

SELECTION

INDUSTRIAL PLUGS AND SOCKETS

2020 - 2021



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2020 - 2021



www.scame.com

Our fifty-year old history of continuous research and development, which started from an insulated nail, a product that is as simple as the winning idea that generated it, has led to the development of more than 20,000 products suited for meeting all kind of needs in any installation environment. In the following pages, you will find the wide range of IEC 60309 plugs, connectors and sockets offered by **SCAME**, suited to meeting all kinds of needs in the tertiary, industrial and construction site sectors, either as stand-alone products and as a natural addition to the distribution boards which are part of **SCAME**'s range.

SCAME's complete offer can always be consulted through the comprehensive thematic catalogues as well as on the Internet at **www.scame.com**.

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PRODUCTS CATALOGUE

TECHNICAL SHEETS

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The company

“

In over
fifty years
we have built an
industrial reality
that has always
maintained the spirit
of its **origins**

”



Stefano Scainelli CEO



THE CONCEPT OF QUALITY IS AN INTEGRAL PART OF OUR CULTURE IN ALL ASPECTS AND EVERY ACTIVITY OF OUR WORK.

SCAME PARRE S.p.A. is an Italian manufacturer of components and systems for low voltage electrical installations, in the residential and industrial fields.

Since 1963, the year it was founded, SCAME has grown to be an international group with a workforce of 650 employees at the three facilities located in the province of Bergamo, Italy, where the company's headquarters and main production lines have always been. The company also operates abroad, with 18 sales offices and branches, three of which are also production facilities.

In over 50 years of activity, it has kept its original spirit intact, spreading its values and distributing its products on the domestic market and, starting in the early 1970s, in over 80 foreign countries spread over 5 continents, currently achieving a consolidated yearly turnover of more than € 100 million.





SCAME
electrical solutions
Italy, Parre (Bergamo)



SCAME ARGENTINA
Argentina

SCAME BULGARIA
Bulgaria

SCAME BRASIL
Brazil

SCAME CHILE
Chile

SCAME-TOP
China

SCAME-CZ
Czech Republic

SOBEM SCAME
France

SCAME INDIA
India

SCAME POLSKA
Poland

SCAME PORTUGAL
Portugal

SCAME-RO
Romania

SCAME-SK
Slovakia

SCAME IBERICA
Spain

SCAME MIDDLE EAST
U.A.E.

SCAME-UK
United Kingdom

SCAME-UY
Uruguay

SCAME-UA
Ukraine

Industrial plugs and sockets

PLUGS



					IP44/IP54		FAST WIRING	
								
Poles	Hz.	Volt	Colour	h.	16A cable gland	32A cable gland	16A cable gland	32A cable gland
2P+E	50/60	100-130		4	213.1630 (Δ)	213.3230	213.1630P (Δ)	213.3230F
	50/60	200-250		6	213.1633 (▲)(Δ)	213.3233 (▲)(Δ)	213.1633P (▲)(Δ)	213.3233F (▲)
	50/60	380-415		9	213.1638	213.3238	213.1638P	213.3238F
	50/60	480-500		7	213.16336	213.32336		
	50/60	trasf.		12	213.16333	213.32333		
	100-300	<50		10	213.16331	213.32331		
	>300-500	>50		2	213.16332	213.32332		
	c.c.	>50-250		3	213.16334	213.32334		
	c.c.	>250		8	213.16338	213.32338		
3P+E	50/60	100-130		4	213.1631	213.3231		
	50/60	200-250		9	213.1634	213.3234	213.1634P	213.3234F
	50/60	380-415		6	213.1636 (▲)(●)	213.3236 (▲)(●)	213.1636P (▲)(Δ)	213.3236F (▲)
	60	440-460		11	213.16365	213.32365		
	50/60	480-500		7	213.16366	213.32366		
	50/60	600-690		5	213.16367	213.32367		
	50 60	380 440		3	213.16364	213.32364		
	100-300	>50		10	213.16361	213.32361		
	>300-500	>50		2	213.16362	213.32362		
3P+N+E	50/60	100-130		4	213.1632	213.3232		
	50/60	208-250		9	213.1635 (▲)	213.3235 (▲)		
	50/60	346-415		6	213.1637 (▲)(●)	213.3237 (▲)(●)	213.1637P (▲)(Δ)	213.3237F (▲)
	50/60	480-500		7	213.16376	213.32376		
	50/60	600-690		5	213.16377	213.32377		
	60	440-460		11	213.16375	213.32375		
	50 60	380 440		3	213.16374	213.32374		
	100-300	<50		10	213.16371	213.32371		
	>300-500	>50		2	213.16372	213.32372		



= Screw terminals



= Spring terminals (fast wiring)



= Insulation perforating terminals (fast wiring)



= Mantle terminals



(●) Phase inverter

Plugs and flush mounting appliance inlets with phase inverter, page 31

OPTIMA Series

XENIA Series

EUREKA Series



IP44/IP54



63A

cable gland

213.6330

213.6333

213.6338

213.63336

213.63333

213.63331

213.63332

213.63334

213.63338

213.6331

213.6334

213.6336

213.63365

213.63366

213.63367

213.63364

213.63361

213.63362

213.6332

213.6335

213.6337

213.63376

213.63377

213.63375

213.63374

213.63371

213.63372



IP44



16A

cable gland

214.1630

214.1633

32A

cable gland

214.3230

214.3233

214.1636

214.3236

214.1637

214.3237



IP44



16A

cable sleeve

221.1630

221.1633

32A

cable sleeve

221.3230

221.3233

221.1636

221.3236

221.1637

221.3237



(▲) Black-coloured

Versions also available in black; just add ".K" at the end of the catalogue number.
Example 213.1633.K



(▲) Transparent grip

Version also available with transparent grip; just add ".TR" at the end of the catalogue number.
Example 213.1633.TR

Industrial plugs and sockets

PLUGS



IP66/IP67/IP69



IP66/IP67/IP69

Poles	Hz.	Volt	Colour	h.	IP66/IP67/IP69		IP66/IP67/IP69	
					16A cable gland	32A cable gland	63A cable gland	125A cable gland
2P+E	50/60	100-130		4	218.1630 (Δ)	218.3230	218.6330	218.12530
	50/60	200-250		6	218.1633 (Δ)(Δ)	218.3233 (Δ)	218.6333 (Δ)	218.12533 (Δ)
	50/60	380-415		9	218.1638	218.3238	218.6338	218.12538
	50/60	480-500		7	218.16336	218.32336	218.63336	218.125336
	50/60	trasf.		12	218.16333	218.32333	218.63333	218.125333
	100-300	<50		10	218.16331	218.32331	218.63331	218.125331
	>300-500	>50		2	218.16332	218.32332	218.63332	218.125332
	c.c.	>50-250		3	218.16334	218.32334	218.63334	218.125334
	c.c.	>250		8	218.16338	218.32338	218.63338	218.125338
3P+E	50/60	100-130		4	218.1631	218.3231	218.6331	218.12531
	50/60	200-250		9	218.1634	218.3234	218.6334	218.12534
	50/60	380-415		6	218.1636 (Δ)(•)	218.3236 (Δ)(Δ)(•)	218.6336 (Δ)	218.12536 (Δ)
	60	440-460		11	218.16365	218.32365	218.63365	218.125365
	50/60	480-500		7	218.16366	218.32366	218.63366	218.125366
	50/60	600-690		5	218.16367	218.32367	218.63367	218.125367
	50 60	380 440		3	218.16364	218.32364	218.63364	218.125364
	100-300	>50		10	218.16361	218.32361	218.63361	218.125361
	>300-500	>50		2	218.16362	218.32362	218.63362	218.125362
3P+N+E	50/60	100-130		4	218.1632	218.3232	218.6332	218.12532
	50/60	208-250		9	218.1635	218.3235	218.6335	218.12535
	50/60	346-415		6	218.1637 (Δ)(•)	218.3237 (Δ)(•)	218.6337 (Δ)	218.12537 (Δ)
	50/60	480-500		7	218.16376	218.32376	218.63376	218.125376
	50/60	600-690		5	218.16377	218.32377	218.63377	218.125377
	60	440-460		11	218.16375	218.32375	218.63375	218.125375
	50 60	380 440		3	218.16374	218.32374	218.63374	218.125374
	100-300	<50		10	218.16371	218.32371	218.63371	218.125371
	>300-500	>50		2	218.16372	218.32372	218.63372	218.125372



= Screw terminals



= Spring terminals (fast wiring)



= Insulation perforating terminals
(fast wiring)



= Mantle terminals



(•) Phase inverter

Plugs and flush mounting
appliance inlets with phase
inverter, page 31

OPTIMA Series

EUREKA Series



FAST WIRING



16A

cable gland

218.1630P (Δ)

218.1633P (Δ)(Δ)

218.1638P



32A

cable gland

218.3230F

218.3233F (Δ)

218.3238F

218.1634P

218.1636P (Δ)

218.3234F

218.3236F (Δ)

218.32364F

218.1637P (Δ)

218.3237F (Δ)



IP66/IP67



16A

cable gland

226.1630

226.1633

32A

cable gland

226.3230

226.3233

226.1636

226.3236

226.16367

226.32364

226.1637

226.3237



(Δ) Black-coloured

Versions also available in black; just add ".K" at the end of the catalogue number.
Example 218.1633.K



(Δ) Transparent grip

Version also available with transparent grip; just add ".TR" at the end of the catalogue number.
Example 218.1633.TR

Industrial plugs and sockets

FLUSH MOUNTING APPLIANCE INLETS

OPTIMA Series



IP44/IP54



IP44/IP54

Poles	Hz.	Volt	Colour	h.	IP44/IP54		IP44/IP54
					16A 75x75	32A 75x75	63A 100x110
2P+E	50/60	100-130		4	243.1690	243.3290	243.6390
	50/60	200-250		6	243.1693 (▲)	243.3293 (▲)	243.6393
	50/60	380-415		9	243.1698	243.3298	243.6398
	50/60	480-500		7			243.63936
	50/60	trasf.		12			243.63933
	100-300	<50		10			243.63931
	>300-500	>50		2			243.63932
	c.c.	>50-250		3			243.63934
	c.c.	>250		8			243.63938
3P+E	50/60	100-130		4	243.1691	243.3291	243.6391
	50/60	200-250		9	243.1694	243.3294	243.6394
	50/60	380-415		6	243.1696 (▲)(●)	243.3296 (▲)(●)	243.6396
	60	440-460		11	243.16965	243.32965	243.63965
	50/60	480-500		7			243.63966
	50/60	600-690		5			243.63967
	50 60	380 440		3	243.16964	243.32964	243.63964
	100-300	>50		10			243.63961
	>300-500	>50		2			243.63962
3P+N+E	50/60	100-130		4	243.1692	243.3292	243.6392
	50/60	208-250		9	243.1695	243.3295	243.6395
	50/60	346-415		6	243.1697 (▲)(●)	243.3297 (▲)(●)	243.6397
	50/60	480-500		7			243.63976
	50/60	600-690		5			243.63977
	60	440-460		11	243.16975	243.32975	243.63975
	50 60	380 440		3	243.16974	243.32974	243.63974
	100-300	<50		10			243.63971
	>300-500	>50		2			243.63972

= Screw terminals

= Mantle terminals

EUREKA Series

OPTIMA Series

EUREKA Series

IP44



90° ANGLED


16A

70x87

32A

70x87

242.1690	242.3290
242.1693	242.3293
242.1698	242.3298
242.16936	242.32936
242.16933	242.32933
242.16932	242.32932
242.16934	242.32934
242.16938	242.32938
242.1691	242.3291
242.1694	242.3294
242.1696	242.3296
242.16965	242.32965
242.16966	242.32966
242.16967	242.32967
242.16964	242.32964
242.16961	242.32961
242.16962	242.32962
242.1692	242.3292
242.1695	242.3295
242.1697	242.3297
242.16976	242.32976
242.16977	242.32977
242.16975	242.32975
242.16974	242.32974
242.16972	242.32972

IP66/IP67/IP69


16A

75x75

32A

75x75

248.1690	248.3290
248.1693 (▲)	248.3293 (▲)
248.1698	248.3298
248.16936	248.32936
248.16933	248.32933
248.16931	248.32931
248.16932	248.32932
248.16934	248.32934
248.16938	248.32938
248.1691	248.3291
248.1694	248.3294
248.1696 (▲)(●)	248.3296 (▲)(●)
248.16965	248.32965
248.16966	248.32966
248.16967	248.32967
248.16964	248.32964
248.16961	248.32961
248.16962	248.32962
248.1692	248.3292
248.1695	248.3295
248.1697 (▲)(●)	248.3297 (▲)(●)
248.16976	248.32976
248.16977	248.32977
248.16975	248.32975
248.16974	248.32974
248.16971	248.32971
248.16972	248.32972

IP66/IP67/IP69


63A

100x110

125A

114x114

248.6390	248.12590
248.6393	248.12593
248.6398	248.12598
248.63936	248.125936
248.63933	248.125933
248.63931	248.125931
248.63932	248.125932
248.63934	248.125934
248.63938	248.125938
248.6391	248.12591
248.6394	248.12594
248.6396	248.12596
248.63965	248.125965
248.63966	248.125966
248.63967	248.125967
248.63964	248.125964
248.63961	248.125961
248.63962	248.125962
248.6392	248.12592
248.6395	248.12595
248.6397 (▲)	248.12597 (▲)
248.63976	248.125976
248.63977	248.125977
248.63975	248.125975
248.63974	248.125974
248.63971	248.125971
248.63972	248.125972

IP66/IP67



90° ANGLED


16A

70x87

32A

70x87

247.1690	247.3290
247.1693	247.3293
247.1698	247.3298
247.16936	247.32936
247.16933	247.32933
247.16932	247.32932
247.16934	247.32934
247.16938	247.32938
247.1691	247.3291
247.1694	247.3294
247.1696	247.3296
247.16965	247.32965
247.16966	247.32966
247.16967	247.32967
247.16964	247.32964
247.16961	247.32961
247.16962	247.32962
247.1692	247.3292
247.1695	247.3295
247.1697	247.3297
247.16976	247.32976
247.16977	247.32977
247.16975	247.32975
247.16974	247.32974
247.16972	247.32972



(●) Phase inverter

Plugs and flush mounting
appliance inlets with phase
inverter, page 31


(▲) Black-coloured

Versions also available in black;
just add ".K" at the end of the catalogue
number. Example 243.1693.K

Industrial plugs and sockets

■ SURFACE MOUNTING APPLIANCE INLETS

OPTIMA Series

OPTIMA-TOP Series



IP44/IP54

METRIC ENTRY 



METRIC ENTRY 



IP44/IP54

METRIC ENTRY 

Poles	Hz.	Volt	Colour	h.	IP44/IP54		OPTIMA Series		OPTIMA-TOP Series
					16A M25	32A M32	16A M25	32A M32	
2P+E	50/60	100-130		4	240.1690	240.3290	240.1690-C	240.3290-C	240.6390T
	50/60	200-250		6	240.1693	240.3293	240.1693-C	240.3293-C	240.6393T
	50/60	380-415		9	240.1698	240.3298			240.6398T
	50/60	480-500		7					240.63936T
	50/60	trasf.		12					240.63933T
	100-300	<50		10					240.63931T
	>300-500	>50		2					240.63932T
	c.c.	>50-250		3					240.63934T
	c.c.	>250		8					240.63938T
3P+E	50/60	100-130		4	240.1691	240.3291			240.6391T
	50/60	200-250		9	240.1694	240.3294			240.6394T
	50/60	380-415		6	240.1696	240.3296	240.1696-C	240.3296-C	240.6396T
	60	440-460		11	240.16965	240.32965			240.63965T
	50/60	480-500		7					240.63966T
	50/60	600-690		5					240.63967T
	50 60	380 440		3	240.16964	240.32964			240.63964T
	100-300	>50		10					240.63961T
	>300-500	>50		2					240.63962T
3P+N+E	50/60	100-130		4	240.1692	240.3292			240.6392T
	50/60	208-250		9	240.1695	240.3295			240.6395T
	50/60	346-415		6	240.1697	240.3297	240.1697-C	240.3297-C	240.6397T
	50/60	480-500		7					240.63976T
	50/60	600-690		5					240.63977T
	60	440-460		11	240.16975	240.32975			240.63975T
	50 60	380 440		3	240.16974	240.32974			240.63974T
	100-300	<50		10					240.63971T
	>300-500	>50		2					240.63972T

 = Screw terminals

 = Mantle terminals

OPTIMA Series: open threaded cable entry on top side.
IP44 Cable sleeve provided.

OPTIMA-TOP Series: open threaded cable entry/reversible base.
Cable gland provided.

OPTIMA Series



IP66/IP67/IP69

METRIC
ENTRY

16A

M25

32A

M32

245.1690

245.3290

245.1693

245.3293

245.1698

245.3298

245.16936

245.32936

245.16933

245.32933

245.16931

245.32931

245.16932

245.32932

245.16934

245.32934

245.16938

245.32938

245.1691

245.3291

245.1694

245.3294

245.1696

245.3296

245.16965

245.32965

245.16966

245.32966

245.16967

245.32967

245.16964

245.32964

245.16961

245.32961

245.16962

245.32962

245.1692

245.3292

245.1695

245.3295

245.1697

245.3297

245.16976

245.32976

245.16977

245.32977

245.16975

245.32975

245.16974

245.32974

245.16971

245.32971

245.16972

245.32972

OPTIMA-TOP Series



IP66/IP67/IP69

METRIC
ENTRY

63A

M40

125A

M63

245.6390T

245.12590T

245.6393T

245.12593T

245.6398T

245.12598T

245.63936T

245.125936T

245.63933T

245.125933T

245.63931T

245.125931T

245.63932T

245.125932T

245.63934T

245.125934T

245.63938T

245.125938T

245.6391T

245.12591T

245.6394T

245.12594T

245.6396T

245.12596T

245.63965T

245.125965T

245.63966T

245.125966T

245.63967T

245.125967T

245.63964T

245.125964T

245.63961T

245.125961T

245.63962T

245.125962T

245.6392T

245.12592T

245.6395T

245.12595T

245.6397T

245.12597T

245.63976T

245.125976T

245.63977T

245.125977T

245.63975T

245.125975T

245.63974T

245.125974T

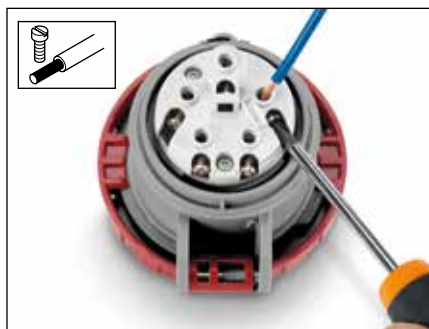
245.63971T

245.125971T

245.63972T

245.125972T

SCREW TERMINALS - CONVENTIONAL WIRING



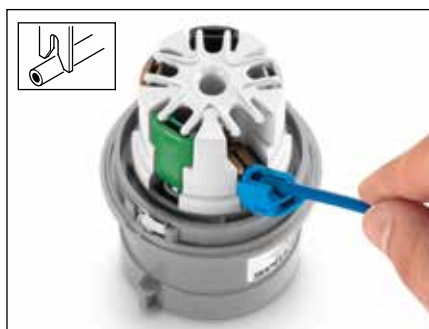
Versions: 16A-32A
Plugs and connectors
16A-32A
Flush mounting plugs
and sockets – 16-32A
TOP version surface
mounting sockets.

