

Series (Picture)	Manufacturer	Link	Outline	Max Current	Max Voltage	Waterproof	Latch Type [1]	Panelmount	Wire-to-Wire	Smallest Gauge (Largest Gauge) [2]	Contact Type [4]	PCB Mount	Solder	Crimp	IDC [5]	Board Fingers [6]	Gendered	Min Pins [7]	Max Pins [8]	Rows	Year Int End of L Pinout [9]	Drecision [10]	Colors	Key-Shape	Mouse	Notes	
SH	JST	https://www.jst-mfg.com/product/detail_e.php?	Rectangular	1 A	50 V	No	Latching	No	Yes	30 AWG	28 AWG	1.0 mm	Pins	Both	Yes	Yes	No	No	Yes	2	25	2					
DuPont	Harwin/ Generic	http://www.makimimo.com/info/crimponnag	Rectangular	1 A	50 V	No	Friction	No	Yes	28 AWG	24 AWG	2.54mm	Pins	PTH	Yes	Yes [11]	No	No	Yes	1	12	1			Black shell		Arduino standard patch connector, Harwin clones, proper crimp tool 400USD+ , lesser crimp tools not up to job
PH	JST	http://www.jst-mfg.com/product/detail_e.php?	Rectangular	2 A	100 V	No	Detent	No	No	24 AWG	24 AWG	2.0 mm	Pins	Both	Yes	Yes	No	No	Yes	2	1	1		G D V	White		Popular small size
PicoBlade	Molex	https://www.molex.com/molex/products/family	Rectangular	3 A	125 V	No	Latching	No	Yes	28 AWG	26 AWG	1.25 mm	Pins	Both	Yes	Yes	No	No	Yes	2	15	1					R.C. Lipo Balance connector , Internal connector in some controllers 2.5mm root 2.54 (1/10") pitch runs off on boards drilled for 2.54
XH	JST	http://www.digkey.com/en/product-highlight/jst/xh-series-connectors	Rectangular	3 A	250 V	No	Latching	No	Yes	30 AWG	22 AWG	2.5 mm	Pins	Both	Yes	Yes	No	No	Yes	1	20					White	https://www.digkey.com/en/product-highlight/jst/xh-series-connectors
SM	JST	http://www.jst-mfg.com/en/product/detail_e.php?	Rectangular	3 A	250 V	No	Latching	No	Yes			2.54 mm	Pins	Both	Yes	Yes	No	No	Yes	2		1		G D V	Male to Fei White, Black		Most popular
M12	Generic	https://uk.rs-online.com/web/p/industrial-circu	Circular	4 A	50 V	IP67	Screw Lock	Yes	Yes	22 AWG	14 AWG		Pins	PTH	Yes	Yes	No	No	Yes	3	8	N/A			Black		Originally sensor connectors for automation, low cost varieties available
Molex KK AKA KF2510	Molex	https://www.molex.com/molex/products/group	Rectangular	4 A	250 V	No	Friction	No	No	30 AWG	22 AWG	2.54mm	Pins	PTH	Yes	Yes	No	Yes	Yes	2	36						Molex KK Pitch 2.54 (1/10") Arduino pitch also 3.96 and 5.08 . Industrial standard connector common in amusement machines. Larger contact area than XH. Clones KF2510 2.54 CH 3.96 and CH5.08
D.C. Barrel	Generic	https://www2.mouser.com/Connectors/Power	Circular	5A	30 V	IP20-IP65	Friction	Yes	Yes	24 AWG	18 AWG		Pins	PTH	Yes	Yes	Yes	No	Yes	2	2			#NAME?		https://www	O.C Barrel Connector 2.1mm centre pin most common, 2.5 mm pin looks similar but dosent fit.
Pigtails	Generic	https://www.wiredwatts.com/Wire	Circular	5 A	50 V	IP55	Friction	No	Yes	20 AWG	18 AWG		Pins	No	Yes	Yes	No	No	Yes	2	4				Black		Round moulded on connectors popuar with Holiday light community, several similar but incompatible styles
SP13	Weipu	https://weipuconnector.com/product/37	Circular	5 A	250 V	IP68	Screw Lock	Yes	Yes	24 AWG	20 AWG		Pins	No	Yes	No	No	No	Yes	2	9	N/A				Black Blue collar	Glass filled nylon shell with gold plated brass contacts.Weipu originator of format , cheaper clones around.
g159	AVX	https://www.avx.com/products/connectors/boi	Rectangular	5 A	125 V	No	Latching	No	Yes	24 AWG	22 AWG	3.0 mm	Spring	SMT	Yes	Yes	Yes	Yes	Yes	2	6	1			White	https://www.digkey.com/short/cvwmxz	
GX-16	Generic	https://www.renholcpro.com/gx16-connector	Circular	7 A	100 V	IP30 [12]	Screw Lock	Yes	Yes	24 AWG	20 AWG		Pins	No	Yes	No	No	No	Yes	2	10	N/A				Silver Metal Black Plastic	AKA Aviation Connector, CB Mic Connector, most common in 4 pin variant,Chrome metal Shell and IP65 Version in Black Plastic "Legacy Connector NOT For New Designs"
