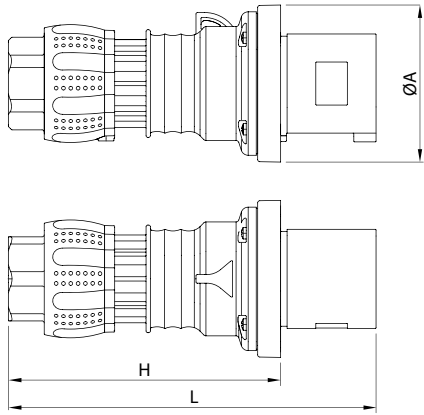
### FLUSH-MOUNTING SOCKET-OUTLETS GERMAN OR FRENCH STD 50X50 MM - IP54



GW62393 and GW62394

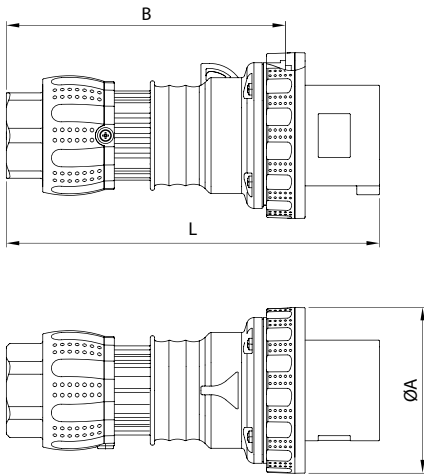
**Dimension tables - Plugs and sockets IEC 309 HP 63-125A**

**STRAIGHT PLUGS - IP44/IP54**



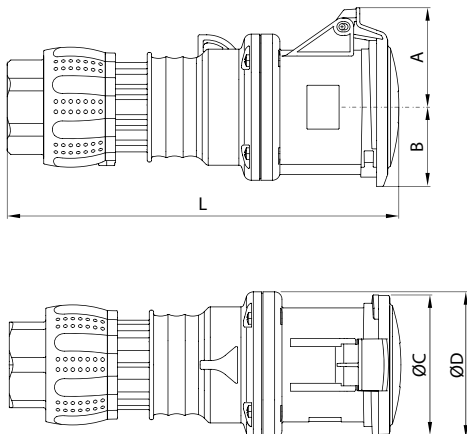
TYPE		A	L	H
63A	2P+ $\pm$	109	256	190
	3P+ $\pm$			
	3P+N+ $\pm$			

**STRAIGHT PLUGS - IP66 / IP67 / IP68 / IP69**



TYPE		A	B	L
63A	2P+ $\pm$	114	192	256
	3P+ $\pm$			
	3P+N+ $\pm$			
125A	2P+ $\pm$	131	241	313
	3P+ $\pm$			
	3P+N+ $\pm$			

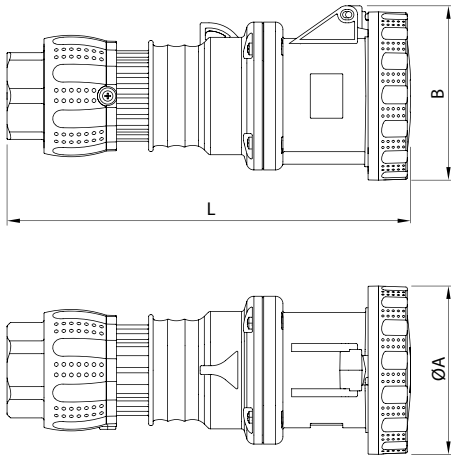
**STRAIGHT CONNECTORS - IP44/IP54**



TYPE		A	B	C	D	L
63A	2P+ $\pm$	68	54	96	100	268
	3P+ $\pm$					
	3P+N+ $\pm$					

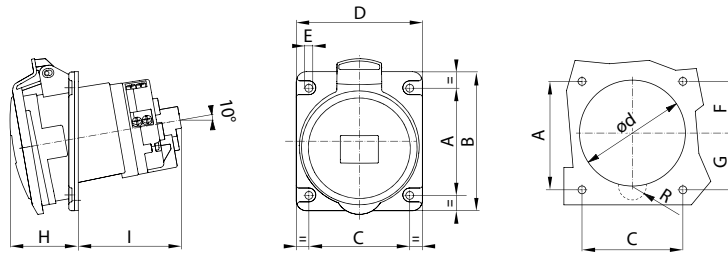
# IEC 309 HP

## STRAIGHT CONNECTORS - IP66 / IP67 / IP68 / IP69



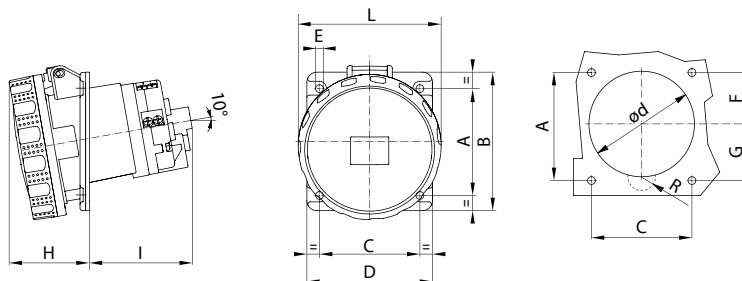
TYPE		A	B	L
63A	2P+ $\pm$	114	118	273
	3P+ $\pm$			
	3P+N+ $\pm$			
125A	2P+ $\pm$	130	131	335
	3P+ $\pm$			
	3P+N+ $\pm$			

## 10° FLUSH-MOUNTING SOCKET-OUTLETS - IP44/IP54



TYPE		A	B	C	D	E	F	G	H	I	Ød	R
63A	2P+ $\pm$	85	110	80	100	6	41	44	54	82	84	11
	3P+ $\pm$											
	3P+N+ $\pm$											

## 10° FLUSH-MOUNTING SOCKET-OUTLETS - IP66 / IP67



TYPE		A	B	C	D	E	F	G	H	I	L	Ød	R
63A	2P+ $\pm$	85	110	80	100	6	41	44	64	82	114	84	11
	3P+ $\pm$												
	3P+N+ $\pm$												
125A	2P+ $\pm$	90	114	90	114	6	43	47	76	108	131	95	13
	3P+ $\pm$												
	3P+N+ $\pm$												