SPRING TERMINALS - FAST WIRING



Versions: 32A
Plugs and connectors - 32A
Flush mounting
sockets – 16-32A
TOP version surface
mounting sockets.

INSULATION PERFORATING TERMINALS - FAST WIRING



Versions: 16A
Plugs and connectors.

MANTLE TERMINALS



Versions: 63 - 125A
Plugs and connectors.

Industrial plugs and sockets

CONNECTORS



IP44/IP54

SAFE-IN

Poles	Hz.	Volt	Colour	h.	IP44/IP54		SAFE-IN
					16A cable gland	32A cable gland	16A cable gland
2P+E	50/60	100-130		4	313.1640 (Δ)	313.3240	313.1640H
	50/60	200-250		6	313.1643 (Δ) (Δ)	313.3243 (Δ) (Δ)	313.1643H (Δ)
	50/60	380-415		9	313.1648	313.3248	313.1648H
	50/60	480-500		7	313.16436	313.32436	
	50/60	trasf.		12	313.16433	313.32433	
	100-300	<50		10	313.16431	313.32431	
	>300-500	>50		2	313.16432	313.32432	
	c.c.	>50-250		3	313.16434	313.32434	
	c.c.	>250		8	313.16438	313.32438	
3P+E	50/60	100-130		4	313.1641	313.3241	
	50/60	200-250		9	313.1644	313.3244	313.1644H
	50/60	380-415		6	313.1646 (Δ)	313.3246 (Δ)	313.1646H (Δ)
	60	440-460		11	313.16465	313.32465	
	50/60	480-500		7	313.16466	313.32466	
	50/60	600-690		5	313.16467	313.32467	
	50 60	380 440		3	313.16464	313.32464	
	100-300	>50		10	313.16461	313.32461	
	>300-500	>50		2	313.16462	313.32462	
3P+N+E	50/60	100-130		4	313.1642	313.3242	
	50/60	208-250		9	313.1645 (Δ)	313.3245 (Δ)	
	50/60	346-415		6	313.1647 (Δ)	313.3247 (Δ)	313.1647H (Δ)
	50/60	480-500		7	313.16476	313.32476	
	50/60	600-690		5	313.16477	313.32477	
	60	440-460		11	313.16475	313.32475	
	50 60	380 440		3	313.16474	313.32474	
	100-300	<50		10	313.16471	313.32471	
	>300-500	>50		2	313.16472	313.32472	



= Screw terminals



= Spring terminals (fast wiring)



= Insulation perforating terminals
(fast wiring)



= Mantle terminals

OPTIMA Series

XENIA Series

EUREKA Series

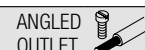


FAST WIRING

IP44/IP54

IP44

IP44

**16A**

cable gland

32A

cable gland

63A

cable gland

16A

cable gland

32A

cable gland

16A

cable sleeve

32A

cable sleeve

313.1640P (Δ)**313.3240F****313.6340****314.1640****314.3240****321.1640****321.3240****313.1643P (Δ) (Δ)****313.3243F (Δ)****313.6343****314.1643****314.3243****321.1643****321.3243****313.1648P****313.3248F****313.6348****313.63436****313.63433****313.63431****313.63432****313.63434****313.63438****313.6341****313.1644P****313.3244F****313.6344****313.1646P (Δ)****313.3246F (Δ)****313.6346****313.63465****313.63466****313.63467****313.63464****313.63461****313.63462****313.6342****313.6345****313.1647P (Δ)****313.3247F (Δ)****313.6347****313.63476****313.63477****313.63475****313.63474****313.63471****313.63472****314.1646****314.3246****321.1646****321.3246****314.1647****314.3247****321.1647****321.3247****(Δ) Black-coloured**

Versions also available in black;
just add ".K" at the end of the catalogue number.
Example 313.1643.K

**(Δ) Transparent grip**

Version also available with transparent grip;
just add ".TR" at the end of the catalogue number.
Example 313.1643.TR

Industrial plugs and sockets

CONNECTORS



IP66/IP67/IP69



IP66/IP67/IP69

Poles	Hz.	Volt	Colour	h.	IP66/IP67/IP69		IP66/IP67/IP69	
					16A cable gland	32A cable gland	63A cable gland	125A cable gland
2P+E	50/60	100-130		4	318.1640 (Δ)	318.3240	318.6340	318.12540
	50/60	200-250		6	318.1643 (Δ) (Δ)	318.3243 (Δ)	318.6343 (Δ)	318.12543 (Δ)
	50/60	380-415		9	318.1648	318.3248	318.6348	318.12548
	50/60	480-500		7	318.16436	318.32436	318.63436	318.125436
	50/60	trasf.		12	318.16433	318.32433	318.63433	318.125433
	100-300	<50		10	318.16431	318.32431	318.63431	318.125431
	>300-500	>50		2	318.16432	318.32432	318.63432	318.125432
	c.c.	>50-250		3	318.16434	318.32434	318.63434	318.125434
	c.c.	>250		8	318.16438	318.32438	318.63438	318.125438
3P+E	50/60	100-130		4	318.1641	318.3241	318.6341	318.12541
	50/60	200-250		9	318.1644	318.3244	318.6344	318.12544
	50/60	380-415		6	318.1646 (Δ)	318.3246 (Δ) (Δ)	318.6346 (Δ)	318.12546 (Δ)
	60	440-460		11	318.16465	318.32465	318.63465	318.125465
	50/60	480-500		7	318.16466	318.32466	318.63466	318.125466
	50/60	600-690		5	318.16467	318.32467	318.63467	318.125467
	50 60	380 440		3	318.16464	318.32464	318.63464	318.125464
	100-300	>50		10	318.16461	318.32461	318.63461	318.125461
	>300-500	>50		2	318.16462	318.32462	318.63462	318.125462
3P+N+E	50/60	100-130		4	318.1642	318.3242	318.6342	318.12542
	50/60	208-250		9	318.1645	318.3245	318.6345	318.12545
	50/60	346-415		6	318.1647 (Δ)	318.3247 (Δ)	318.6347 (Δ)	318.12547 (Δ)
	50/60	480-500		7	318.16476	318.32476	318.63476	318.125476
	50/60	600-690		5	318.16477	318.32477	318.63477	318.125477
	60	440-460		11	318.16475	318.32475	318.63475	318.125475
	50 60	380 440		3	318.16474	318.32474	318.63474	318.125474
	100-300	<50		10	318.16471	318.32471	318.63471	318.125471
	>300-500	>50		2	318.16472	318.32472	318.63472	318.125472



= Screw terminals



= Spring terminals (fast wiring)



= Insulation perforating terminals
(fast wiring)



= Mantle terminals



IP66/IP67



32A

cable gland

326.3240

326.3243

326.3246

326.3246

326.32464

326.3247



(Δ) **Transparent grip**

(Δ) Transparent grip
Version also available with transparent grip;
just add ".TR" at the end of the catalogue number.
Example 318.1643.TR

Industrial plugs and sockets

FLUSH MOUNTING SOCKET OUTLETS



					IP44/IP54		SAFE-IN	FAST WIRING	
					ANGLED OUTLET STANDARD FLANGE				
Poles	Hz.	Volt	Colour	h.	16A 70x87	32A 84x106	16A 70x87	16A 70x87	32A 84x106
2P+E	50/60	100-130		4	413.1660	413.3260	413.1660H	413.1660F	413.3260F
	50/60	200-250		6	413.1663 (▲)	413.3263 (▲)	413.1663H (▲)	413.1663F (▲)	413.3263F (▲)
	50/60	380-415		9	413.1668	413.3268	413.1668H	413.1668F	413.3268F
	50/60	480-500		7	413.16636	413.32636			
	50/60	trasf.		12	413.16633	413.32633			
	100-300	<50		10	413.16631	413.32631			
	>300-500	>50		2	413.16632	413.32632			
	c.c.	>50-250		3	413.16634	413.32634			
	c.c.	>250		8	413.16638	413.32638			
3P+E	50/60	100-130		4	413.1661	413.3261			
	50/60	200-250		9	413.1664	413.3264	413.1664H	413.1664F	413.3264F
	50/60	380-415		6	413.1666 (▲)	413.3266 (▲)	413.1666H (▲)	413.1666F (▲)	413.3266F (▲)
	60	440-460		11	413.16665	413.32665			
	50/60	480-500		7	413.16666	413.32666			
	50/60	600-690		5	413.16667	413.32667			
	50 60	380 440		3	413.16664	413.32664			
	100-300	>50		10	413.16661	413.32661			
	>300-500	>50		2	413.16662	413.32662			
3P+N+E	50/60	100-130		4	413.1662	413.3262			
	50/60	208-250		9	413.1665	413.3265			
	50/60	346-415		6	413.1667 (▲)	413.3267 (▲)	413.1667H (▲)	413.1667F (▲)	413.3267F (▲)
	50/60	480-500		7	413.16676	413.32676			
	50/60	600-690		5	413.16677	413.32677			
	60	440-460		11	413.16675	413.32675			
	50 60	380 440		3	413.16674	413.32674			
	100-300	<50		10	413.16671	413.32671			
	>300-500	>50		2	413.16672	413.32672			

- = Screw terminals
- = Spring terminals (fast wiring)
- = Mantle terminals



(▲) Black-coloured

Version also available in black; just add ".K" at the end of the catalogue number.
Example 413.1663.K



IP44/IP54

STRAIGHT OUTLET



IP44/IP54

ANGLED OUTLET
STANDARD FLANGE


IP44/IP54

STRAIGHT OUTLET
STANDARD FLANGE


IP44

90° ANGLED



16A 75x75	16A 62x62	16A 55x55	32A 75x75	63A 100x110	63A 100x110	16A 70x87	32A 70x87
423.1660	423.1660/R	423.1660/RR	423.3260	413.6360	423.6360	452.1660	452.3260
423.1663 (Δ)	423.1663/R (Δ)	423.1663/RR	423.3263 (Δ)	413.6363	423.6363	452.1663	452.3263
423.1668	423.1668/R	423.1668/RR	423.3268	413.6368	423.6368	452.1668	452.3268
423.16636			423.32636	413.63636	423.63636	452.16636	452.32636
423.16633			423.32633	413.63633	423.63633	452.16633	452.32633
423.16631			423.32631	413.63631	423.63631		
423.16632			423.32632	413.63632	423.63632	452.16632	452.32632
423.16634			423.32634	413.63634	423.63634	452.16634	452.32634
423.16638			423.32638	413.63638	423.63638	452.16638	452.32638
423.1661	423.1661/R		423.3261	413.6361	423.6361	452.1661	452.3261
423.1664	423.1664/R		423.3264	413.6364	423.6364	452.1664	452.3264
423.1666 (Δ)	423.1666/R (Δ)		423.3266 (Δ)	413.6366	423.6366	452.1666	452.3266
423.16665			423.32665	413.63665	423.63665	452.16665	452.32665
423.16666			423.32666	413.63666	423.63666	452.16666	452.32666
423.16667			423.32667	413.63667	423.63667	452.16667	452.32667
423.16664			423.32664	413.63664	423.63664	452.16664	452.32664
423.16661			423.32661	413.63661	423.63661	452.16661	452.32661
423.16662			423.32662	413.63662	423.63662	452.16662	452.32662
423.1662			423.3262	413.6362	423.6362	452.1662	452.3262
423.1665			423.3265	413.6365	423.6365	452.1665	452.3265
423.1667 (Δ)			423.3267 (Δ)	413.6367	423.6367	452.1667	452.3267
423.16676			423.32676	413.63676	423.63676	452.16676	452.32676
423.16677			423.32677	413.63677	423.63677	452.16677	452.32677
423.16675			423.32675	413.63675	423.63675	452.16675	452.32675
423.16674			423.32674	413.63674	423.63674	452.16674	452.32674
423.16671			423.32671	413.63671	423.63671		
423.16672			423.32672	413.63672	423.63672	452.16672	452.32672



Accessories

Empty boxes for creating surface mounting versions, page 33



Auxiliary contact

For flush mounting sockets angled outlet.

Industrial plugs and sockets

FLUSH MOUNTING SOCKET OUTLETS



					IP66/IP67/IP69		SAFE-IN	FAST WIRING	
					ANGLED OUTLET STANDARD FLANGE				
Poles	Hz.	Volt	Colour	h.	16A 70x87	32A 84x106	16A 70x87	16A 70x87	32A 84x106
2P+E	50/60	100-130		4	418.1660	418.3260	418.1660H	418.1660F	418.3260F
	50/60	200-250		6	418.1663 (▲)	418.3263 (▲)	418.1663H (▲)	418.1663F (▲)	418.3263F (▲)
	50/60	380-415		9	418.1668	418.3268	418.1668H	418.1668F	418.3268F
	50/60	480-500		7	418.16636	418.32636			
	50/60	trasf.		12	418.16633	418.32633			
	100-300	<50		10	418.16631	418.32631			
	>300-500	>50		2	418.16632	418.32632			
	c.c.	>50-250		3	418.16634	418.32634			
	c.c.	>250		8	418.16638	418.32638			
3P+E	50/60	100-130		4	418.1661	418.3261			
	50/60	200-250		9	418.1664	418.3264	418.1664H	418.1664F	418.3264F
	50/60	380-415		6	418.1666 (▲)	418.3266 (▲)	418.1666H (▲)	418.1666F (▲)	418.3266F (▲)
	60	440-460		11	418.16665	418.32665			
	50/60	480-500		7	418.16666	418.32666			
	50/60	600-690		5	418.16667	418.32667			
	50 60	380 440		3	418.16664	418.32664			
	100-300	>50		10	418.16661	418.32661			
	>300-500	>50		2	418.16662	418.32662			
3P+N+E	50/60	100-130		4	418.1662	418.3262			
	50/60	208-250		9	418.1665	418.3265			
	50/60	346-415		6	418.1667 (▲)	418.3267 (▲)	418.1667H (▲)	418.1667F (▲)	418.3267F (▲)
	50/60	480-500		7	418.16676	418.32676			
	50/60	600-690		5	418.16677	418.32677			
	60	440-460		11	418.16675	418.32675			
	50 60	380 440		3	418.16674	418.32674			
	100-300	<50		10	418.16671	418.32671			
	>300-500	>50		2	418.16672	418.32672			

- = Screw terminals
- = Spring terminals (fast wiring)
- = Mantle terminals



(▲) Black-coloured

Version also available in black; just add ".K" at the end of the catalogue number.
Example 418.1663.K



IP66/IP67/IP69

STRAIGHT OUTLET



IP66/IP67/IP69

ANGLED OUTLET
STANDARD FLANGE


IP66/IP67/IP69

STRAIGHT OUTLET
STANDARD FLANGE


IP66/IP67

90° ANGLED



16A 75x75	16A 62x62	16A 55x55	32A 75x75	63A 100x110	125A 114x114	63A 100x110	125A 114x114	16A 70x87	32A 70x87
428.1660	428.1660/R	428.1660/RR	428.3260	418.6360	418.12560	428.6360	428.12560	457.1660	457.3260
428.1663 (▲)	428.1663/R (▲)	428.1663/RR	428.3263 (▲)	418.6363	418.12563	428.6363	428.12563	457.1663	457.3263
428.1668	428.1668/R	428.1668/RR	428.3268	418.6368	418.12568	428.6368	428.12568	457.1668	457.3268
428.16636			428.32636	418.63636	418.125636	428.63636	428.125636	457.16636	457.32636
428.16633			428.32633	418.63633	418.125633	428.63633	428.125633	457.16633	457.32633
428.16631			428.32631	418.63631	418.125631	428.63631	428.125631		
428.16632			428.32632	418.63632	418.125632	428.63632	428.125632	457.16632	457.32632
428.16634			428.32634	418.63634	418.125634	428.63634	428.125634	457.16634	457.32634
428.16638			428.32638	418.63638	418.125638	428.63638	428.125638	457.16638	457.32638
428.1661	428.1661/R		428.3261	418.6361	418.12561	428.6361	428.12561	457.1661	457.3261
428.1664	428.1664/R		428.3264	418.6364	418.12564	428.6364	428.12564	457.1664	457.3264
428.1666 (▲)	428.1666/R (▲)		428.3266 (▲)	418.6366	418.12566	428.6366	428.12566	457.1666	457.3266
428.16665			428.32665	418.63665	418.125665	428.63665	428.125665	457.16665	457.32665
428.16666			428.32666	418.63666	418.125666	428.63666	428.125666	457.16666	457.32666
428.16667			428.32667	418.63667	418.125667	428.63667	428.125667	457.16667	457.32667
428.16664			428.32664	418.63664	418.125664	428.63664	428.125664	457.16664	457.32664
428.16661			428.32661	418.63661	418.125661	428.63661	428.125661	457.16661	457.32661
428.16662			428.32662	418.63662	418.125662	428.63662	428.125662	457.16662	457.32662
428.1662			428.3262	418.6362	418.12562	428.6362	428.12562	457.1662	457.3262
428.1665			428.3265	418.6365	418.12565	428.6365	428.12565	457.1665	457.3265
428.1667 (▲)			428.3267 (▲)	418.6367 (▲)	418.12567 (▲)	428.6367	428.12567	457.1667	457.3267
428.16676			428.32676	418.63676	418.125676	428.63676	428.125676	457.16676	457.32676
428.16677			428.32677	418.63677	418.125677	428.63677	428.125677	457.16677	457.32677
428.16675			428.32675	418.63675	418.125675	428.63675	428.125675	457.16675	457.32675
428.16674			428.32674	418.63674	418.125674	428.63674	428.125674	457.16674	457.32674
428.16671			428.32671	418.63671	418.125671	428.63671	428.125671		
428.16672			428.32672	418.63672	418.125672	428.63672	428.125672	457.16672	457.32672



Accessories

Empty boxes for creating surface mounting versions, page 33



Auxiliary contact

For flush mounting sockets angled outlet.

Industrial plugs and sockets

■ SURFACE MOUNTING SOCKET OUTLETS

OPTIMA-TOP Series



Poles	Hz.	Volt	Colour	h.	IP44		SAFE-IN	FAST WIRING	
					16A M20/M25	32A M32	16A M20/M25	16A M20/M25	32A M32
2P+E	50/60	100-130		4	513.1650T (◇)	513.3250T	513.1650TH (◇)	513.1650TF (◇)	513.3250TF
	50/60	200-250		6	513.1653T (◇)	513.3253T	513.1653TH (◇)	513.1653TF (◇)	513.3253TF
	50/60	380-415		9	513.1658T (◇)	513.3258T	513.1658TH (◇)	513.1658TF (◇)	513.3258TF
	50/60	480-500		7	513.16536T (◇)	513.32536T			
	50/60	trasf.		12	513.16533T (◇)	513.32533T			
	100-300	<50		10	513.16531T (◇)	513.32531T			
	>300-500	>50		2	513.16532T (◇)	513.32532T			
	c.c.	>50-250		3	513.16534T (◇)	513.32534T			
	c.c.	>250		8	513.16538T (◇)	513.32538T			
3P+E	50/60	100-130		4	513.1651T	513.3251T			
	50/60	200-250		9	513.1654T	513.3254T	513.1654TH	513.1654TF	513.3254TF
	50/60	380-415		6	513.1656T	513.3256T	513.1656TH	513.1656TF	513.3256TF
	60	440-460		11	513.16565T	513.32565T			
	50/60	480-500		7	513.16566T	513.32566T			
	50/60	600-690		5	513.16567T	513.32567T			
	50 60	380 440		3	513.16564T	513.32564T			
	100-300	>50		10	513.16561T	513.32561T			
	>300-500	>50		2	513.16562T	513.32562T			
3P+N+E	50/60	100-130		4	513.1652T	513.3252T			
	50/60	208-250		9	513.1655T	513.3255T			
	50/60	346-415		6	513.1657T	513.3257T	513.1657TH	513.1657TF	513.3257TF
	50/60	480-500		7	513.16576T	513.32576T			
	50/60	600-690		5	513.16577T	513.32577T			
	60	440-460		11	513.16575T	513.32575T			
	50 60	380 440		3	513.16574T	513.32574T			
	100-300	<50		10	513.16571T	513.32571T			
	>300-500	>50		2	513.16572T	513.32572T			



= Screw terminals



= Spring terminals (fast wiring)

(◇) = 2P+E 16A only M20

OPTIMA-TOP Series: 2+1 blind threaded knockout/reversible base.

