

Industrial Plugs and Sockets

INDUSTRIAL PLUGS AND SOCKETS TO IEC 60309 RATED OPERATING VOLTAGE >50 V

Clock face position

Viewing the socket from the front, the clock face position h is established by observing the position of the earth contact with respect to the major keyway, which is always situated at 6 o'clock.

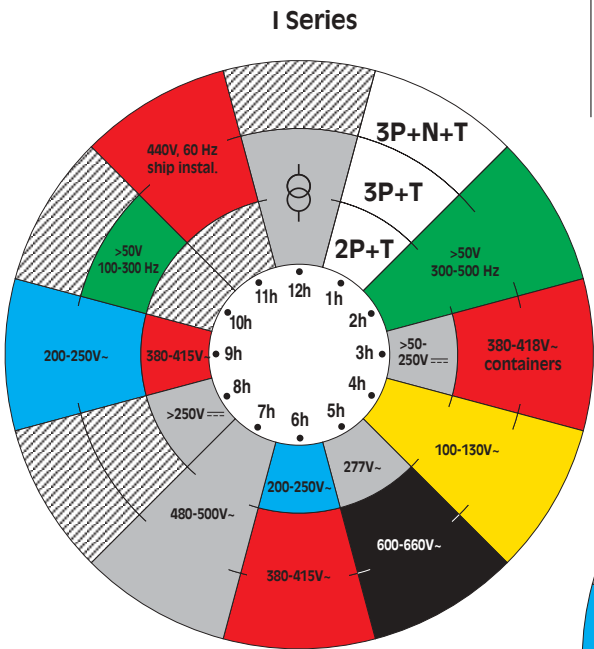
The different voltages are identified by conventional colour codes.

Clock reference:

All the versions required by the IEC 60309 standard are available, including the more specific:

Examples:

- standard use 6 o'clock
- refrigerated container 3 o'clock
- marine, port or ship installation 11 o'clock
- continuous current (2P + E) 3 and 8 o'clock
- supply by isolation transformer (TST) 12 o'clock
- high frequency, from 100 to 300 Hz 10 o'clock
- high frequency, from 300 to 500 Hz 2 o'clock
- specific voltages 100 - 130V 4 o'clock
- 480 - 500V 7 o'clock
- 600 - 690V 5 o'clock

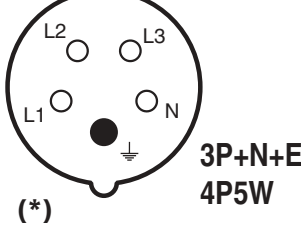
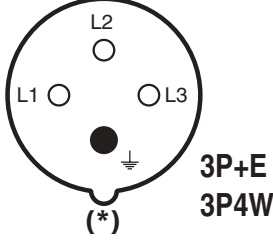
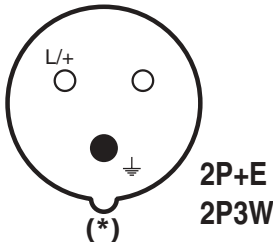


CLOCK DIAGRAM

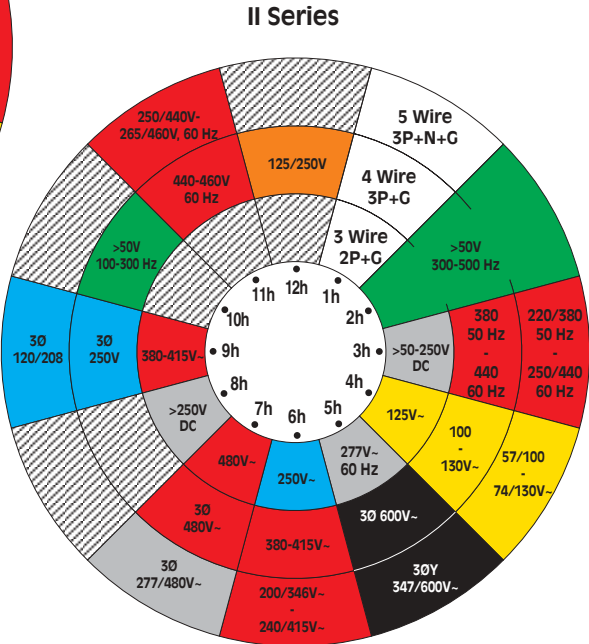
Clock face position (h) of the earth pole of low voltage (>50 V) industrial plugs and sockets to IEC 60309-2 for different applications (polarity, voltage, frequency, current).

⊙ = Supply from isolation transformer

SOCKET (front view)



(*) Major keyway



SYNOPTIC TABLE OF STANDARD INDUSTRIAL PLUGS AND SOCKETS TO IEC 60309-2

Rated operating voltage > 50 V (LV)

Number of contact	Poles	Frequency Hz	Rated operating voltage V	Clock face pos. (h) Earth contact (1)		Colour code
				16/20A 32/30A	63/60A 125/100A	
3 Contact 2P3W	1P+N+E II Series	50 e 60	100÷130	4	4	
	2P+E I and II Series	60	277	5	5	
		50 e 60	100÷130	4	4	
			200÷250	6	6	
			380÷415	9	9	
			480÷500	7	7	(6)
			suppl. by isol. transf.	12	12	(6)
		100÷300	> 50	-	-	(5)
		>300÷500	> 50	2	-	(5)
		d.c.	>50÷250	3	3	(6)
4 Contact 3P4W	2P+N+E II Series	50 e 60	125/250 single-phase	12	12	-
	3P+E I and II Series	50 e 60	100÷130	4	4	
			200÷250	9	9	
			380÷415	6	6	
		60	440÷460 (4)	11	11	
		50 e 60	480÷500	7	7	(6)
			600÷690	5	5	(2)
		50	380	3	-	
		60	440 (3)	-	-	
	3P+N+E I and II Series	100÷300	> 50	10	-	(5)
		>300÷500	> 50	2	-	(5)
5 Contact 4P5W	3P+N+E I and II Series	50 e 60	57/100÷75/130	4	4	
			120/208÷144/250	9	9	
			200/346÷240/415	6	6	
			277/480÷288/500	7	7	(6)
			347/600÷400/690	5	5	(2)
		60	250/440÷265/460 (4)	11	11	
		50	220/380	3	-	
		60	250/440 (3)	-	-	
	ALL TYPES	100÷300	> 50	-	-	(5)
		>300÷500	> 50	2	-	(5)