XLR 5	Neutrik /Generic	https://www.neutrik.com/en/products/lightning	Circular	10 A	50 V	IP40	Latching	Yes	Yes	22 AWG	14 AWG		Pins	Both	Yes	Yes	Yes	No	Yes	2	7	N/A					5 Pin is USITT Standard for DMX 512, Pins 4 + 5 Not Used in Standard. Beware of power or second universe on non standard pinouts . XLR 4 scroller cable 2 data+2 power, XLR 6 comms & video gear.
SP17	Weipu	https://weipuconnector.com/product/38	Circular	10 A [13]	500 V	IP68	Screw Lock	Yes	Yes	22 AWG	14 AWG		Pins	No	Yes	Yes	No	No	Yes	2	10	N/A				Black Blue Collar	Also available in SP21 and SP29 , clones in SP16 and SP28
Mini Buzanear	Bulgin	https://www.bulgin.com/us/products/range/lor	Circular	10 A	250 V	IP68	Screw Lock	Yes	Yes	24 AWG	18 AWG		Pins	No	Yes	Yes	No	No	Yes	1	8					Black Blue collar	Bulgin, long established UK connector maker, available with crimp or screw terminals. locking collar can be fragile with rough handling
MTSB CombiCon	Phoenix Contact	https://in.radiolovers.com/product/phoenix-comb	Rectangular	10 A	300 V	No	Friction	No	No	20 AWG	10 AWG	5.08 mm	Pins	Both	Yes	Yes	Yes	Yes	Yes	2	12	1			Green	https://www.digkey.com	Also in 2.54 mm pitch , and literally thousands of variations
IEC C13 /C14	Generic	https://en.wikipedia.org/wiki/IEC_60320#C13	Rectangular	10 A	250 V	no	Friction [14]	Yes	Yes	20 AWG	16 AWG		Blade	PTH	Yes	Yes	No	No	Yes	3	3	2					Common PSU and appliance inlet connector C13 is Socket C14 is Plug. Hot condition "kettle plug" is C15 /C16 has notch out of socket
EN3	Switchcraft/Conxall	https://en.wikipedia.org/wiki/IEC_60320#C13	Circular	13 A	250 V	IP68	Twist Lock	Yes	Yes	28 AWG	16 AWG		Pins	PTH	Yes	Yes	No	No	Yes	2							Switchcraft/Conxall , long established USA connector maker, available with straight and right angle PCB mounting
Deutsch DT	TE Deutsch	https://www.te.com/usa-en/products/connecto	Rectangular/Trian	13 A	230 V	IP68	Latching	Yes	Yes	20 AWG	14 AWG		Pins	PTH	No	Yes	No	No	Yes	2	12	2					Automotive and Marine connector series , compatible/knock offs common, specific crimp tool required
Mini-Fit Jr	Molex	https://www.molex.com/molex/products/family	Rectangular	13 A	600 V	No	Latching	No	Yes	28 AWG	16 AWG	4.2 mm	Pins	PTH	No	Yes	No	No	Yes	2	16	2			Nylon Natural		Available with 2 wire into single crimp.
Superseal	TE /AMP	https://www.te.com/content/dam/te-com/docu	Rectangular	14 A	24 V	IP68	Latching	Yes	Yes	22 AWG	14 AWG	6.0 mm	Pins	No	No	Yes	No	No	Yes	1	8	2					AMP Superseal and Delphi are original products ,automotive and marine series, much copied . Requires specific crimp tool for contacts.
XLR 3	Neutrik /Generic	https://www.neutrik.com/en/neutrik/products/x	Circular	16 A	50 V	IP40	Latching	Yes	Yes	22 AWG	14 AWG		Pins	Both	Yes	Yes	Yes	No	Yes	2	7	N/A					AKA Cannon, original with side grub screw, Neutrik developed chuck cable grip. Metal bodied world standard audio and microphone connector, 3 pin also used for DMX512
PowerCon	Neutrik	https://www.neutrik.com/en/neutrik/products/p	Circular	16 A [15]	250 V	IP65 [16]	Latching	Yes	Yes [17]	20 AWG	12 AWG		Blade	No	Yes	Yes	No	No	Yes	3	3	N/A			Multi		Powercon is original blue , True 1 was IP rated version frequent latch failure, True1 TOP is current recommended mains power connector SeeTronic common Compatible/Clone
CEE-Form	Generic	https://www.panorama.net/blog/2021/08/19/	Circular	16 A	250/415V	IP65	Latching	Yes	Yes	22 AWG	12 AWG		Pins	No	No	Yes	No	No	Yes	3	7				Yellow 110V Blue 240V Red 415V		Also known in building trade as Commando Connectors. 16A Blue 3 Pin single phase popular European connector for stage power distribution. Red Three Phase connector up to 125A . Other colours used in