OPTIMA-BASE Series: open threaded cable entry on top side.

IP44 version: cable sleeve provided.

OPTIMA-TOP Series



IP66/IP67/IP69



FAST WIRING

							
16A	32A	16A	32A	16A	16A	32A	
M20/M25	M32	M20/M25	M32	M20/M25	M20/M25	M32	
513.1650 (◇)	513.3250	518.1650T (◇)	518.3250T	518.1650TH (◇)	518.1650TF (◇)	518.3250TF	
513.1653 (◇)	513.3253	518.1653T (◇)	518.3253T	518.1653TH (◇)	518.1653TF (◇)	518.3253TF	
		518.1658T (◇)	518.3258T	518.1658TH (◇)	518.1658TF (◇)	518.3258TF	
		518.16536T (◇)	518.32536T				
		518.16533T (◇)	518.32533T				
		518.16531T (◇)	518.32531T				
		518.16532T (◇)	518.32532T				
		518.16534T (◇)	518.32534T				
		518.16538T (◇)	518.32538T				
		518.1651T	518.3251T				
		518.1654T	518.3254T	518.1654TH	518.1654TF	518.3254TF	
513.1656	513.3256	518.1656T	518.3256T	518.1656TH	518.1656TF	518.3256TF	
		518.16565T	518.32565T				
		518.16566T	518.32566T				
		518.16567T	518.32567T				
		518.16564T	518.32564T			518.32564TF	
		518.16561T	518.32561T				
		518.16562T	518.32562T				
		518.1652T	518.3252T				
		518.1655T	518.3255T				
513.1657	513.3257	518.1657T	518.3257T	518.1657TH	518.1657TF	518.3257TF	
		518.16576T	518.32576T				
		518.16577T	518.32577T				
		518.16575T	518.32575T				
		518.16574T	518.32574T				
		518.16571T	518.32571T				
		518.16572T	518.32572T				

Industrial plugs and sockets

■ SURFACE MOUNTING SOCKET OUTLETS



IP44/IP54

STRAIGHT BOX

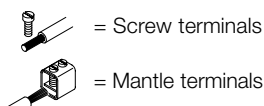


IP44/IP54

ANGLED BOX



Poles	Hz.	Volt	Colour	h.	IP44/IP54 STRAIGHT BOX		IP44/IP54 ANGLED BOX	
					16A Drilling point mark	32A Drilling point mark	16A M20/M25	32A M32
2P+E	50/60	100-130		4	522.1650	522.3250	512.1650	512.3250
	50/60	200-250		6	522.1653	522.3253	512.1653	512.3253
	50/60	380-415		9	522.1658	522.3258	512.1658	512.3258
	50/60	480-500		7				
	50/60	trasf.		12				
	100-300	<50		10				
	>300-500	>50		2				
	c.c.	>50-250		3				
	c.c.	>250		8				
3P+E	50/60	100-130		4	522.1651	522.3251	512.1651	512.3251
	50/60	200-250		9	522.1654	522.3254	512.1654	512.3254
	50/60	380-415		6	522.1656	522.3256	512.1656	512.3256
	60	440-460		11				
	50/60	480-500		7				
	50/60	600-690		5				
	50 60	380 440		3				
	100-300	>50		10				
	>300-500	>50		2				
3P+N+E	50/60	100-130		4	522.1652	522.3252	512.1652	512.3252
	50/60	208-250		9	522.1655	522.3255	512.1655	512.3255
	50/60	346-415		6	522.1657	522.3257	512.1657	512.3257
	50/60	480-500		7				
	50/60	600-690		5				
	60	440-460		11				
	50 60	380 440		3				
	100-300	<50		10				
	>300-500	>50		2				



OPTIMA Series IP44/IP54: cable sleeve provided.

OPTIMA-TOP Series: open threaded cable entry/reversible base. Cable gland provided.

ANGLED BOX: open threaded cable entry on top side.

STRAIGHT BOX: blank side and drilling point mark.

OPTIMA Series

XENIA Series

OPTIMA-TOP Series



IP66/IP67/IP69

IP66/IP67/IP69

IP44

IP44/IP54

IP66/IP67/IP69

STRAIGHT BOX



ANGLED BOX



ANGLED BOX



METRIC ENTRY



METRIC ENTRY

**16A****32A****16A****32A****16A****32A****63A****63A****125A**Drilling point
markDrilling point
mark

M20/M25

M32

75x75

75x75

M40

M40

M63

527.1650

527.3250

517.1650

517.3250

514.1650

514.3250

513.6350T

518.6350T

518.12550T

527.1653

527.3253

517.1653

517.3253

514.1653

514.3253

513.6353T

518.6353T

518.12553T

527.1658

527.3258

517.1658

517.3258

513.6358T

518.6358T

518.12558T

513.63536T

518.63536T

518.125536T

513.63533T

518.63533T

518.125533T

513.63531T

518.63531T

518.125531T

513.63532T

518.63532T

518.125532T

513.63534T

518.63534T

518.125534T

513.63538T

518.63538T

518.125538T

527.1651

527.3251

517.1651

517.3251

527.1654

527.3254

517.1654

517.3254

527.1656

527.3256

517.1656

517.3256

514.1656

514.3256

513.6356T

518.6356T

518.12556T

513.63565T

518.63565T

518.125565T

513.63566T

518.63566T

518.125566T

513.63567T

518.63567T

518.125567T

513.63564T

518.63564T

518.125564T

513.63561T

518.63561T

518.125561T

513.63562T

518.63562T

518.125562T

527.1652

527.3252

517.1652

517.3252

527.1655

527.3255

517.1655

517.3255

527.1657

527.3257

517.1657

517.3257

514.1657

514.3257

513.6357T

518.6357T

518.12557T

513.63576T

518.63576T

518.125576T

513.63577T

518.63577T

518.125577T

513.63575T

518.63575T

518.125575T

513.63574T

518.63574T

518.125574T

513.63571T

518.63571T

518.125571T

513.63572T

518.63572T

518.125572T

517.32564

Industrial plugs and sockets

■ SURFACE MOUNTING SOCKET OUTLETS

IP44/IP54

Industrial socket	Poles	Volt	Colour	h.	Cable Inlet		
16A	2P+E	200-250		6	M32x1,5	513.1653-PN	513.1653-BN
	3P+E	380-415		6	M32x1,5	513.1656-PN	513.1656-BN
	3P+N+E	346-415		6	M32x1,5	513.1657-PN	513.1657-BN
	3P+N+E	346-415		6	M32x1,5		

(*) BS standard sockets provided with 10A fuse protection.

- Available in further domestic sockets standard (contact technical service).

(▲) Household Swiss socket 3P+N+E.

- Solution already wired up to the power supply terminal board.

- Open threaded cable entry on top side.

- Cable sleeve provided.

IP44/IP54

Industrial socket	Poles	Volt	Colour	h.	Cable Inlet		
32A	2P+E	200-250		6	M32x1,5	513.3253-PF	513.3253-BF
	3P+E	380-415		6	M32x1,5	513.3256-PF	513.3256-BF
	3P+N+E	346-415		6	M32x1,5	513.3257-PF	513.3257-BF

- Household socket protected by 10A fuse (time-delay).

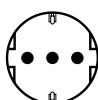
- Available in further domestic sockets standard (contact technical service).

- Solution already wired up to the power supply terminal board.

- Open threaded cable entry on top side.

- Cable sleeve provided.

**ITALIAN
STANDARD
P30 - 16A**



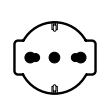
**BRITISH
STANDARD
13A**



**FRENCH
STANDARD
16A**



**PLURISTANDARD
STANDARD
P40-16A**



**BRAZILIAN-SWISS
STANDARD
10A**



**DANISH
STANDARD
10A**



 = Screw terminals


 WITHOUT
PROTECTION 

				 WITHOUT SHUTTERS	 WITH SHUTTERS		
513.1653-FN	513.1653-LN	513.1653-CF	513.1653-KN	513.1653-DN	513.1653-GN	513.1653-SN	513.1653-AF
513.1656-FN	513.1656-LN	513.1656-CF	513.1656-KN	513.1656-DN	513.1656-GN	513.1656-SN	513.1656-AF
513.1657-FN	513.1657-LN	513.1657-CF	513.1657-KN	513.1657-DN	513.1657-GN	513.1657-SN	513.1657-AF
						513.1657-S5N (▲)	


 WITH FUSE
PROTECTION 

				 WITHOUT SHUTTERS	 WITH SHUTTERS		
513.3253-FF	513.3253-LF	513.3253-CF	513.3253-KF	513.3253-DF	513.3253-GF	513.3253-SF	513.3253-AF
513.3256-FF	513.3256-LF	513.3256-CF	513.3256-KF	513.3256-DF	513.3256-GF	513.3256-SF	513.3256-AF
513.3257-FF	513.3257-LF	513.3257-CF	513.3257-KF	513.3257-DF	513.3257-GF	513.3257-SF	513.3257-AF

 ARGENTINIAN
STANDARD
10A

 GERMAN
STANDARD
16A


Industrial plugs and sockets

■ SURFACE MOUNTING SWITCHED SOCKETS 0/I

OPTIMA-COMBI Series



IP44/IP54



Industrial socket	Poles	Volt	Colour	h.	Cable Inlet	
16A	2P+E	200-250		6	M25	513.1653TS
	3P+E	380-415		6	M25	513.1656TS
	3P+N+E	346-415		6	M25	513.1657TS
32A	2P+E	200-250		6	M25	513.3253TS.A
	2P+E	200-250		6	M32	513.3253TS
	3P+E	380-415		6	M25	513.3256TS.A
	3P+E	380-415		6	M32	513.3256TS
	3P+N+E	346-415		6	M25	513.3257TS.A
	3P+N+E	346-415		6	M32	513.3257TS

- M25: 2+1 open threaded cable entry/reversible base.

- M32: 2+1 blind threaded knockout/reversible base.

- Cable sleeve provided.

■ SURFACE MOUNTING SWITCHED SOCKETS 0/I

OPTIMA-COMBI Series



IP66/IP67/IP69



Industrial socket	Poles	Volt	Colour	h.	Cable Inlet	
16A	2P+E	200-250		6	M25	518.1653TS
	3P+E	380-415		6	M25	518.1656TS
	3P+N+E	346-415		6	M25	518.1657TS
32A	2P+E	200-250		6	M25	518.3253TS.A
	2P+E	200-250		6	M32	518.3253TS
	3P+E	380-415		6	M25	518.3256TS.A
	3P+E	380-415		6	M32	518.3256TS
	3P+N+E	346-415		6	M25	518.3257TS.A
	3P+N+E	346-415		6	M32	518.3257TS

- M25: 2+1 open threaded cable entry/reversible base.

- M32: 2+1 blind threaded knock out/reversible base.

= Screw terminals

■ SURFACE MOUNTING SWITCHED SOCKETS 0/I

OPTIMA-COMBI Series



IP44/IP54

WITHOUT PROTECTION



Industrial socket	Poles	Volt	Colour	h.	Cable Inlet	Domestic sockets				
16A	2P+E	200-250		6	M32	1	513.1653-1DNS	513.1653-1FNS		
	2P+E	200-250		6	M32	2	513.1653-2DNS	513.1653-2FNS	513.1653-2AFS	
	3P+E	380-415		6	M32	1	513.1656-1DNS	513.1656-1FNS		
	3P+E	380-415		6	M32	2	513.1656-2DNS	513.1656-2FNS	513.1656-2AFS	513.1656-2KNS
	3P+N+E	346-415		6	M32	1	513.1657-1DNS	513.1657-1FNS		
	3P+N+E	346-415		6	M32	2	513.1657-2DNS	513.1657-2FNS	513.1657-2AFS	513.1657-2KNS

- Open threaded cable entry on top side.
- Cable sleeve provided.

- Available in further domestic sockets standard (contact technical service).



IP44/IP54

WITH FUSE PROTECTION



Industrial socket	Poles	Volt	Colour	h.	Cable Inlet	Domestic sockets			
32A	2P+E	200-250		6	M32	1	513.3253-1DFS	513.3253-1FFS	
	2P+E	200-250		6	M32	2	513.3253-2DFS	513.3253-2FFS	513.3253-2AFS
	3P+E	380-415		6	M32	1	513.3256-1DFS	513.3256-1FFS	
	3P+E	380-415		6	M32	2	513.3256-2DFS	513.3256-2FFS	513.3256-2AFS
	3P+N+E	346-415		6	M32	1	513.3257-1DFS	513.3257-1FFS	
	3P+N+E	346-415		6	M32	2	513.3257-2DFS	513.3257-2FFS	513.3257-2AFS

- Household socket protected by 10A fuse (time-delay).
- Open threaded cable entry on top side.

- Cable sleeve provided.
- Available in further domestic sockets standard (contact technical service).

GERMAN
STANDARD
16A



FRENCH
STANDARD
16A



ARGENTINIAN
STANDARD
10A



DANISH
STANDARD
10A



Industrial plugs and sockets

■ SURFACE MOUNTING SWITCHED SOCKETS L/O/R (WITH REVERSING SWITCH)

OPTIMA-COMBI Series



IP44/IP54

WITHOUT
PROTECTION



Industrial socket	Poles	Volt	Colour	h.	Cable Inlet	Domestic sockets		
16A	3P+E	380-415		6	M32	1	513.1656-1DNR	513.1656-1FNR
	3P+E	380-415		6	M32	2	513.1656-2DNR	513.1656-2FNR
	3P+N+E	346-415		6	M32	1	513.1657-1DNR	513.1657-1FNR
	3P+N+E	346-415		6	M32	2	513.1657-2DNR	513.1657-2FNR

- Open threaded cable entry on top side.
- Cable sleeve provided.

- Available in further domestic sockets standard (contact technical service).



IP44/IP54

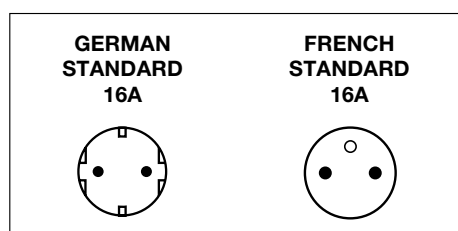
WITH FUSE
PROTECTION



Industrial socket	Poles	Volt	Colour	h.	Cable Inlet	Domestic sockets		
32A	3P+E	380-415		6	M32	1	513.3256-1DFR	513.3256-1FFR
	3P+E	380-415		6	M32	2	513.3256-2DFR	513.3256-2FFR
	3P+N+E	346-415		6	M32	1	513.3257-1DFR	513.3257-1FFR
	3P+N+E	346-415		6	M32	2	513.3257-2DFR	513.3257-2FFR

- Household socket protected by 10A fuse (time-delay).
- Open threaded cable entry on top side.

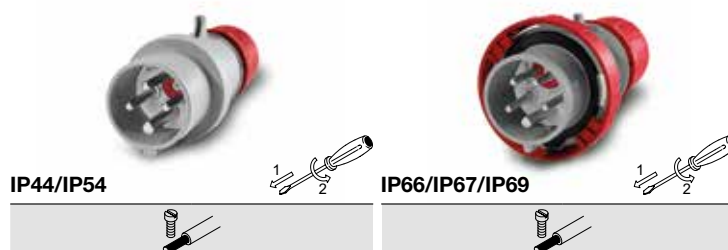
- Cable sleeve provided.
- Available in further domestic sockets standard (contact technical service).



= Screw terminals

PLUGS WITH PHASE INVERTER

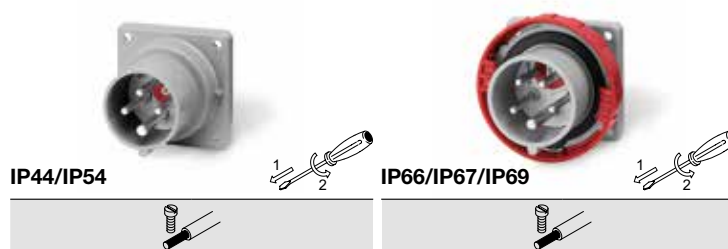
OPTIMA-REVERSE Series



Poles	Hz.	Volt	Colour	h.	16A	32A	16A	32A
					cable gland	cable gland	cable gland	cable gland
3P+E	50/60	380-415		6	213.1636RV	213.3236RV	218.1636RV	218.3236RV
3P+N+E	50/60	346-415		6	213.1637RV	213.3237RV	218.1637RV	218.3237RV

FLUSH MOUNTING APPLIANCE INLETS WITH PHASE INVERTER

OPTIMA-REVERSE Series



Poles	Hz.	Volt	Colour	h.	16A	32A	16A	32A
					75x75	75x75	75x75	75x75
3P+E	50/60	380-415		6	243.1696RV	243.3296RV	248.1696RV	248.3296RV
3P+N+E	50/60	346-415		6	243.1697RV	243.3297RV	248.1697RV	248.3297RV

SURFACE MOUNTING APPLIANCE INLET WITH PHASE INVERTER

OPTIMA-REVERSE Series



Poles	Hz.	Volt	Colour	h.	16A	32A	16A	32A
					M25	M32	M25	M32
3P+E	50/60	380-415		6	240.1696RV	240.3296RV	245.1696RV	245.3296RV
3P+N+E	50/60	346-415		6	240.1697RV	240.3297RV	245.1697RV	245.3297RV

- Open threaded cable entry on top side.

- IP44/IP54: cable sleeve provided.

Industrial plugs and sockets

■ PLUGS - HEAVY DUTY

OPTIMA-HD Series



IP66/IP67/IP69



Poles	Hz.	Volt	Colour	h.	16A cable gland	32A cable gland	63A cable gland	125A cable gland
2P+E	50/60	200-250		6	218.1633.KX	218.3233.KX	218.6333.KX	218.12533.KX
	50/60	380-415		6	218.1636.KX	218.3236.KX	218.6336.KX	218.12536.KX
3P+E	50...60	380...440		3		218.32364.KX		
	60	440-460		11			218.63365.KX	218.125365.KX
	60	208-250		9	218.1634.KX			
3P+N+E	50/60	346-415		6	218.1637.KX	218.3237.KX	218.6337.KX	218.12537.KX
	50/60	208-250		9	218.1635.KX	218.3235.KX	218.6335.KX	218.12535.KX

- Other earth clock positions (h) available on request.
- Available special versions with twisted cable entries.