(1) The positions shown by a dash (-) are not standardised
(2) For ISO standard refrigerated containers
(3) mainly for shipboard installations
(4) Combinations of green with the colour of the rated operating voltage can be used to identify frequencies between 60 Hz and 500 Hz inclusive.
(5) plugs and sockets for which the IEC 309-2 standard sets only the clock face position (h) of the earth contact and not the colour, are supplied by SCAME in RAL 7035 grey

SERIES I AND SERIES II

Series I and Series II have more or less the same dimensions, but are classified according to different rated currents. For Series I, currents are 16A, 32A, 63A, and 125A and for Series II, rated currents are 20A, 30A, 60A and 100A.

Series I products are used in all European countries and some countries in South America, Asia, Australia and Africa. On the contrary, Series II products are mainly marketed in North America (USA, Mexico and Canada) and some countries in South America.

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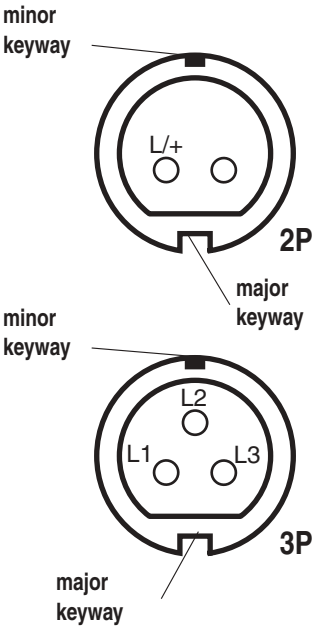
SYNOPTIC TABLE OF STANDARD INDUSTRIAL PLUGS AND SOCKETS TO IEC 60309-2

Rated operating voltage <50V~ (ELV)

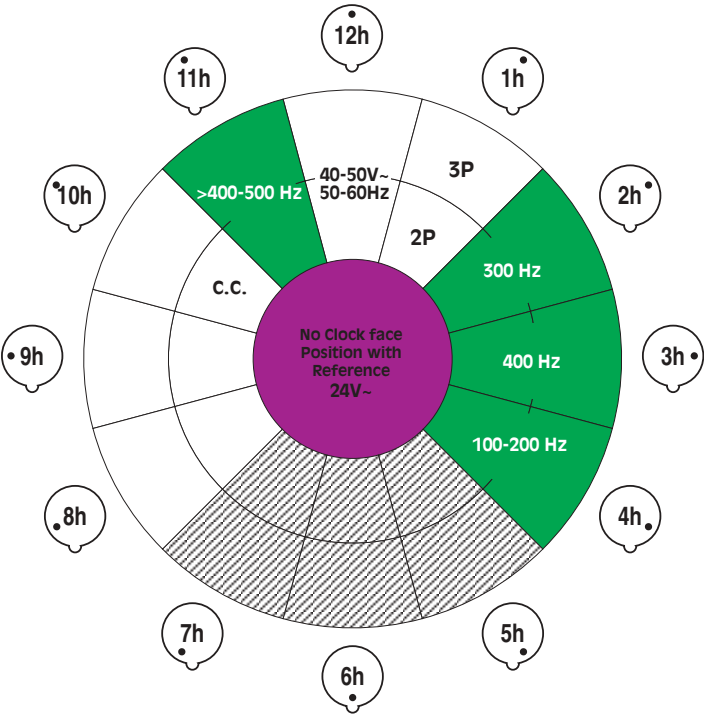
Poles	Frequency Hz	Rated operating voltage V	Minor keyway (1) clock face position (h) 16A and 32A without reference	Colour code
2P	50 e 60	20÷25	without ref.	
	50 e 60	40÷50	12	
	100÷200	20÷25 e 40÷50	4	(2)
	300		2	(2)
	400		3	(2)
	>400÷500		11	(2)
	c.c.		10	
3P	50 e 60	20÷25	without ref.	
	50 e 60	40÷50	12	
	100÷200	20÷25 e 40÷50	4	(2)
	300		2	(2)
	400		3	(2)
	>400÷500		11	(2)

(1) 1, 8 and 9 h positions are reserved for future standards; 5, 6 and 7 h positions cannot be used for reasons connected with the design.
(2) If necessary, a combination of green with the colour of the rated operating voltage can be used to identify frequencies between 60 Hz and 500 Hz.

SOCKET (front view)



Clock face position
Viewing the socket from the front, the clock face position h is established by observing the position of the minor keyway with respect to the major keyway, which is always situated at 6 o'clock.
The different voltages are identified by conventional colour codes.



CLOCK DIAGRAM
Clock face position (h) of the minor keyway of extra-low voltage (<50 V) industrial plugs and sockets to IEC 309-2 for different applications (polarity, voltage, frequency, current).