Male-N-Lok	TE /AMP	https://www.te.com/usa-en/products/brands/n	Rectangular	19 A	600 V	No	Latching	No	Yes	30 AWG	10 AWG		Pins	PTH	No	Yes	No	No	Yes	2	10	2					Popular automotive connector
Socapex	Amphenol / Generic	https://3connectors.com/what-are-socapex-	Circular	23 A	600 V	IP67	Screw Lock	Yes	Yes	20 AWG	12 AWG		Pins	PTH	Yes	Yes	No	No	Yes	4	36		1962				19 Pin Socapex World standard 6 circuit mains multi core connector for production use, accepts up to 2.5mm per pin cable.
Harling Han/ Lectriflex	Harling	https://www.harling.com/US/en/energy-duty-ele	Circular	25 A	450 V	IP40	Latching	Yes	Yes	28 AWG	10 AWG		Pins	No	Yes	Yes	Yes	No	Yes	2	36						Harling Han rectangular AKA 16 pin Lectriflex as alternative to Socapex in stage lighting. Multi pin mains connector , modular able to have power , data and even hose lines on one connector.
Speakon	Neutrik	https://www.neutrik.com/en/neutrik/products/s	Circular	30 A [18]	250 V	IP30 [19]	Latching	Yes	Yes	18 AWG	10 AWG		Blade	No	Yes	No	No	No	Yes	2	8	N/A			Multi		World Standard professional amplifier to speaker connector, compatibles offer low cost high current connector , if avoid mix up with audio....
MT30/60	Generic	https://www.flyingtech.co.uk/cables-connector	Triangular	30/60	60 V	IP20-IP65	Friction	No	Yes	20 AWG	16 AWG		Pins	No	Yes	No	No	No	Yes	3	3		2018			Yellow or Black	3 Pin Version of XT60. RC ESC motor Connector, 30 A and 60A rating peak , half rating for continuous use
Wago 221	Wago	https://www.wago.com/global/electrical-interco	Rectangular	32 A	450 V	No	Latching	No	Yes	28 AWG	10 AWG	10.0 mm	Spring	No	No	No	No	No	No	2	5	1			Clear/Orange		Successor to Wago 222 Tool free, lever clamping wire to wire connectors, wide range of wire diameter acceptance in stranded or solid Ideal for thin taps of thick bus lines
PowerPole 1545	Anderson	https://www.andersonpower.com/usa/en/resou	Rectangular	55 A	600 V	IP65 Available [20]	Friction	Yes	Yes	20 AWG	6 AWG	15.9 mm	Blade	PTH	Yes	Yes	No	No	No	1	16	N/A			Multi	https://www.digkey.com	Anderson PowerPole, Genderless, Clip together shells in 11 colours, Radio HAM power standard, panel mounting and waterproofing options.Extremely robust mixed signal and high current connector.
XT60	Generic	https://www.sparkfun.com/products/10474	Rectangular	60 A	42 V	No	Friction	No	Yes	22 AWG	10 AWG	10.0 mm	Pins	PTH	Yes	No	No	No	Yes	2	2	1				Yellow also Black	Also XT30, 30A & XT90 ,90A , Standard connector for LiPo batteries in RC, generic connector, some poor quality versions around dimensions http://cdn.sparkfun.com/datasheets/Prototyping/xt60.pdf

[1] How do mating connectors hold onto each other?

[2] Higher numbered AWG

[3] Lower numbered AWG

[4] How do the individual pins make contact with each other?

Pins: Inserted into hole

Blade: Inserted into pinching slot

Spring: Pressed against opposing surface

[5] Insulation Displacement Crimping

[6] Can standard Rigid or Flex PCB be designed to be used directly as one half of the connector series?

[7] Minimum number of pins available in connector series

[8] Maximum number of pins available in connector series

[9] De facto standard pinout

[10] De facto data direction for off the shelf LED strips

[11] Proper crimp tool over 400 USD

[12] IP65 in Plastic Shell Variant

[13] 15 A for lower pin count

[14] proprietary latching versions exist

[15] 16A True1 Top 20A Powercon 32A bigPowercon

[16] True1 TOP

[17] True 1 only, Powercon requires back to back adapter

[18] 50A in High Current Range

[19] IP54 with sealing ring on some variants

[20] SpecPak shells and boots for waterproofing