■ CONNECTORS - HEAVY DUTY

OPTIMA-HD Series



IP66/IP67/IP69



Poles	Hz.	Volt	Colour	h.	16A cable gland	32A cable gland	63A cable gland	125A cable gland
2P+E	50/60	200-250		6	318.1643.KX	318.3243.KX	318.6343.KX	318.12543.KX
3P+E	50/60	380-415		6	318.1646.KX	318.3246.KX	318.6346.KX	318.12546.KX
	50...60	380...440		3		318.32464.KX		
3P+N+E	50/60	346-415		6	318.1647.KX	318.3247.KX	318.6347.KX	318.12547.KX

- Other earth clock positions (h) available on request.
- Available special versions with twisted cable entries.

= Screw terminals

ACCESSORIES

		
Description		
Plug caps 16/20A - 2P+E	570.90163	
Plug caps 16/20A - 3P+E	570.90164	
Plug caps 16/20A - 3P+N+E	570.90165	
Plug caps 32/30A - 2P+E & 3P+E	570.90324	
Plug caps 32/30A - 3P+N+E	570.90325	
Plug caps 63/60A - all polarity	570.9063	
Plug caps 125/100A - all polarity	570.9125	
Loop in/out terminal block - 5 poles 6mm ²	654.0382	
Threaded cable sleeve IP55	M20	805.5020
	M25	805.5025
	M32	805.5032
Microswitch kit 16/32 NO	654.0391 (▲)	
Microswitch kit 16/32 NC	654.0392 (▲)	
Microswitch kit 63/125 NO	654.0393 (▲)	
Microswitch kit 63/125 NC	654.0394 (▲)	
Cover for surface mounting appliance inlet 16A 2P+E / 3P+E	570.9001	
Cover for surface mounting appliance inlet 16A 3P+N+E / 32A all poles	570.9002	

(▲) For plug inserted detection. Suited for flush mounting angled outlet versions only.

EMPTY SURFACE MOUNTING BOXES - IP67

								
Description	Cable Inlet	Suitable for sockets	Flange (mm)	Cable Inlet				
Straight box	Blank side with drilling point (cable sleeve)	16A	70x87	-	570.0016			
		32A	84x106	-	570.0032			
Angled box	Blank side with drilling point (cable sleeve)	16A	70x87	M20/M25	570.0116			
		32A	84x106	M32	570.0132			
	Threaded entry (cap/cable sleeve)	16A	70x87	M20x1,5	570.0116.20			
		16A	70x87	M25x1,5	570.0116.25			
		32A	84x106	M32x1,5	570.0132.32			
		63A	100x110	M40x1,5	570.M0163 (●)			
		125A	114x114	M63x1,5	570.M0125 (●)			
		Flange adaptor 75x75mm on 84x106mm				654.0108		

- Supplied with socket fastening screws.

(●) Cable gland provided.

Industrial plugs and sockets <50V

PLUGS AND CONNECTORS <50V



IP44



IP66/IP67

Poles	Hz.	Volt	Colour	h.	IP44		IP66/IP67	
					16A cable sleeve	32A cable sleeve	16A cable gland	32A cable gland
2P	50/60	20-25		-	230.1600	230.3200	235.1600	235.3200
	50/60	40-50		12	230.1601	230.3201	235.1601	235.3201
	100-200	20-25 40-50		4	230.16010	230.32010	235.16010	235.32010
	300	20-25 40-50		2	230.16012	230.32012	235.16012	235.32012
	400	20-25 40-50		3	230.16014	230.32014	235.16014	235.32014
	>400-500	20-25 40-50		11	230.16015	230.32015	235.16015	235.32015
	c.c.	20-25 40-50		10	230.1602	230.3202	235.1602	235.3202
3P	50/60	20-25		-	230.1604	230.3204	235.1604	235.3204
	50/60	40-50		12	230.1603	230.3203	235.1603	235.3203
	100-200	20-25 40-50		4	230.16030	230.32030	235.16030	235.32030
	300	20-25 40-50		2	230.16032	230.32032	235.16032	235.32032
	400	20-25 40-50		3	230.16034	230.32034	235.16034	235.32034
	>400-500	20-25 40-50		11	230.16035	230.32035	235.16035	235.32035

= Screw terminals



IP44



IP66/IP67

			
16A cable sleeve	32A cable sleeve	16A cable gland	32A cable gland
330.1605	330.3205	335.1605	335.3205
330.1606	330.3206	335.1606	335.3206
330.16060	330.32060	335.16060	335.32060
330.16062	330.32062	335.16062	335.32062
330.16064	330.32064	335.16064	335.32064
330.16065	330.32065	335.16065	335.32065
330.1607	330.3207	335.1607	335.3207
330.1609	330.3209	335.1609	335.3209
330.1608	330.3208	335.1608	335.3208
330.16080	330.32080	335.16080	335.32080
330.16082	330.32082	335.16082	335.32082
330.16084	330.32084	335.16084	335.32084
330.16085	330.32085	335.16085	335.32085

Industrial plugs and sockets <50V

■ FLUSH MOUNTING SOCKET OUTLETS <50V

					 IP44 ANGLED OUTLET STANDARD FLANGE 		 IP66/IP67 ANGLED OUTLET STANDARD FLANGE 	
Poles	Hz.	Volt	Colour	h.	16A 70x87	32A 70x87	16A 70x87	32A 70x87
2P	50/60	20-25		-	430.1615	430.3215	435.1615	435.3215
	50/60	40-50		12	430.1616	430.3216	435.1616	435.3216
	100-200	20-25 40-50		4	430.16160	430.32160	435.16160	435.32160
	300	20-25 40-50		2	430.16162	430.32162	435.16162	435.32162
	400	20-25 40-50		3	430.16164	430.32164	435.16164	435.32164
	>400-500	20-25 40-50		11	430.16165	430.32165	435.16165	435.32165
	c.c.	20-25 40-50		10	430.1617	430.3217	435.1617	435.3217
3P	50/60	20-25		-	430.1619	430.3219	435.1619	435.3219
	50/60	40-50		12	430.1618	430.3218	435.1618	435.3218
	100-200	20-25 40-50		4	430.16180	430.32180	435.16180	435.32180
	300	20-25 40-50		2	430.16182	430.32182	435.16182	435.32182
	400	20-25 40-50		3	430.16184	430.32184	435.16184	435.32184
	>400-500	20-25 40-50		11	430.16185	430.32185	435.16185	435.32185

 = Screw terminals



IP44

STRAIGHT OUTLET
REDUCED FLANGE**16A**

55x55

32A

55x55



IP66/IP67

STRAIGHT OUTLET
REDUCED FLANGE**16A**

55x55

32A

55x55

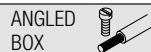
430.1615/R	430.3215/R	435.1615/R	435.3215/R
430.1616/R	430.3216/R	435.1616/R	435.3216/R
430.16160/R	430.32160/R	435.16160/R	435.32160/R
430.16162/R	430.32162/R	435.16162/R	435.32162/R
430.16164/R	430.32164/R	435.16164/R	435.32164/R
430.16165/R	430.32165/R	435.16165/R	435.32165/R
430.1617/R	430.3217/R	435.1617/R	435.3217/R
430.1619/R	430.3219/R	435.1619/R	435.3219/R
430.1618/R	430.3218/R	435.1618/R	435.3218/R
430.16180/R	430.32180/R	435.16180/R	435.32180/R
430.16182/R	430.32182/R	435.16182/R	435.32182/R
430.16184/R	430.32184/R	435.16184/R	435.32184/R
430.16185/R	430.32185/R	435.16185/R	435.32185/R

Industrial plugs and sockets <50V

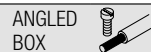
■ SURFACE MOUNTING SOCKET OUTLETS <50V



IP44



IP66/IP67



Poles	Hz.	Volt	Colour	h.	IP44		IP66/IP67	
					16A M20	32A M32	16A M20	32A M32
2P	50/60	20-25		-	530.01610	530.03210	535.01610	535.03210
	50/60	40-50		12	530.01611	530.03211	535.01611	535.03211
	100-200	20-25 40-50		4	530.016110	530.032110	535.016110	535.032110
	300	20-25 40-50		2	530.016112	530.032112	535.016112	535.032112
	400	20-25 40-50		3	530.016114	530.032114	535.016114	535.032114
	>400-500	20-25 40-50		11	530.016115	530.032115	535.016115	535.032115
	c.c.	20-25 40-50		10	530.01612	530.03212	535.01612	535.03212
3P	50/60	20-25		-	530.01614	530.03214	535.01614	535.03214
	50/60	40-50		12	530.01613	530.03213	535.01613	535.03213
	100-200	20-25 40-50		4	530.016130	530.032130	535.016130	535.032130
	300	20-25 40-50		2	530.016132	530.032132	535.016132	535.032132
	400	20-25 40-50		3	530.016134	530.032134	535.016134	535.032134
	>400-500	20-25 40-50		11	530.016135	530.032135	535.016135	535.032135

- STRAIGHT BOX: blank side and drilling point mark.
- ANGLED BOX: open threaded cable entry on top side.
- IP44: cable sleeve provided.



= Screw terminals



IP44

STRAIGHT
BOX



16A

Drilling point mark

32A

Drilling point mark

530.1610	530.3210	535.1610	535.3210
530.1611	530.3211	535.1611	535.3211
530.16110	530.32110	535.16110	535.32110
530.16112	530.32112	535.16112	535.32112
530.16114	530.32114	535.16114	535.32114
530.16115	530.32115	535.16115	535.32115
530.1612	530.3212	535.1612	535.3212
530.1614	530.3214	535.1614	535.3214
530.1613	530.3213	535.1613	535.3213
530.16130	530.32130	535.16130	535.32130
530.16132	530.32132	535.16132	535.32132
530.16134	530.32134	535.16134	535.32134
530.16135	530.32135	535.16135	535.32135



IP66/IP67

STRAIGHT
BOX



16A

Drilling point mark

32A

Drilling point mark

Plugs and sockets for special applications

PLUGS

OPTIMA-SEVEN Series

						IP44		IP66/IP67	
									
Poles	Hz.	Volt	Colour	h.		16A	32A	16A	32A
						cable gland	cable gland	cable gland	cable gland
6P+E	50/60	380-415		6		213.1637-7	213.3237-7	218.1637-7	218.3237-7

FLUSH MOUNTING APPLIANCE INLETS

OPTIMA-SEVEN Series

						IP44		IP66/IP67	
									
Poles	Hz.	Volt	Colour	h.		16A	32A	16A	32A
						75x75	75x75	75x75	75x75
6P+E	50/60	380-415		6		243.1697-7	243.3297-7	248.1697-7	248.3297-7

SURFACE MOUNTING APPLIANCE INLETS

OPTIMA-SEVEN Series

						IP44		IP66/IP67	
									
Poles	Hz.	Volt	Colour	h.		16A	32A	16A	32A
						M25	M25	M25	M25
6P+E	50/60	380-415		6		240.1697-7	240.3297-7	245.1697-7	245.3297-7

- Open threaded cable entry on top side.

 = Screw terminals

CONNECTORS

OPTIMA-SEVEN Series

						IP44		IP66/IP67	
									
Poles	Hz.	Volt	Colour	h.		16A cable gland	32A cable gland	16A cable gland	32A cable gland
6P+E	50/60	380-415		6		313.1647-7	313.3247-7	318.1647-7	318.3247-7

FLUSH MOUNTING SOCKET OUTLETS

OPTIMA-SEVEN Series

						IP44		IP66/IP67	
									
Poles	Hz.	Volt	Colour	h.		16A 75x75	32A 75x75	16A 75x75	32A 75x75
6P+E	50/60	380-415		6		413.1667-7	413.3267-7	418.1667-7	418.3267-7

SURFACE MOUNTING SOCKET OUTLETS

OPTIMA-SEVEN Series

						IP44		IP66/IP67	
									
Poles	Hz.	Volt	Colour	h.		16A M25	32A M25	16A M25	32A M25
6P+E	50/60	380-415		6		512.1657-7	512.3257-7	517.1657-7	517.3257-7

- Open threaded cable entry on top side.

Plugs and sockets for special applications

■ PLUGS

OPTIMA-MIL Series



IP66/IP67/IP69



Poles	Hz.	Volt	Colour	h.	16A cable gland	32A cable gland	63A cable gland	125A cable gland
2P+E	50/60	200-250		6	218.1633.MIL	218.3233.MIL	218.6333.MIL	218.12533.MIL
3P+E	50/60	380-415		6	218.1636.MIL	218.3236.MIL	218.6336.MIL	218.12536.MIL
3P+N+E	50/60	346-415		6	218.1637.MIL	218.3237.MIL	218.6337.MIL	218.12537.MIL

■ FLUSH MOUNTING APPLIANCE INLET

OPTIMA-MIL Series



IP66/IP67/IP69



Poles	Hz.	Volt	Colour	h.	16A 75x75	32A 75x75	63A 100x110	125A 114x114
2P+E	50/60	200-250		6	248.1693.MIL	248.3293.MIL	248.6393.MIL	248.12593.MIL
3P+E	50/60	380-415		6	248.1696.MIL	248.3296.MIL	248.6396.MIL	248.12596.MIL
3P+N+E	50/60	346-415		6	248.1697.MIL	248.3297.MIL	248.6397.MIL	248.12597.MIL

■ CONNECTORS

OPTIMA-MIL Series



IP66/IP67/IP69



Poles	Hz.	Volt	Colour	h.	16A cable gland	32A cable gland	63A cable gland	125A cable gland
2P+E	50/60	200-250		6	318.1643.MIL	318.3243.MIL	318.6343.MIL	318.12543.MIL
3P+E	50/60	380-415		6	318.1646.MIL	318.3246.MIL	318.6346.MIL	318.12546.MIL
3P+N+E	50/60	346-415		6	318.1647.MIL	318.3247.MIL	318.6347.MIL	318.12547.MIL

= Screw terminals

■ FLUSH MOUNTING SOCKET OUTLET

OPTIMA-MIL Series



IP66/IP67/IP69

Poles	Hz.	Volt	Colour	h.	16A	32A	63A	125A
					75X75	75x75	100X110	114x114
2P+E	50/60	200-250		6	428.1663.MIL	428.3263.MIL	428.6363.MIL	428.12563.MIL
3P+E	50/60	380-415		6	428.1666.MIL	428.3266.MIL	428.6366.MIL	428.12566.MIL
3P+N+E	50/60	346-415		6	428.1667.MIL	428.3267.MIL	428.6367.MIL	428.12567.MIL

■ PLUG CAPS

OPTIMA-MIL Series



Description	
Plug caps 16/20A - 2P+E	570.90163.MIL
Plug caps 16/20A - 3P+E	570.90164.MIL
Plug caps 16/20A - 3P+N+E	570.90165.MIL
Plug caps 32/30A - 2P+E & 3P+E	570.90324.MIL
Plug caps 32/30A - 3P+N+E	570.90325.MIL
Plug caps 63/60A - all polarity	570.9063.MIL
Plug caps 125/100A - all polarity	570.9125.MIL



**INDUSTRIAL
PLUGS AND
SOCKETS**
technical sheets

General technical informations

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.

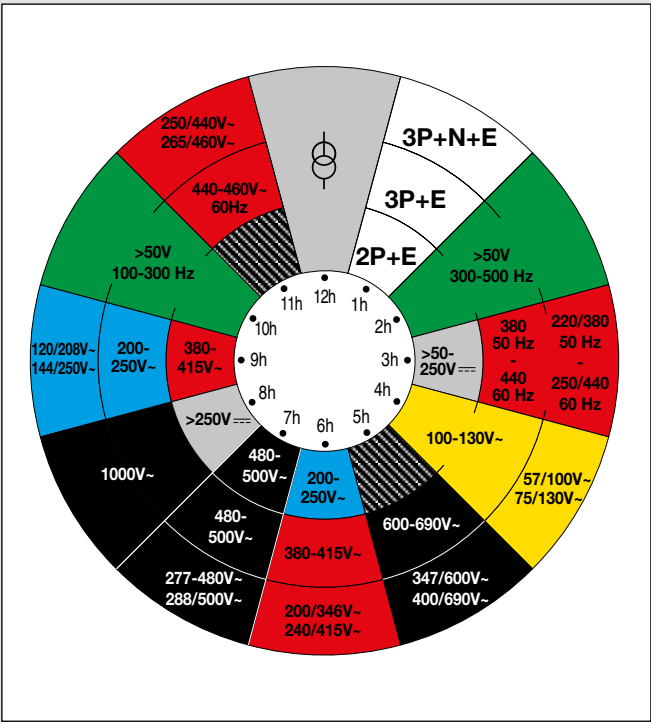
Clock reference:

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

Examples:

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

Clock position - IEC ratings - Series I



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

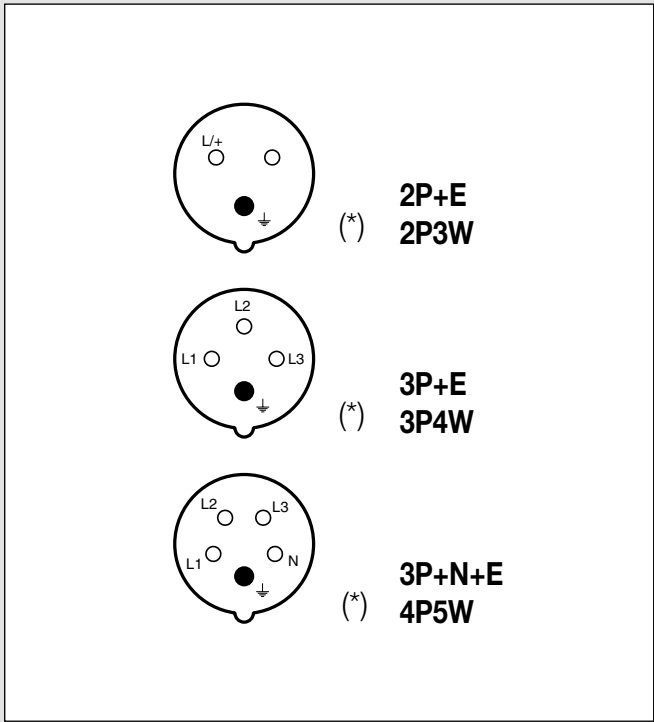
COLOUR CODE

The operating voltages are identified by conventional colours as shown in the table:

Rated operating voltage V	Colour (1)
from 20 to 25	Violet
from 40 to 50	White
from 100 to 130	Yellow
from 200 to 250	Blue
from 380 to 480	Red
from 500 to 1000	Black

(1) Combinations of green with the colour of the rated operating voltage can be used to identify frequencies between 60 Hz and 500 Hz inclusive.

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 and 60	100÷130	4	4	
		60	277	5	5	
	2P+E I and II Series	50 and 60	100÷130	4	4	
			200÷250	6	6	
			380÷415	9	9	
			480÷500	7	7	
			suppl. by isol. transf.	12	12	- (5)
		100÷300	> 50	10	10	 (4)
		>300÷500	> 50	2	2	 (4)
		d.c.	>50÷250	3	3	- (5)
			> 250	8	8	- (5)
4 Contact 3P4W	2P+N+E II Series	50 and 60	125/250	12	12	 
		50 and 60	100÷130	4	4	
	200÷250		9	9		
	380÷415		6	6		
	60	440÷460 (4)	11	11		
	50 and 60	480÷500	7	7		
		600÷690	5	5		
		suppl. by isol. transf.	12	12		
	50 60	380 440 (3)	3	3		
	50 and 60	1000	8	8		
	100÷300	> 50	10	-	 (4)	
	>300÷500	> 50	2	-	 (4)	
	5 Contact 4P5W	3P+N+E I and II Series	50 and 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	
347/600÷400/690				5	5	
60			250/440÷265/460 (4)	11	11	
50 60			220/380 250/440 (3)	3	3	
50 and 60			1000	8	8	
50 and 60			suppl. by isol. transf.	12	12	
100÷300			> 50	10	10	 (4)
>300÷500			> 50	2	2	 (4)
ALL TYPES			All types of voltage and/or frequency not within these standardised configurations		1	1

- (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 60309-2 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.

NOTE

- SCAME plugs and sockets for specific uses other than 4 - 6 - 9 h are available only on demand and are therefore not kept in stock. Minimum order quantities: 50 pieces.

General technical informations

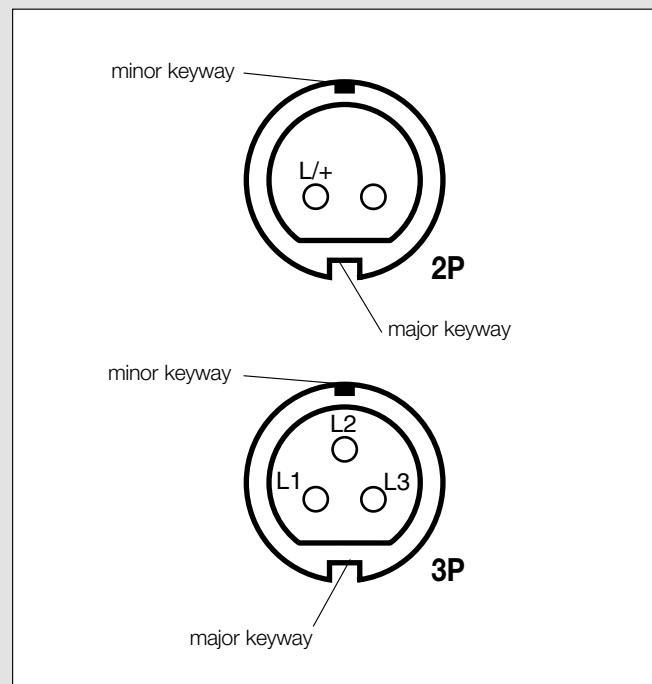
■ SYNOPSIS TABLE OF STANDARD INDUSTRIAL PLUGS AND SOCKETS TO IEC 60309-2

Rated operating voltage > 50 V (LV)

Poles	Frequency Hz	Rated operating voltage V	Minor keyway (1) clock face position (h) 16A and 32A without reference	Colour code
2P	50 and 60	20÷25	without ref.	
	50 and 60	40÷50	12	
	100÷200	20÷25 and 40÷50	4	
	300		2	
	400		3	
	>400÷500		11	
	c.c.		10	
3P	50 and 60	20÷25	without ref.	
	50 and 60	40÷50	12	
	100÷200	20÷25 and 40÷50	4	
	300		2	
	400		3	
	>400÷500		11	
	c.c.	25	8	

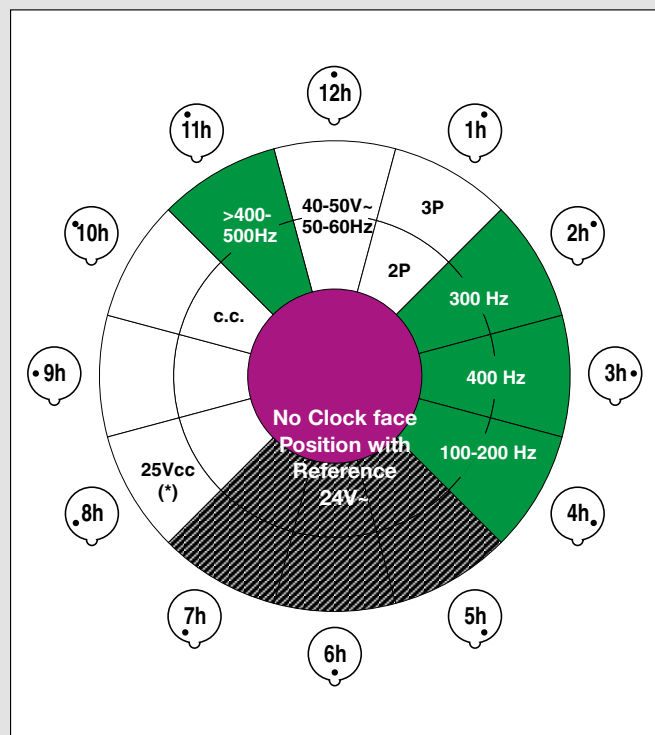
- (1) 1, 8 and 9 h positions are reserved for future standards; 5, 6 and 7 h positions cannot be used for reasons connected with the design.
 (2) Combinations of green with the colour of the rated operating voltage can be used to identify frequencies between 60 Hz and 500 Hz inclusive.
 (3) Portable electric incubators - use at 12 Vd.c. or 24 Vd.c. on ambulances or helicopters.

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).

(*)

Portable electric incubators - use at 12 Vd.c. or 24 Vd.c. on ambulances or helicopters.

■ APPLICATIONS OF INDUSTRIAL PLUGS AND SOCKETS

	IP44	IP67
Agriculture	Mobile or portable equipment or appliances used or stored on sheltered premises.	Outdoor installation of pumping, ventilation, drying equipment.
Chemical industry	Indoors on premises for storage and maintenance purposes where connections are not exposed to the risk of immersion or chemicals.	On premises without risk of explosions but where the connections are exposed to chemicals and subject to possible immersion.
Construction sites and shipyards	On covered construction sites sheltered against weathering but exposed to splashing with water.	On outdoor construction sites where the connections are left on damp ground exposed to freezing, dust and weathering.
Sports complexes and other places of public entertainment, TV and film studios	On sheltered premises protected against the weather, though exposed to splashing, without high connected loads.	Outdoor connections exposed to rain, snow, mud, freezing and other critical weather conditions. Where rated safety is required. Where high voltage for lighting installations, T.V. and audio are foreseen.
Food industry	In sheltered locations, on indoor premises used for storage and maintenance.	In locations subject to washing by hosing down and where connections are subject to heavy duty.
Heavy industry	In sheltered warehouses, maintenance workshops, assembly and moulding areas.	In rolling mills, foundries, blast furnaces, etc., where the connections are exposed to dust, metallic shavings, coolants and are subject to vibrations and impact.
Light industry	Locations without high humidity or ambient pollution serving for assembly, moulding, maintenance and storage	On premises subject to cleaning by means of chemical solvents. Also where heavy loads require high safety in connections.
Installations for IT centres	For electrical connections executed above floor level.	For electrical connections under raised floors with risk of immersion. Where heavy loads require high safety in connections.
Ports	In sheltered locations such as docks, repair shops, offices, etc.	Quays, docks, piers, etc. where there is risk of high waves and partial flooding.
Airports	In sheltered locations, hangars, repair shops, warehouses.	Outdoors for connection between mobile or portable appliances and aircraft.
Water treatment plants	Indoor use in repair shops, etc.	In all locations with risk of flooding and for outdoor use with pumps, aeration and ventilation systems.

OPTIMA Series

INDUSTRIAL PLUGS AND SOCKETS



OPTIMA Series is a complete range of industrial plugs and socket outlets from 16 up to 125A. Robust and safe industrial plugs, thanks to the use of high performance technopolymers bodies and to the external cable gland with cable clamp function.

VERSIONS

	Plugs
	Connectors
	Appliance inlets
	Flush mounting socket outlets
	Surface mounting socket outlets

REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket-outlets and couplers for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories.

QUALITY MARKS



TECHNICAL CHARACTERISTICS

Rated current:	16A-32A-63A-125A
Rated voltage:	50÷690V~
Frequency:	d.c - 50÷500Hz
Insulating voltage:	500/690V~
Protection degree:	IP44/IP54 - IP66/IP67/IP69
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max operating ambient temperature:	60°C
Glow Wire test:	650°C/850°C
Material:	Thermoplastic
IK degree at 20°C:	IK08
Halogen free:	Yes
Terminals:	Screw (16A-32A) Insulation perforating (16A mobile) Spring (32A mobile) Spring (16A-32A flush/surface mounting) Mantle (63A-125A)
Safe-in device:	16A
Snap-on device:	16A-32A
Nickel-plated pins:	16A-32A-63A-125A

■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Resistant	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Limited Resistance	Limited Resistance

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com

■ WIRING AND INSTALLATION

Wiring capacity of the terminals (mm²)

Rated voltage	Rated current (A)	Plugs, connectors and appliance inlets		Socket outlets	
		Min	Max	Min	Max
Over 50V	16A	1	2,5	1,5	4
	32A	2,5	6	2,5	10
	63A	6	16	6	25
	125A	16	50	25	70

Max. cable size accepted by the cable clamp:

Rated current (A)	Outside Ø mm	
	Min	Max
16A	8	15
32A	11,5	21
63A	17	31
125A	26	48

APPLICATION EXAMPLE



OPTIMA Series



On the 16A and 32A "Snap-on" device with stainless steel spring to guarantee frequent opening/closing (possibility to inspect the terminals).



External cable stay with tulip clamping having IP66/IP67/IP69 cable gland functions (the device is used on both IP44/IP54 and IP66/IP67/IP69 products).



16A plugs and connectors with insulation piercing terminals which allow wiring without stripping the conductor.



Insulation piercing terminal made in highly elastic phosphor bronze.



Internal profile of the handle which avoids the accidental opening of the contact.



Socket/plug module with screw terminals (16A - 32A - 63A - 125A).

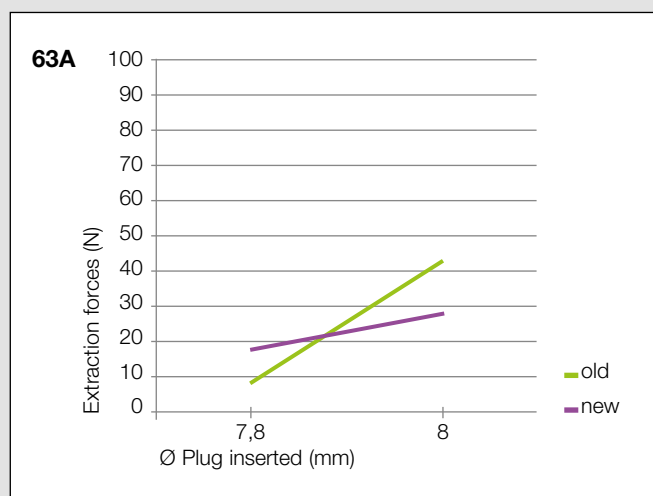


32A plugs and connectors with screwless spring terminal. Requires cable stripping, but not the tightening of the screws.

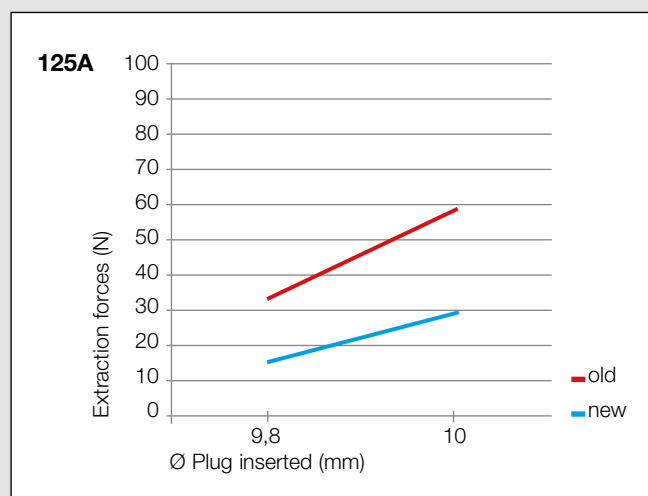


16-32A plugs, flush mounting sockets and surface mounting sockets with spring terminals.

■ EXTRACTION FORCES



The reduction in plug-socket insertion and extraction forces was obtained thanks to the study of a new compression spring of the socket contact. As illustrated in this graph, the reduction in the force was an average of 30% compared to the previous versions, in any event guaranteeing low contact resistance.



The materials of the pin and contact tube have different surface hardness so as to eliminate, during insertion and extraction operations, the layer of oxide that forms on the surface, thus improving contact smoothness and resistance while keeping them unchanged over time.



The axial incisions and the new compression spring of the socket contact with elasticity coefficient such as to keep insertion and extraction forces constant.



The nickel-plating of the socket contact combined with the special drawing and polishing process increase smoothness and ensure a higher number of contact points.



Thanks to their characteristic geometry, the new mantle terminals are suited to all types of conductors and terminals. They increase cable accessibility and contact surface, thus allowing higher tightening torques to benefit contact resistance and seal.



All gaskets are moulded directly on the cover and at the coupling point with the grip. Grip closing is by means of metric screws and metal inserts, making tightening easier and allowing for unlimited inspections and closings.



Contact holder in special technopolymer with fibreglass, featuring high heat resistance. Pilot contacts available as standard equipment on both plugs and sockets.



Entirely made with halogen-free materials, with excellent mechanical resistance to impacts, chemical substances and UV rays.

Increased safety “SAFE-IN”



■ THE “SAFE-IN” SAFETY DEVICE

The “SAFE-IN” safety device assembled on the 16A industrial sockets is the most innovative element of the new OPTIMA Series.

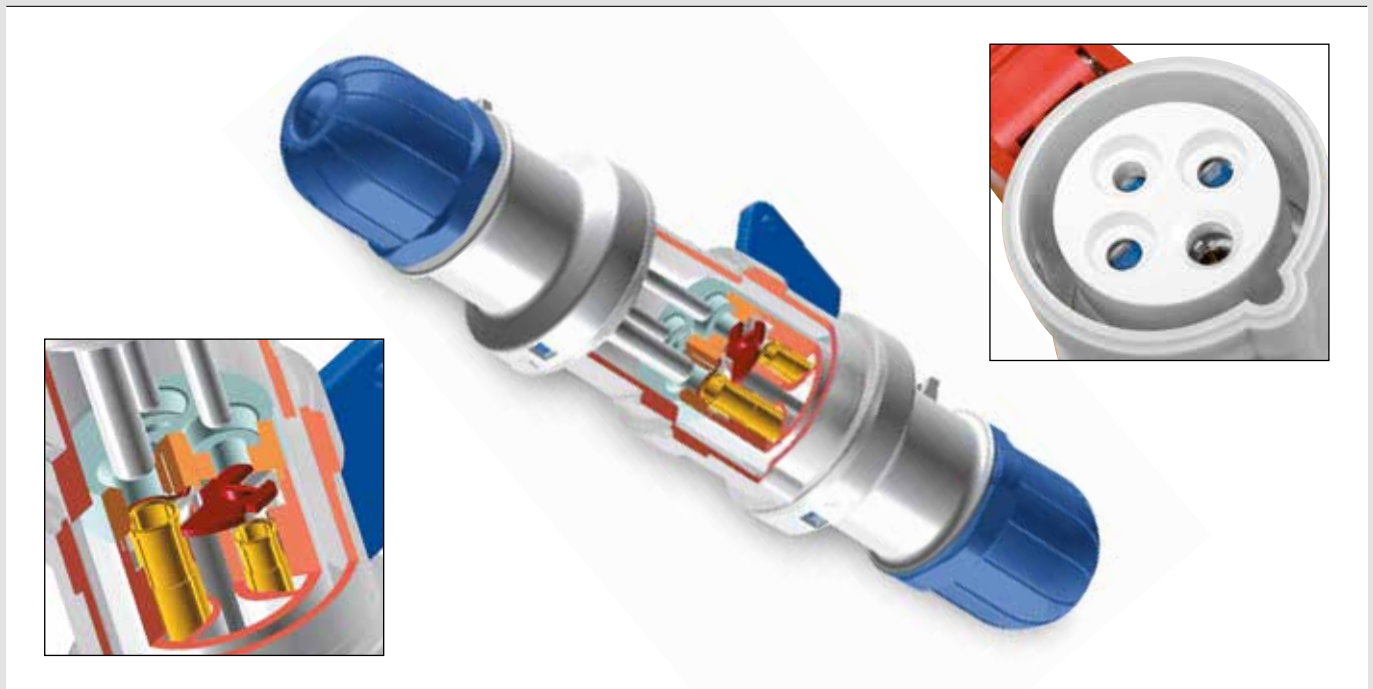
The “SAFE-IN” device works like the protection installed on household sockets, i.e., by means of an appropriate shutter, it closes the input of the socket contact tubes and prevents accidental and voluntary contact of live parts of the socket with slim objects, such as screwdrivers or wires.

This protection offers an additional safety guarantee, in addition to that already provided by the spring-loaded cover assembled on the mobile sockets.

■ SAFETY LEVEL OF THE OPTIMA SERIES SOCKETS

The OPTIMA Series sockets with the “SAFE-IN” safety device guarantee a higher level of safety in comparison with ordinary industrial sockets, especially in environments where there may be children present or people who have not been trained about electrical dangers (public areas, amusement parks, campgrounds, open markets, etc.).

Dangerous situations, such as the important examples illustrated in the figure to the side, can be resolved thanks to the new OPTIMA Series sockets equipped with the “SAFE-IN” safety device.



Connector tube protective shutter for greater safety against direct contacts. (The SAFE-IN safety device).

APPLICATION EXAMPLES



POTENTIALLY DANGEROUS SITUATIONS



PLUGS AND CONNECTORS FOR DEMANDING APPLICATIONS



OPTIMA-HD is a range of industrial plugs from 16 to 125A characterized by the use of specific technopolymers that give maximum resistance to impacts (IK10), to heat and fire (GW 960 ° C according to EN 60695-2-1), to atmospheric agents and UV rays. The OPTIMA-HD electric plugs are therefore suitable for use in harsh environments such as iron and steel industries, ports and mines.

The efficiency of the contacts over time is also guaranteed by the use of nickel-plated brass pins, resistant to oxidation and aging.

Fast to wire thanks to the opening of the body by means of a snap-on steel spring mechanism and screw terminals.

VERSIONS



Plugs and connectors

REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.

Part 1: general requirements.

EN 60309-2

Plugs, socket-outlets and couplers for industrial purposes.

Part 2: dimensional interchangeability requirements for pin and contact-tube accessories.

TECHNICAL CHARACTERISTICS

Rated current:	16A-32A-63A-125A
Rated voltage:	50÷690V~
Frequency:	50÷60Hz
Insulating voltage:	500/690V~
Protection degree:	IP66/IP67/IP69
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max operating ambient temperature:	-40°C +60°C
Glow wire test:	960°C
Self extinguishing UL94:	5VA
Material:	High performance thermoplastic
IK degree:	IK10
Terminals:	Screw
Snap-on:	16A-32A
Nickel plated pins:	16A-32A-63A-125A

BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Resistant	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Resistant	Limited Resistance

Resistance values to chemical agents have to be considered indicative.

For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com

OPTIMA-BASE-TOP-COMBI Series

INDUSTRIAL SURFACE MOUNTING SOCKET OUTLETS AND APPLIANCE INLET



Complete range of industrial electrical socket outlets with switch for surface mounting fixed installation, able to satisfy any need for electrical connection in the industrial field.

Robust and versatile, they boast a high degree of IP protection, guaranteeing maximum installation flexibility and total safety for the user, even in the COMBI versions with a domestic standard socket outlet for powering small single-phase devices.

VERSIONS

	BASE version
	TOP version
	COMBI version

REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket-outlets and couplers for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories.

QUALITY MARKS



TECHNICAL CHARACTERISTICS

Rated current:	16A-32A-63A-125A
Rated voltage:	50÷690V~
Frequency:	d.c - 50÷500Hz
Insulating voltage:	500/690V~
Protection degree:	Base: IP44 Top: IP44 - IP66/IP67/IP69 Combi: IP44/IP54 closed cover
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max operating ambient temperature:	60°C
Glow Wire test:	650°C (housing) 850°C (contact carrier)
Material:	Thermoplastic
IK degree at 20°C:	IK08
Halogen free:	Yes
Terminals:	Screw (16A-32A) Spring (16A-32A) Mantle (63A-125A)
Safe-in device:	16A
Fuses:	Max 10A - 5x20mm
(COMBI version)	H: high power cutoff (1500A) T: delayed action

BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Resistant	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Limited Resistance	Limited Resistance

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com



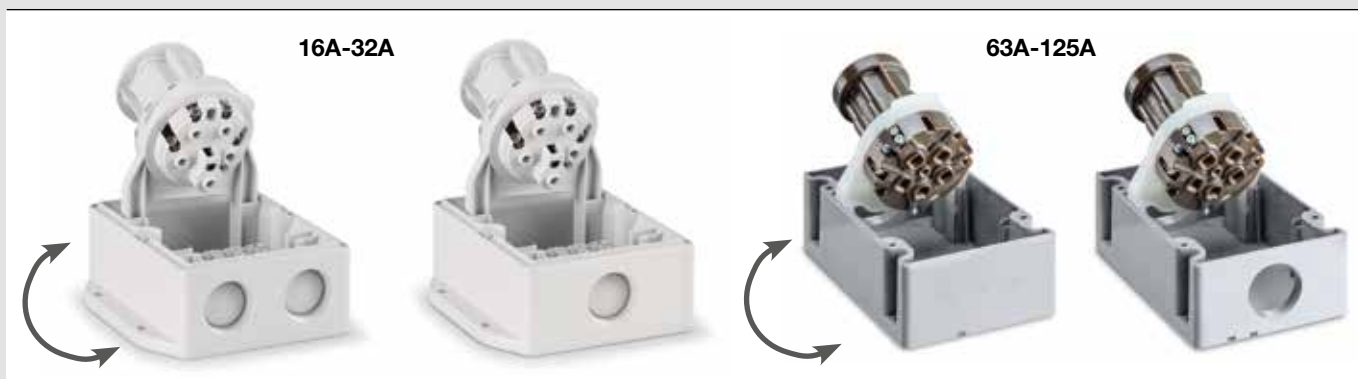
Fastening to exterior wall.



TOP version: blind threaded knockout hole inlets, for quick fastening of the cable entry device. IP44 versions supplied with cable sleeve.



16-32A Surface mounting sockets with spring terminals.



TOP version: reversible base and removable socket for easy wiring and cable entry flexibility.



TOP IP66/IP67/IP69 version: integrated, one-piece gasket, fastening screws outside the gasket.



TOP version: loop in - loop out terminal board accessory.



TOP version: versions with SAFE-IN (16A) safety device available.



COMBI version: combined versions, industrial and household socket.



BASE version: simplified wiring. Socket fixed to the base, open terminals orientated in the same direction and easily accessible.

OPTIMA-REVERSE Series

PLUGS WITH PHASE INVERTER



OPTIMA-REVERSE is a range of 16 and 32A industrial plugs, which allow the rapid reversal of two phases to restore the correct direction of rotation for three-phase motors of mobile and fixed loads. The inversion of the phases is done simply by pushing and turning by a screwdriver the support where the two phase pins are mounted. Robust and safe industrial plugs, thanks to the use of high performance technopolymer bodies and to the external cable gland with cable clamp function.

VERSIONS

	Plugs
	Flush mounting appliance inlets
	Surface mounting appliance inlet

PHASE INVERTER



Fixed and movable plugs which rapidly invert two phases in order to return to the correct direction of rotation of three-phase motors for movable and fixed applications.

REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket-outlets and couplers for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories.

QUALITY MARKS



TECHNICAL CHARACTERISTICS

Rated current:	16A-32A
Rated voltage:	346÷415V~
Frequency:	50÷60Hz
Insulating voltage:	690V~
Protection degree:	IP44/IP54 - IP66/IP67/IP69
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max operating ambient temperature:	60°C
Glow wire test:	650°C (housing) 850°C (contact carrier)
Material:	Thermoplastic
IK degree at 20°C:	IK08
Halogen free:	Yes
Terminals:	Screw
Snap-on device:	16A-32A
Polarity:	3P+E / 3P+N+E
Connectable cables:	Flexible class 5 or 6

■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Resistant	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Limited Resistance	Limited Resistance

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com

■ WIRING AND INSTALLATION

Wiring capacity of the terminals (mm²)

Rated voltage	Rated current (A)	Plugs Appliance inlets	
		Min	Max
Over 50V	16A	1	2,5
	32A	2,5	6

Max. cable size accepted by the cable clamp:

Rated current (A)	Outside Ø mm	
	Min	Max
16A	8	15
32A	11,5	21

OPERATING PRINCIPLE OF THE PHASE INVERTER



The phases are inverted by simply pushing and turning the phase pin support with a screwdriver.

OPTIMA-TOP Series

■ SURFACE MOUNTING SWITCHED SOCKETS O/I



OPTIMA-TOP SWITCH is a range of 16 and 32A surface mounting industrial socket outlets with integrated switch without interlock. Robust and secure industrial sockets thanks to the use of high performance technopolymer enclosures. Practical thanks to the reversible base and to the extractable socket to facilitate wiring operations. The unlosable co-molded gasket guarantees a constant seal of the IP protection degree. The electrical sockets of the OPTIMA-TOP SWITCH Series do not neglect the environmental aspect, being produced with halogen-free materials.

■ VERSIONS



TOP version O/I

■ DOUBLE ENTRIES M25 OR M32 (TOP/BOTTOM) WITH REVERSIBLE BASE



■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Resistant	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Limited Resistance	Limited Resistance

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

■ REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket-outlets and couplers for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories.

EN 60309-4

Plugs, socket-outlets and couplers for industrial purposes.
Part 4: Switched socket-outlets and connectors with or without interlock.

■ TECHNICAL CHARACTERISTICS

Rated current:	16A-32A
Rated voltage:	50÷690V~
Frequency:	d.c - 50÷500Hz
Insulating voltage:	500/690V~
Protection degree:	IP44/IP54-IP66/IP67/IP69
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max operating ambient temperature:	60°C
Glow Wire test:	650°C housing 850°C contact carrier
Material:	Thermoplastic
IK degree at 20°C:	IK08
Halogen free:	Yes
Terminals:	Screw (16A-32A)
Safe-in device:	16A (on request)

■ TECHNICAL DATA SWITCH DISCONNECTORS

				OPTIMA TOP 0/I		
				16A	32A	
Rated insulation voltage		Ui	VAC	690	690	
Rated impulse withstand voltage		Uimp	kV	4	4	
Thermal current		Ith/Ithe	A	30	40	
Rated operational current - Ie	AC21A Resistive loads, including moderate overloads		500V	A	-	-
			690V	A	30	32
	AC22A Mixed resistive and inductive loads, including moderate overloads		415V	A	-	-
			500V	A	-	-
			690V	A	20	32
	AC23A Switching of motor loads or other highly inductive loads (3 phase / 3 pole)		415V	A	20	32
			500V	A	-	-
			690V	A	16	25
	AC3 Squirrel-cage motor: starting, switching off motor during running (3 phase / 3 pole)		415V	A	-	28.5
			500V	A	12	20
Flexible wire			mm²	1.5-10	1.5-10	
Rigid wire			mm²	1.5-16	1.5-16	

OPTIMA-COMBI Series

■ SURFACE MOUNTING SWITCHED SOCKETS O/I AND L/O/R



OPTIMA-COMBI SWITCH and OPTIMA-COMBI REVERSE L-O-R are a range of surface mounting industrial socket outlets with integrated domestic sockets in the main international standards and switch without interlock or change over switch integrated.

Available in 16 and 32A versions with fuse as protection of the domestic sockets. The change over switch allows the inversion of the phases of a three-phase motor allowing the easy reversal of the motion direction.

■ VERSIONS



COMBI version O/I



COMBI version L/O/R reverse

■ CABLE INLETS M32 (THREADED). QUICK ENTRY THREADED CABLE SLEEVE M32 IP55



■ REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket-outlets and couplers for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories.

EN 60309-4

Plugs, socket-outlets and couplers for industrial purposes.
Part 4: Switched socket-outlets and connectors with or without interlock.

■ TECHNICAL CHARACTERISTICS

Rated current:	16A-32A
Rated voltage:	50÷690V~
Frequency:	d.c - 50÷500Hz
Insulating voltage:	500/690V~
Protection degree:	IP44/IP54
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max operating ambient temperature:	60°C
Glow Wire test:	650°C (housing) 850°C (switch and contact carrier)
Material:	Thermoplastic
IK degree at 20°C:	IK08
Terminals:	Screw (16A-32A)
Fuses:	Max 10A - 5x20mm H: high power cutoff (1500A) T: delayed action

■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Resistant	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Limited Resistance	Limited Resistance

Resistance values to chemical agents have to be considered indicative.

For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com

■ TECHNICAL DATA SWITCH DISCONNECTORS

				OPTIMA COMBI O/I		OPTIMA COMBI L/O/R	
				16A	32A	16A	32A
Rated insulation voltage	Ui	VAC		690	690	500	500
Rated impulse withstand voltage	Uimp	kV		4	4	6	6
Thermal current	Ith/Ithe	A		30	40	40	40
Rated operational current - Ie	AC21A Resistive loads, including moderate overloads	500V	A	-	-	30	32
		690V	A	30	32	-	-
	AC22A Mixed resistive and inductive loads, including moderate overloads	415V	A	-	-	30	32
		500V	A	-	-	30	32
		690V	A	20	32	-	-
	AC23A Switching of motor loads or other highly inductive loads (3 phase / 3 pole)	415V	A	20	32	20	32
		500V	A	-	-	20	32
		690V	A	16	25	-	-
	AC3 Squirrel-cage motor: starting, switching off motor during running (3 phase / 3 pole)	415V	A	-	28.5	11	11
		500V	A	12	20	14	14
Flexible wire		mm ²		1.5-10	1.5-10	4-16	4-16
Rigid wire		mm ²		1.5-16	1.5-16	4-16	4-16

OPTIMA-MIL Series

■ PLUGS AND CONNECTORS FOR MILITARY APPLICATIONS



OPTIMA-MIL is a complete range of industrial plugs and socket outlets from 16 up to 125A in military green color, with NCAGE registration. Robust and safe industrial plugs and sockets thanks to the use of high performance technopolymer enclosures and to the external cable gland with cable clamp function in the mobile versions. Functional thanks to the adoption of screw terminals.

■ VERSIONS

	Plugs
	Connectors
	Appliance inlets
	Flush mounting socket outlets

■ REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket-outlets and couplers for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories.

SCAME complies NCAGE identification number

■ TECHNICAL CHARACTERISTICS

Rated current:	16A-32A-63A-125A
Rated voltage:	50÷690V~
Frequency:	d.c - 50÷500Hz
Insulating voltage:	500/690V~
Protection degree:	IP66/IP67/IP69
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max operating ambient temperature:	60°C
Glow Wire test:	650°C/850°C
Material:	Thermoplastic
IK degree at 20°C:	IK08
Halogen free:	Yes
Terminals:	Screw
Snap-on device:	16A-32A
Nickel-plated pins:	16A-32A-63A-125A

BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Resistant	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Limited Resistance	Limited Resistance

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com

WIRING AND INSTALLATION

Wiring capacity of the terminals (mm²)

Rated voltage	Rated current (A)	Plugs, connectors and appliance inlets		Socket outlets	
		Min	Max	Min	Max
Over 50V	16A	1	2,5	1,5	4
	32A	2,5	6	2,5	10
	63A	6	16	6	25
	125A	16	50	25	70

Max. cable size accepted by the cable clamp:

Rated current (A)	Outside Ø mm	
	Min	Max
16A	8	15
32A	11,5	21
63A	17	31
125A	26	48

APPLICATION EXAMPLE



INDUSTRIAL PLUGS AND SOCKETS



EUREKA Series is a range of 16 and 32A industrial plugs with 90° cable outlet.

The efficiency of the contacts over time is also guaranteed by the use of nickel-plated brass pins, resistant to oxidation and aging.

Quick to wire thanks to the opening of the body by means of a snap-on steel spring mechanism and screw terminals.

VERSIONS



Plugs and connectors
90° angled



Panel mounting socket outlets
90° angled outlet

NO. OF CYCLES

Rated current (A)	Under load	Without load
16A	5.000	-
32A	1.000	1.000

BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Limited Resistance	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Limited Resistance	Resistant

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket outlets and couples for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories of harmonised configurations.

QUALITY MARKS



TECHNICAL CHARACTERISTICS

Rated current:	16A-32A
Rated voltage:	50÷690V~
Frequency:	c.c. - 50÷500Hz
Insulating voltage:	500/690V~
Protection degree:	IP44-IP66/IP67
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max. operating ambient temperature:	60°C
Glow Wire test:	650°C/850°C
Material:	Thermoplastic
IK degree at 20°C:	IK07 (plugs and connectors 90° angled) IK09 (panel mounting socket outlets 90° angled outlet)

■ WIRING AND INSTALLATION

Wiring capacity of the terminals

Cross-section of connectable conductors (mm²)

Rated voltage	Rated current (A)	Plugs and connectors		Socket outlets	
		Min	Max	Min	Max
>50V	16A	1,5	2,5	1,5	4
	32A	2,5	6	2,5	10

Max. cable size accepted by the cable clamp

Rated current (A)	Outside Ø mm	
	Min	Max
16A	8	15
32A	11,5	21

APPLICATION EXAMPLE



IEC309 Series <50V

INDUSTRIAL PLUGS AND SOCKETS



IEC 309 is a range of industrial plugs and sockets for mobile, surface or flush mounting installation for very low voltage applications of less than 50V.

Functional thanks to the adoption of screw terminals.

VERSIONS



Plugs and connectors



Flush mounting socket outlets



Surface mounting socket outlets

REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket outlets and couples for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories of harmonised configurations.

QUALITY MARKS



TECHNICAL CHARACTERISTICS

Rated current:	16A-32A
Rated voltage:	<50V~
Frequency:	c.c. - 50÷500Hz
Insulating voltage:	500/690V~
Protection degree:	IP44-IP66/IP67
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max. operating ambient temperature:	60°C
Glow Wire test:	650°C/850°C
Material:	Thermoplastic
IK degree at 20°C:	IK08 - IK10

BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Limited Resistance	Resistant	Resistant	Limited Resistance	Not Resistant	Resistant	Resistant	Resistant

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com

■ **WIRING AND INSTALLATION**

Wiring capacity of the terminals
Cross-section of connectable conductors (mm²)

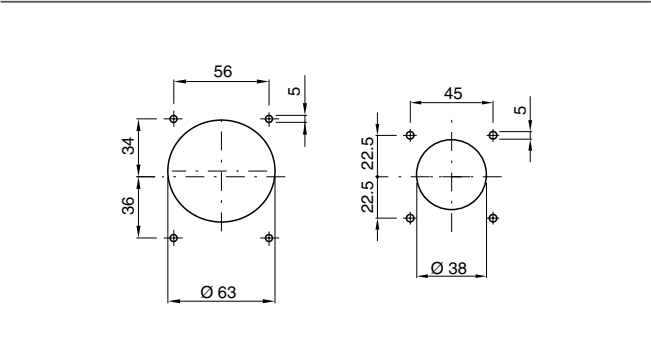
Rated voltage	Rated current (A)	Plugs and connectors		Socket outlets	
		Min	Max	Min	Max
>50V	16A	4	10	4	10
	32A	4	10	4	10

Max. cable size accepted by the cable clamp

Rated current (A)	Outside Ø mm	
	Min	Max
16A	8	15
32A	11,5	21

■ **FIXING**

SCAME sockets for voltage < 50V can be surface mounted or panel mounted on panel boards, or where the surface is set up with the following perforation.



(Dimensions in mm)

APPLICATION EXAMPLE



OPTIMA-SEVEN Series

INDUSTRIAL PLUGS AND SOCKETS



OPTIMA-SEVEN is a range of industrial 7 poles plugs and socket outlets rated 16 and 32A. Robust and safe industrial electrical plugs and sockets thanks to the use of high performance technopolymer enclosures and to the external cable gland with cable clamp function in the mobile versions.

VERSIONS



Plugs



Connectors



Flush mounting appliance inlets



Flush mounting socket outlets



Surface mounting socket outlets



Surface mounting appliance inlets

REFERENCE STANDARDS

EN 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

QUALITY MARKS



TECHNICAL CHARACTERISTICS

Rated current:	16A-32A
Rated voltage:	100÷500V~
Frequency:	50÷600Hz
Insulating voltage:	500/690V~
Protection degree:	IP44 - IP66/IP67
Operating ambient temperature according to the reference standard:	-25°C +40°C
Max operating ambient temperature:	60°C
Glow Wire test:	650°C/850°C
Material:	Thermoplastic
IK degree at 20°C:	IK08
Halogen free:	Yes
Snap-on device:	16A-32A
Nickel-plated pins:	16A-32A

APPLICATION

- Star delta connections
- Tapped winding connections
- Monitoring
- Controlling and actuation
- Electrical interlocks

■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Resistant	Resistant	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Limited Resistance	Limited Resistance

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com

■ WIRING AND INSTALLATION

Wiring capacity of the terminals (mm²)

Rated voltage	Rated current (A)	Plugs and connectors		Socket outlets	
		Min	Max	Min	Max
Over 50V	16A	1	2,5	1,5	4
	32A	2,5	6	2,5	10

Max. cable size accepted by the cable clamp

Rated current (A)	Outside Ø mm	
	Min	Max
16A	8	16
32A	11,5	22

APPLICATION EXAMPLE



XENIA Series

INDUSTRIAL PLUGS AND SOCKETS



The XENIA Series is a range of mobile industrial plugs with technopolymer monobloc body, screw terminals and external cable clamp.

VERSIONS

	Plugs
	Connectors
	Surface mounting socket outlets

REFERENCE STANDARDS

EN 60309-1

Plugs, socket outlets and couples for industrial purposes.
Part 1: general requirements.

EN 60309-2

Plugs, socket outlets and couples for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories of harmonised configurations.

QUALITY MARKS



TECHNICAL CHARACTERISTICS

Rated current:	16A-32A
Rated voltage:	110-415V
Frequency:	50/60Hz
Insulation voltage:	500V
Protection degree:	IP44
Operating ambient temperature according to the reference standard:	-25°C +40°C
Glow wire test:	850°C contacts carrier 650°C handle
IK degree:	IK08
Material:	Thermoplastic
Assembly:	Monobloc body

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 Resistance	Limited Resistance	Limited Resistance	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant

Resistance values to chemical agents have to be considered indicative.
For further information and specific substances, contact the technical service.

Dimensional drawings: www.scame.com

■ WIRING AND INSTALLATION

Wiring capacity of the terminals

Cross-section of connectable conductors (mm²)

Rated voltage	Rated current (A)	Plugs and connectors		Socket outlets	
		Min	Max	Min	Max
>50V	16A	1,5	2,5	1,5	4
	32A	2,5	6	2,5	10

Max. cable size accepted by the cable clamp

Rated current (A)	Outside Ø mm	
	Min	Max
16A	8	15
32A	11,5	21

APPLICATION EXAMPLE



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www.scame.com

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213.1630	10/50	6	213.3230	10/40	6	213.63333	6/24	7	218.12536.KX	1/8	32
213.1630.TR	10/50	6	213.3230F	10/40	6	213.63334	6/24	7	218.12536.MIL	1/8	42
213.1630P	10/50	6	213.3231	10/40	6	213.63336	6/24	7	218.125361	1/8	8
213.1630P.TR	10/50	6	213.3232	10/40	6	213.63338	6/24	7	218.125362	1/8	8
213.1631	10/50	6	213.3233	10/40	6	213.6334	6/24	7	218.125364	1/8	8
213.1632	10/50	6	213.3233.K	10/40	6	213.6335	6/24	7	218.125365	1/8	8
213.1633	10/50	6	213.3233.TR	10/40	6	213.6336	6/24	7	218.125365.KX	1/8	32
213.1633.K	10/50	6	213.32331	10/40	6	213.63361	6/24	7	218.125366	1/8	8
213.1633.TR	10/50	6	213.32332	10/40	6	213.63362	6/24	7	218.125367	1/8	8
213.16331	10/50	6	213.32333	10/40	6	213.63364	6/24	7	218.12537	1/8	8
213.16332	10/50	6	213.32334	10/40	6	213.63365	6/24	7	218.12537.K	1/8	8
213.16333	10/50	6	213.32336	10/40	6	213.63366	6/24	7	218.12537.KX	1/8	32
213.16334	10/50	6	213.32338	10/40	6	213.63367	6/24	7	218.12537.MIL	1/8	42
213.16336	10/50	6	213.3233F	10/40	6	213.6337	6/24	7	218.125371	1/8	8
213.16338	10/50	6	213.3233F.K	10/40	6	213.63371	6/24	7	218.125372	1/8	8
213.1633P	10/50	6	213.3234	10/40	6	213.63372	6/24	7	218.125374	1/8	8
213.1633P.K	10/50	6	213.3234F	10/40	6	213.63374	6/24	7	218.125375	1/8	8
213.1633P.TR	10/50	6	213.3235	10/40	6	213.63375	6/24	7	218.125376	1/8	8
213.1634	10/50	6	213.3235.K	10/40	6	213.63376	6/24	7	218.125377	1/8	8
213.1634P	10/50	6	213.3236	10/40	6	213.63377	6/24	7	218.12538	1/8	8
213.1635	10/50	6	213.3236.K	10/40	6	213.6338	6/24	7	218.1630	10/40	8
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213.1636.K	10/50	6	213.32364	10/40	6	214.1633	50	7	218.1630P.TR	10/40	9
213.16361	10/50	6	213.32365	10/40	6	214.1636	40	7	218.1631	10/40	8
213.16362	10/50	6	213.32366	10/40	6	214.1637	30	7	218.1632	10/40	8
213.16364	10/50	6	213.32367	10/40	6	214.3230	25	7	218.1633	10/40	8
213.16365	10/50	6	213.3236F	10/40	6	214.3233	25	7	218.1633.K	10/40	8
213.16366	10/50	6	213.3236F.K	10/40	6	214.3236	25	7	218.1633.KX	10/40	32
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213.1636P.K	10/50	6	213.3237.K	10/40	6	218.12531	1/8	8	218.16332	10/40	8
213.1636P.TR	10/50	6	213.32371	10/40	6	218.12532	1/8	8	218.16333	10/40	8
213.1636RV	10/50	31	213.32372	10/40	6	218.12533	1/8	8	218.16334	10/40	8
213.1637	10/50	6	213.32374	10/40	6	218.12533.K	1/8	8	218.16336	10/40	8
213.1637-7	10	40	213.32375	10/40	6	218.12533.KX	1/8	32	218.16338	10/40	8
213.1637.K	10/50	6	213.32376	10/40	6	218.12533.MIL	1/8	42	218.1633P	10/40	9
213.16371	10/50	6	213.32377	10/40	6	218.125331	1/8	8	218.1633P.K	10/40	9
213.16372	10/50	6	213.3237F	10/40	6	218.125332	1/8	8	218.1633P.TR	10/40	9
213.16374	10/50	6	213.3237F.K	10/40	6	218.125333	1/8	8	218.1634	10/40	8
213.16375	10/50	6	213.3237RV	10/40	31	218.125334	1/8	8	218.1634.KX	10/40	32
213.16376	10/50	6	213.3238	10/40	6	218.125336	1/8	8	218.1634P	10/40	9
213.16377	10/50	6	213.3238F	10/40	6	218.125338	1/8	8	218.1635	10/40	8
213.1637P	10/50	6	213.6330	6/24	7	218.12534	1/8	8	218.1635.KX	10/40	32
213.1637P.K	10/50	6	213.6331	6/24	7	218.12535	1/8	8	218.1636	10/40	8
213.1637P.TR	10/50	6	213.6332	6/24	7	218.12535.KX	1/8	32	218.1636.K	10/40	8
213.1637RV	10/50	31	213.6333	6/24	7	218.12536	1/8	8	218.1636.KX	10/40	32
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243.1697	10/50	10
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245.16972	10	13
245.16974	10	13
245.16975	10	13
245.16976	10	13
245.16977	10	13
245.1697-7	5	40
245.1697RV	10	31
245.1698	10	13
245.3290	10	13
245.3291	10	13
245.3292	10	13
245.3293	10	13
245.32931	10	13
245.32932	10	13
245.32933	10	13
245.32934	10	13
245.32936	10	13
245.32938	10	13
245.3294	10	13
245.3295	10	13
245.3296	10	13
245.32961	10	13
245.32962	10	13

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
245.32964	10	13
245.32965	10	13
245.32966	10	13
245.32967	10	13
245.3296RV	10	31
245.3297	10	13
245.32971	10	13
245.32972	10	13
245.32974	10	13
245.32975	10	13
245.32976	10	13
245.32977	10	13
245.3297-7	5	40
245.3297RV	10	31
245.3298	10	13
245.6390T	4	13
245.6391T	4	13
245.6392T	4	13
245.6393T	4	13
245.63931T	4	13
245.63932T	4	13
245.63933T	4	13
245.63934T	4	13
245.63936T	4	13
245.63938T	4	13
245.6394T	4	13
245.6395T	4	13
245.6396T	4	13
245.63961T	4	13
245.63962T	4	13
245.63964T	4	13
245.63965T	4	13
245.63966T	4	13
245.63967T	4	13
245.6397T	4	13
245.63971T	4	13
245.63972T	4	13
245.63974T	4	13
245.63975T	4	13
245.63976T	4	13
245.63977T	4	13
245.6398T	4	13
247		
247.1690	10/100	11
247.1691	10/60	11
247.1692	10/50	11
247.1693	10/100	11
247.16932	10/100	11
247.16933	10/100	11
247.16934	10/100	11

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
247.16936	10/100	11
247.16938	10/100	11
247.1694	10/60	11
247.1695	10/50	11
247.1696	10/60	11
247.16961	10/60	11
247.16962	10/60	11
247.16964	10/60	11
247.16965	10/60	11
247.16966	10/60	11
247.16967	10/60	11
247.1697	10/50	11
247.16972	10/50	11
247.16974	10/50	11
247.16975	10/50	11
247.16976	10/50	11
247.16977	10/50	11
247.1698	10/100	11
247.3290	10/40	11
247.3291	10/40	11
247.3292	10/40	11
247.3293	10/40	11
247.32932	10/40	11
247.32933	10/40	11
247.32934	10/40	11
247.32936	10/40	11
247.32938	10/40	11
247.3294	10/40	11
247.3295	10/40	11
247.3296	10/40	11
247.32961	10/40	11
247.32962	10/40	11
247.32964	10/40	11
247.32965	10/40	11
247.32966	10/40	11
247.32967	10/40	11
247.3297	10/40	11
247.32972	10/40	11
247.32974	10/40	11
247.32975	10/40	11
247.32976	10/40	11
247.32977	10/40	11
247.3298	10/40	11
248		
248.12590	10	11
248.12591	10	11
248.12592	10	11
248.12593	10	11
248.12593.MIL	10	42
248.125931	10	11

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
248.125932	10	11
248.125933	10	11
248.125934	10	11
248.125936	10	11
248.125938	10	11
248.12594	10	11
248.12595	10	11
248.12596	10	11
248.12596.MIL	10	42
248.125961	10	11
248.125962	10	11
248.125964	10	11
248.125965	10	11
248.125966	10	11
248.125967	10	11
248.12597	10	11
248.12597.K	10	11
248.12597.MIL	10	42
248.125971	10	11
248.125972	10	11
248.125974	10	11
248.125975	10	11
248.125976	10	11
248.125977	10	11
248.12598	10	11
248.1690	10/50	11
248.1691	10/50	11
248.1692	10/50	11
248.1693	10/50	11
248.1693.K	10/50	11
248.1693.MIL	10/50	42
248.16931	10/50	11
248.16932	10/50	11
248.16933	10/50	11
248.16934	10/50	11
248.16936	10/50	11
248.16938	10/50	11
248.1694	10/50	11
248.1695	10/50	11
248.1696	10/50	11
248.1696.K	10/50	11
248.1696.MIL	10/50	42
248.16961	10/50	11
248.16962	10/50	11
248.16964	10/50	11
248.16965	10/50	11
248.16966	10/50	11
248.16967	10/50	11
248.1696RV	10/50	31
248.1697	10/50	11

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248.1697.K	10/50	11
248.1697.MIL	10/50	42
248.16971	10/50	11
248.16972	10/50	11
248.16974	10/50	11
248.16975	10/50	11
248.16976	10/50	11
248.16977	10/50	11
248.1697RV	10/50	31
248.1698	10/50	11
248.3290	10/50	11
248.3291	10/50	11
248.3292	10/40	11
248.3293	10/50	11
248.3293.K	10/50	11
248.3293.MIL	10/50	42
248.32931	10/50	11
248.32932	10/50	11
248.32933	10/50	11
248.32934	10/50	11
248.32936	10/50	11
248.32938	10/50	11
248.3294	10/50	11
248.3295	10/40	11
248.3296	10/50	11
248.3296.K	10/50	11
248.3296.MIL	10/50	42
248.32961	10/50	11
248.32962	10/50	11
248.32964	10/50	11
248.32965	10/50	11
248.32966	10/50	11
248.32967	10/50	11
248.3296RV	10/50	31
248.3297	10/40	11
248.3297-7	10	40
248.3297.K	10/40	11
248.3297.MIL	10/40	42
248.32971	10/40	11
248.32972	10/40	11
248.32974	10/40	11
248.32975	10/40	11
248.32976	10/40	11
248.32977	10/40	11
248.3297RV	10/40	31
248.3298	10/50	11
248.6390	10	11
248.6391	10	11
248.6392	10	11

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
248.6393	10	11
248.6393.MIL	10	42
248.63931	10	11
248.63932	10	11
248.63933	10	11
248.63934	10	11
248.63936	10	11
248.63938	10	11
248.6394	10	11
248.6395	10	11
248.6396	10	11
248.6396.MIL	10	42
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248.63962	10	11
248.63964	10	11
248.63965	10	11
248.63966	10	11
248.63967	10	11
248.6397	10	11
248.6397.K	10	11
248.6397.MIL	10	42
248.63971	10	11
248.63972	10	11
248.63974	10	11
248.63975	10	11
248.63976	10	11
248.63977	10	11
248.6398	10	11
313		
313.1640	10/50	14
313.1640.TR	10/50	14
313.1640H	10/50	14
313.1640P	10/50	15
313.1640P.TR	10/50	15
313.1641	10/50	14
313.1642	10/50	14
313.1643	10/50	14
313.1643.K	10/50	14
313.1643.TR	10/50	14
313.16431	10/50	14
313.16432	10/50	14
313.16433	10/50	14
313.16434	10/50	14
313.16436	10/50	14
313.16438	10/50	14
313.1643H	10/50	14
313.1643H.K	10/50	14
313.1643P	10/50	15
313.1643P.K	10/50	15
313.1643P.TR	10/50	15

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
313.1644	10/50	14
313.1644H	10/50	14
313.1644P	10/50	15
313.1645	10/50	14
313.1645.K	10/50	14
313.1646	10/50	14
313.1646.K	10/50	14
313.16461	10/50	14
313.16462	10/50	14
313.16464	10/50	14
313.16465	10/50	14
313.16466	10/50	14
313.16467	10/50	14
313.1646H	10/50	14
313.1646H.K	10/50	14
313.1646P	10/50	15
313.1646P.K	10/50	15
313.1647	10/50	14
313.1647-7	10	41
313.1647.K	10/50	14
313.16471	10/50	14
313.16472	10/50	14
313.16474	10/50	14
313.16475	10/50	14
313.16476	10/50	14
313.16477	10/50	14
313.1647H	10/50	14
313.1647H.K	10/50	14
313.1647P	10/50	15
313.1647P.K	10/50	15
313.1648	10/50	14
313.1648H	10/50	14
313.1648P	10/50	15
313.3240	10/40	14
313.3240F	10/40	15
313.3241	10/40	14
313.3242	10/40	14
313.3243	10/40	14
313.3243.K	10/40	14
313.3243.TR	10/40	14
313.32431	10/40	14
313.32432	10/40	14
313.32433	10/40	14
313.32434	10/40	14
313.32436	10/40	14
313.32438	10/40	14
313.3243F	10/40	15
313.3243F.K	10/40	15
313.3244	10/40	14
313.3244F	10/40	15

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
313.3245	10/40	14
313.3245.K	10/40	14
313.3246	10/40	14
313.3246.K	10/40	14
313.32461	10/40	14
313.32462	10/40	14
313.32464	10/40	14
313.32465	10/40	14
313.32466	10/40	14
313.32467	10/40	14
313.3246F	10/40	15
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313.3247	10/40	14
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313.32471	10/40	14
313.32472	10/40	14
313.32474	10/40	14
313.32475	10/40	14
313.32476	10/40	14
313.32477	10/40	14
313.3247F	10/40	15
313.3247F.K	10/40	15
313.3248	10/40	14
313.3248F	10/40	15
313.6340	6/24	15
313.6341	6/24	15
313.6342	6/24	15
313.6343	6/24	15
313.63431	6/24	15
313.63432	6/24	15
313.63433	6/24	15
313.63434	6/24	15
313.63436	6/24	15
313.63438	6/24	15
313.6344	6/24	15
313.6345	6/24	15
313.6346	6/24	15
313.63461	6/24	15
313.63462	6/24	15
313.63464	6/24	15
313.63465	6/24	15
313.63466	6/24	15
313.63467	6/24	15
313.6347	6/24	15
313.63471	6/24	15
313.63472	6/24	15
313.63474	6/24	15
313.63475	6/24	15
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314.1640	40	15
314.1643	40	15
314.1646	30	15
314.1647	25	15
314.3240	20	15
314.3243	20	15
314.3246	20	15
314.3247	15	15

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318.12540	1/8	16
318.12541	1/8	16
318.12542	1/8	16
318.12543	1/8	16
318.12543.K	1/8	16
318.12543.KX	1/8	32
318.12543.MIL	1/8	42
318.125431	1/8	16
318.125432	1/8	16
318.125433	1/8	16
318.125434	1/8	16
318.125436	1/8	16
318.125438	1/8	16
318.12544	1/8	16
318.12545	1/8	16
318.12546	1/8	16
318.12546.K	1/8	16
318.12546.KX	1/8	32
318.12546.MIL	1/8	42
318.125461	1/8	16
318.125462	1/8	16
318.125464	1/8	16
318.125465	1/8	16
318.125466	1/8	16
318.125467	1/8	16
318.12547	1/8	16
318.12547.K	1/8	16
318.12547.KX	1/8	32
318.12547.MIL	1/8	42
318.125471	1/8	16
318.125472	1/8	16
318.125474	1/8	16
318.125475	1/8	16
318.125476	1/8	16
318.125477	1/8	16
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318.1640H	10/40	17
318.1640P	10/40	17
318.1640P.TR	10/40	17
318.1641	10/40	16
318.1642	10/40	16
318.1643	10/40	16
318.1643.K	10/40	16
318.1643.KX	10/40	32
318.1643.TR	10/40	16
318.16431	10/40	16
318.16432	10/40	16
318.16433	10/40	16
318.16434	10/40	16
318.16436	10/40	16
318.16438	10/40	16
318.1643H	10/40	17
318.1643H.K	10/40	17
318.1643.MIL	10/40	42
318.1643P	10/40	17
318.1643P.K	10/40	17
318.1643P.TR	10/40	17
318.1644	10/40	16
318.1644H	10/40	17
318.1644P	10/40	17
318.1645	10/40	16
318.1646	10/40	16
318.1646.K	10/40	16
318.1646.KX	10/40	32
318.1646.MIL	10/40	42
318.16461	10/40	16
318.16462	10/40	16
318.16464	10/40	16
318.16465	10/40	16
318.16466	10/40	16
318.16467	10/40	16
318.1646H	10/40	17
318.1646H.K	10/40	17
318.1646P	10/40	17
318.1646P.K	10/40	17
318.1647	10/40	17
318.1647-7	10	41
318.1647.K	10/40	16
318.1647.KX	10/40	32
318.1647.MIL	10/40	42
318.16471	10/40	16
318.16472	10/40	16
318.16474	10/40	16
318.16475	10/40	16
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318.1647H	10/40	17
318.1647H.K	10/40	17
318.1647P	10/40	17
318.1647P.K	10/40	17
318.1648	10/40	16
318.1648H	10/40	17
318.1648P	10/40	17
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318.3240F	10/40	17
318.3241	10/40	16
318.3242	10/40	16
318.3243	10/40	16
318.3243.K	10/40	16
318.3243.KX	10/40	32
318.3243.MIL	10/40	42
318.3243.TR	10/40	16
318.32431	10/40	16
318.32432	10/40	16
318.32433	10/40	16
318.32434	10/40	16
318.32436	10/40	16
318.32438	10/40	16
318.3243F	10/40	17
318.3243F.K	10/40	17
318.3244	10/40	16
318.3244F	10/40	17
318.3245	10/40	16
318.3246	10/40	16
318.3246.K	10/40	16
318.3246.KX	10/40	32
318.3246.MIL	10/40	42
318.32461	10/40	16
318.32462	10/40	16
318.32464	10/40	16
318.32464.KX	12	32
318.32464F	10/40	17
318.32465	10/40	16
318.32466	10/40	16
318.32467	10/40	16
318.3246F	10/40	17
318.3246F.K	10/40	17
318.3247	10/40	16
318.3247-7	10	41
318.3247.K	10/40	16
318.3247.KX	10/40	32
318.3247.MIL	10/40	42
318.32471	10/40	16
318.32472	10/40	16
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318.32476	10/40	16
318.32477	10/40	16
318.3247F	10/40	17
318.3247F.K	10/40	17
318.3248	10/40	16
318.3248F	10/40	17
318.6340	6/24	16
318.6341	6/24	16
318.6342	6/24	16
318.6343	6/24	16
318.6343.K	6/24	16
318.6343.KX	6/24	32
318.6343.MIL	6/24	42
318.63431	6/24	16
318.63432	6/24	16
318.63433	6/24	16
318.63434	6/24	16
318.63436	6/24	16
318.63438	6/24	16
318.6344	6/24	16
318.6345	6/24	16
318.6346	6/24	16
318.6346.K	6/24	16
318.6346.KX	6/24	32
318.6346.MIL	6/24	42
318.63461	6/24	16
318.63462	6/24	16
318.63464	6/24	16
318.63465	6/24	16
318.63466	6/24	16
318.63467	6/24	16
318.6347	6/24	16
318.6347.K	6/24	16
318.6347.KX	6/24	32
318.6347.MIL	6/24	42
318.63471	6/24	16
318.63472	6/24	16
318.63474	6/24	16
318.63475	6/24	16
318.63476	6/24	16
318.63477	6/24	16
318.6348	6/24	16

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321.1640	10/100	15
321.1643	10/100	15
321.1646	10/100	15
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321.3240	10/50	15
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326.1646	10/100	17
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326.1647	10/50	17
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326.3240	10/40	17
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326.3243	10/40	17
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326.3246	10/40	17
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326.32464	10/40	17
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326.3247	10/40	17
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330.16060	10/100	35
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330.16062	10/100	35
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330.32065	10/100	35
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330.32084	10/100	35
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330.32085	10/100	35
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330.3209	10/100	35
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335.1605	10/100	35
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335.1606	10/100	35
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335.16060	10/100	35
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335.16062	10/100	35
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335.16064	10/100	35
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335.16065	10/100	35
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335.1607	10/100	35
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335.1608	10/100	35
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335.16084	10/100	35
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335.16085	10/100	35
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335.3205	10/50	35
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335.3206	10/50	35
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335.32060	10/50	35
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335.32062	10/50	35
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335.32064	10/50	35
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335.32065	10/50	35
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335.3207	10/50	35
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335.3208	10/50	35
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335.32080	10/50	35
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335.32082	10/50	35
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335.32084	10/50	35
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335.32085	10/50	35
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335.3209	10/50	35
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413

413.1660	10/100	18
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413.1660F	10/100	18
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413.1660H	10/100	18
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413.1661	10/100	18
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413.1662	10/100	18
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413.1663	10/100	18
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413.1663.K	10/100	18
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413.16631	10/100	18
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413.16632	10/100	18
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413.16633	10/100	18
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413.16634	10/100	18
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413.16636	10/100	18
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413.16638	10/100	18
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413.1663F	10/100	18
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413.1663F.K	10/100	18
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413.1663H	10/100	18
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413.1663H.K	10/100	18
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413.1664	10/100	18
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413.1664F	10/100	18
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413.1664H	10/100	18
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413.1665	10/100	18
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413.1666	10/100	18
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413.1666.K	10/100	18
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413.16661	10/100	18
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413.16662	10/100	18
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413.16664	10/100	18
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413.16665	10/100	18
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413.16666	10/100	18
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413.16667	10/100	18
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413.1666F	10/100	18
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413.1666F.K	10/100	18
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413.1666H.K	10/100	18
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413.1667	10/100	18
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413.1667.K	10/100	18
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413.16671	10/100	18
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413.16672	10/100	18
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413.16674	10/100	18
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413.16675	10/100	18
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413.16676	10/100	18
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413.16677	10/100	18
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413.1667F	10/100	18
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413.1667F.K	10/100	18
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413.1667H	10/100	18
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413.1667H.K	10/100	18
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413.1668	10/100	18
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413.1668F	10/100	18
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413.1668H	10/100	18
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413.3260	10/50	18
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413.3260F	10/50	18
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413.3261	10/50	18
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413.3262	10/50	18
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413.3263	10/50	18
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413.3263.K	10/50	18
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413.32631	10/50	18
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413.32632	10/50	18
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413.32633	10/50	18
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413.32634	10/50	18
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413.32636	10/50	18
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413.32638	10/50	18
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413.3263F	10/50	18
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413.3263F.K	10/50	18
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413.3264	10/50	18
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413.3264F	10/50	18
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413.3265	10/50	18
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413.3266	10/50	18
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413.3266.K	10/50	18
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413.32661	10/50	18
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413.32662	10/50	18
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413.32664	10/50	18
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413.32665	10/50	18
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413.32666	10/50	18
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413.32667	10/50	18
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413.3266F	10/50	18
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413.3266F.K	10/50	18
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413.3267	10/50	18
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413.3267-7	10	41
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413.3267.K	10/50	18
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413.32671	10/50	18
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413.32672	10/50	18
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413.32675	10/50	18
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413.32676	10/50	18
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413.32677	10/50	18
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413.3267F	10/50	18
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413.3267F.K	10/50	18
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413.3268	10/50	18
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413.3268F	10/50	18
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413.6360	6/30	19
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413.6361	6/30	19
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413.6362	6/30	19
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413.6363	6/30	19
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413.63631	6/30	19
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413.63631	6/30	19
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418.125661	1/10	21
418.125662	1/10	21
418.125664	1/10	21
418.125665	1/10	21
418.125666	1/10	21
418.125667	1/10	21
418.12567	1/10	21
418.12567.K	1/10	21
418.125671	1/10	21
418.125672	1/10	21
418.125674	1/10	21
418.125675	1/10	21
418.125676	1/10	21
418.125677	1/10	21
418.12568	1/10	21
418.1660	10/100	20
418.1660F	10/100	20
418.1660H	10/100	20
418.1661	10/100	20
418.1662	10/100	20
418.1663	10/100	20
418.1663.K	10/100	20
418.16631	10/100	20
418.16632	10/100	20
418.16633	10/100	20
418.16634	10/100	20
418.16636	10/100	20
418.16638	10/100	20
418.1663F	10/100	20
418.1663F.K	10/100	20
418.1663H	10/100	20
418.1663H.K	10/100	20
418.1664	10/100	20
418.1664F	10/100	20
418.1664H	10/100	20
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418.1666	10/100	20
418.1666.K	10/100	20
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418.16662	10/100	20
418.16664	10/100	20
418.16665	10/100	20
418.16666	10/100	20
418.16667	10/100	20
418.1666F	10/100	20
418.1666F.K	10/100	20
418.1666H	10/100	20
418.1666H.K	10/100	20
418.1667	10/100	20
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CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
418.1667.K	10/100	20
418.16671	10/100	20
418.16672	10/100	20
418.16674	10/100	20
418.16675	10/100	20
418.16676	10/100	20
418.16677	10/100	20
418.1667F	10/100	20
418.1667F.K	10/100	20
418.1667H	10/100	20
418.1667H.K	10/100	20
418.1668	10/100	20
418.1668F	10/100	20
418.1668H	10/100	20
418.3260	10/50	20
418.3260F	10/50	20
418.3261	10/50	20
418.3263	10/50	20
418.3263.K	10/50	20
418.32631	10/50	20
418.32632	10/50	20
418.32633	10/50	20
418.32634	10/50	20
418.32636	10/50	20
418.32638	10/50	20
418.3263F	10/50	20
418.3263F.K	10/50	20
418.3264	10/50	20
418.3264F	10/50	20
418.3265	10/50	20
418.3266	10/50	20
418.3266.K	10/50	20
418.32661	10/50	20
418.32662	10/50	20
418.32664	10/50	20
418.32665	10/50	20
418.32666	10/50	20
418.32667	10/50	20
418.3266F	10/50	20
418.3266F.K	10/50	20
418.3267	10/50	20
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418.3267.K	10/50	20
418.32671	10/50	20
418.32672	10/50	20
418.32674	10/50	20
418.32675	10/50	20
418.32676	10/50	20
418.32677	10/50	20
418.3267F	10/50	20

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
418.3267F.K	10/50	20
418.3268	10/50	20
418.3268F	10/50	20
418.6360	6/30	21
418.6361	6/30	21
418.6362	6/30	21
418.6363	6/30	21
418.63631	6/30	21
418.63632	6/30	21
418.63633	6/30	21
418.63634	6/30	21
418.63636	6/30	21
418.63638	6/30	21
418.6364	6/30	21
418.6365	6/30	21
418.6366	6/30	21
418.63661	6/30	21
418.63662	6/30	21
418.63664	6/30	21
418.63665	6/30	21
418.63666	6/30	21
418.63667	6/30	21
418.6367	6/30	21
418.6367.K	6/30	21
418.63671	6/30	21
418.63672	6/30	21
418.63674	6/30	21
418.63675	6/30	21
418.63676	6/30	21
418.63677	6/30	21
418.6368	6/30	21
423		
423.1660	10/100	19
423.1660/R	10/100	19
423.1660/RR	10/100	19
423.1661	10/100	19
423.1661/R	10/100	19
423.1662	10/100	19
423.1663	10/100	19
423.1663.K	10/100	19
423.1663/R	10/100	19
423.1663/R.K	10/100	19
423.1663/RR	10/100	19
423.16631	10/100	19
423.16632	10/100	19
423.16633	10/100	19
423.16634	10/100	19
423.16636	10/100	19
423.16638	10/100	19
423.1664	10/100	19

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
423.1664/R	10/100	19
423.1665	10/100	19
423.1666	10/100	19
423.1666.K	10/100	19
423.1666/R	10/100	19
423.1666/R.K	10/100	19
423.16661	10/100	19
423.16662	10/100	19
423.16664	10/100	19
423.16665	10/100	19
423.16666	10/100	19
423.16667	10/100	19
423.1667	10/100	19
423.1667.K	10/100	19
423.16671	10/100	19
423.16672	10/100	19
423.16674	10/100	19
423.16675	10/100	19
423.16676	10/100	19
423.16677	10/100	19
423.1668	10/100	19
423.1668/R	10/100	19
423.1668/RR	10/100	19
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423.3261	10/50	19
423.3262	10/50	19
423.3263	10/50	19
423.3263.K	10/50	19
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423.32632	10/50	19
423.32633	10/50	19
423.32634	10/50	19
423.32636	10/50	19
423.32638	10/50	19
423.3264	10/50	19
423.3265	10/50	19
423.3266	10/50	19
423.3266.K	10/50	19
423.32661	10/50	19
423.32662	10/50	19
423.32664	10/50	19
423.32665	10/50	19
423.32666	10/50	19
423.32667	10/50	19
423.3267	10/50	19
423.3267.K	10/50	19
423.32671	10/50	19
423.32672	10/50	19
423.32674	10/50	19
423.32675	10/50	19

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423.32676	10/50	19
423.32677	10/50	19
423.3268	10/50	19
423.6360	6/30	19
423.6361	6/30	19
423.6362	6/30	19
423.6363	6/30	19
423.63631	6/30	19
423.63632	6/30	19
423.63633	6/30	19
423.63634	6/30	19
423.63636	6/30	19
423.63638	6/30	19
423.6364	6/30	19
423.6365	6/30	19
423.6366	6/30	19
423.63661	6/30	19
423.63662	6/30	19
423.63664	6/30	19
423.63665	6/30	19
423.63666	6/30	19
423.63667	6/30	19
423.6367	6/30	19
423.63671	6/30	19
423.63672	6/30	19
423.63674	6/30	19
423.63675	6/30	19
423.63676	6/30	19
423.6368	6/30	19
423.63677	6/30	19

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428.12560	1/10	21
428.12561	1/10	21
428.12562	1/10	21
428.12563	1/10	21
428.12563.MIL	1/10	43
428.125631	1/10	21
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428.125633	1/10	21
428.125634	1/10	21
428.125636	1/10	21
428.125638	1/10	21
428.12564	1/10	21
428.12565	1/10	21
428.12566	1/10	21
428.12566.MIL	1/10	43
428.125661	1/10	21
428.125662	1/10	21
428.125664	1/10	21
428.125665	1/10	21

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428.125667	1/10	21
428.12567	1/10	21
428.12567.MIL	1/10	43
428.125671	1/10	21
428.125672	1/10	21
428.125674	1/10	21
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428.125676	1/10	21
428.125677	1/10	21
428.12568	1/10	21
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428.1660/RR	10/100	21
428.1661	10/100	21
428.1661/R	10/100	21
428.1662	10/100	21
428.1663	10/100	21
428.1663.K	10/100	21
428.1663.MIL	10/100	43
428.1663/R	10/100	21
428.1663/R.K	10/100	21
428.1663/RR	10/100	21
428.16631	10/100	21
428.16632	10/100	21
428.16633	10/100	21
428.16634	10/100	21
428.16636	10/100	21
428.16638	10/100	21
428.1664	10/100	21
428.1664/R	10/100	21
428.1665	10/100	21
428.1666	10/100	21
428.1666.K	10/100	21
428.1666.MIL	10/100	43
428.1666/R	10/100	21
428.1666/R.K	10/100	21
428.16661	10/100	21
428.16662	10/100	21
428.16664	10/100	21
428.16665	10/100	21
428.16666	10/100	21
428.16667	10/100	21
428.1667	10/100	21
428.1667.K	10/100	21
428.1667.MIL	10/100	43
428.16671	10/100	21
428.16672	10/100	21
428.16674	10/100	21
428.16675	10/100	21

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428.16676	10/100	21
428.16677	10/100	21
428.1668	10/100	21
428.1668/R	10/100	21
428.1668/RR	10/100	21
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428.3261	10/50	21
428.3262	10/50	21
428.3263	10/50	21
428.3263.K	10/50	21
428.3263.MIL	10/50	43
428.32631	10/50	21
428.32632	10/50	21
428.32633	10/50	21
428.32634	10/50	21
428.32636	10/50	21
428.32638	10/50	21
428.3264	10/50	21
428.3265	10/50	21
428.3266	10/50	21
428.3266.K	10/50	21
428.3266.MIL	10/50	43
428.32661	10/50	21
428.32662	10/50	21
428.32664	10/50	21
428.32665	10/50	21
428.32666	10/50	21
428.32667	10/50	21
428.3267	10/50	21
428.3267.K	10/50	21
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428.32671	10/50	21
428.32672	10/50	21
428.32674	10/50	21
428.32675	10/50	21
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428.3268	10/50	21
428.6360	6/30	21
428.6361	6/30	21
428.6362	6/30	21
428.6363	6/30	21
428.6363.MIL	6/30	43
428.63631	6/30	21
428.63632	6/30	21
428.63633	6/30	21
428.63634	6/30	21
428.63636	6/30	21
428.63638	6/30	21

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428.6366	6/30	21
428.6366.MIL	6/30	43
428.63661	6/30	21
428.63662	6/30	21
428.63664	6/30	21
428.63665	6/30	21
428.63666	6/30	21
428.63667	6/30	21
428.6367	6/30	21
428.6367.MIL	6/30	43
428.63671	6/30	21
428.63672	6/30	21
428.63674	6/30	21
428.63675	6/30	21
428.63676	6/30	21
428.63677	6/30	21
428.6368	6/30	21

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430.1616	10/100	36
430.1616/R	10/100	37
430.16160	10/100	36
430.16160/R	10/100	37
430.16162	10/100	36
430.16162/R	10/100	37
430.16164	10/100	36
430.16164/R	10/100	37
430.16165	10/100	36
430.16165/R	10/100	37
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430.1617/R	10/100	37
430.1618	10/100	36
430.1618/R	10/100	37
430.16180	10/100	36
430.16180/R	10/100	37
430.16182	10/100	36
430.16182/R	10/100	37
430.16184	10/100	36
430.16184/R	10/100	37
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430.1619/R	10/100	37
430.3215	10/100	36
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430.32162/R	10/100	37
430.32164	10/100	36
430.32164/R	10/100	37
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430.32165/R	10/100	37
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430.32182	10/100	36
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430.32184	10/100	36
430.32184/R	10/100	37
430.32185	10/100	36
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435.1616	10/100	36
435.1616/R	10/100	37
435.16160	10/100	36
435.16160/R	10/100	37
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435.16162/R	10/100	37
435.16164	10/100	36
435.16164/R	10/100	37
435.16165	10/100	36
435.16165/R	10/100	37
435.1617	10/100	36
435.1617/R	10/100	37
435.1618	10/100	36
435.1618/R	10/100	37
435.16180	10/100	36
435.16180/R	10/100	37
435.16182	10/100	36
435.16182/R	10/100	37
435.16184	10/100	36
435.16184/R	10/100	37
435.16185	10/100	36
435.16185/R	10/100	37
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435.1619/R	10/100	37
435.3215	10/100	36
435.3215/R	10/100	37

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
435.3216	10/100	36
435.3216/R	10/100	37
435.32160	10/100	36
435.32160/R	10/100	37
435.32162	10/100	36
435.32162/R	10/100	37
435.32164	10/100	36
435.32164/R	10/100	37
435.32165	10/100	36
435.32165/R	10/100	37
435.3217	10/100	36
435.3217/R	10/100	37
435.3218	10/100	36
435.3218/R	10/100	37
435.32180	10/100	36
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512.3253	10/40	24
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513.1653-2DNS	6	29	513.16565T	10/40	22	513.3253-2AFS	1/6	29	513.32566T	10	22
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513.16536T	10/40	22	513.1657-2FNS	1/6	29	513.32534T	10	22	513.3257-AF	10	27
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535.32114	10/50	39
535.32115	10/50	39
535.3212	10/50	39
535.3213	10/50	39
535.32130	10/50	39
535.32132	10/50	39
535.32134	10/50	39
535.32135	10/50	39
535.3214	10/50	39

570

570.0016	10/100	33
570.0032	10	33
570.0116	10	33
570.0116.20	10	33
570.0116.25	10	33
570.0132	10	33
570.0132.32	10	33
570.9001	1	33
570.9002	1	33
570.90163	10/100	33
570.90163.MIL	10/100	43

CATALOGUE NUMBER	PACKAGE/ BULK PACK.	PAGE
570.90164	10/100	33
570.90164.MIL	10/100	43
570.90165	10/100	33
570.90165.MIL	10/100	43
570.90324	10/100	33
570.90324.MIL	10/100	43
570.90325	10/100	33
570.90325.MIL	10/100	43
570.9063	1/10	33
570.9063.MIL	1/10	43
570.9125	1/10	33
570.9125.MIL	1/10	43
570.M0125	6	33
570.M0163	6	33

603

603.3505-062.MIL	1/10	43
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654

654.0108	5	33
654.0382	10/100	33
654.0391	10	33
654.0392	10	33
654.0393	10	33
654.0394	10	33

805

805.5020	100/1000	33
805.5025	100/1000	33
805.5032	100/1000	33



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