



SOLUTIONS
CONNECTOR - POWER SUPPLY - ASSEMBLY

EDITION 2019/2020

E-MOBILITY
CONNECTORS

Photo: © PINION GmbH



NICE TO MEET YOU

We are A&C Solutions, the connector & harness distribution specialist that offers you a tailor-made solution to any e-mobility application. We complement our offer with high-end power supply solutions and we manage your stock on request.

As a full service provider, we are ready to support you into the e-mobility era of the future!

Do you want to get to know us better?



SOLUTIONS DESIGNED AROUND YOUR BUSINESS



'A connector solution that matches, we don't settle for anything less'

THIS IS HOW WE WORK

‘We strongly believe that where focus goes, business grows’



YOU'RE OUR CENTERPIECE

We don't sell products, we sell solutions. A solution only becomes one when it fully meets your requirements. It doesn't matter whether you are looking for a single connector or a fully customized cable set. We are there to help you find the right match at the best price available in the market.



E-MOBILITY FOCUS

We can only add value to your business when we step into your world and learn to understand it. Therefore, we have chosen to align our knowledge and range of connector & power supply solutions with targeted markets like E-mobility.



COMPLEMENTARY OFFER

We believe in niche brands that complement each other and make A&C Solutions a more complete and stronger partner for our customers. Each of our brands brings something to the table that makes it stand out of the crowd.



A SPECIALIST AT YOUR SERVICE

We have a clear focus on connector & power supply solutions. In both fields, we have built a strong expertise that helps us to advise you the best solution for your application.



LONGTERM PARTNERSHIPS

We are a partnership builder who is convinced that success can only come from a long term focus. This is how we approach our suppliers, assembly partners and above all, our customers.



YOUR STOCK MANAGER

Our stock management services are designed to support your ongoing production process. We deliver a large part of the conventional connector & power supply solutions directly from stock within 24 hours. And we keep designated customer stock on demand or based on periodic forecast information.

THIS IS WHY OUR CUSTOMERS WORK WITH US

SOURCE: ANNUAL CUSTOMER SURVEY



**CUSTOMER
FRIENDLINESS**



**RELIABLE
PARTNER**



**QUICK
RESPONSE**



**TAILOR MADE
SOLUTIONS**



**DELIVERY
RELIABILITY**



**QUALITY MINDED
ISO 9001:2015**

A WORD FROM OUR TEAM

The road ahead

We, e-bike lovers in business, always look at the road ahead of us. It's paved with new opportunities to explore. Though sometimes, when a certain momentum (in our case a partnership anniversary) pops up, it forces you to look back, just for a minute, on the road you have taken so far together. And it helps you to clearly define how to move forward in the future.

The road behind

Just to give you an idea, the road behind us has been a sort of a speed pedelec's rollercoaster. It was spring 2014 when we travelled to China for the first time to meet the people from Higo in the neighbourhood of Shanghai. Not really knowing what to expect but with a clear goal in mind, i.e. to take Higo connectors to Europe. During our first get together, we immediately felt that we share the same kind of entrepreneurship: a long term, quality and customer minded vision with a strong innovative focus. Both of us very eager to make it happen.

Now, five years later, the drive to make it happen together is still very much there. The ascent that the European E-bike market has taken, the success of key connector ranges like the mini B series and the trust we received from many European E-bike parties, big and small, have put us in the driver's seat position within the E-bike connector market. It's there, close to engineers and their innovative designs, that we want to make the difference.

Staying in the driver's seat

There are two clear goals that we have for the future. First, we want to stay in the lead when it comes to E-bike connectors. Many of the new E-mobility designs we come across require more complicated, tailor made connections. We want to be there for you with the right solution and a short lead time. With this in mind, Higo recently expanded its production area with 32.000m². It invested heavily in the further automation of its production lines and decided to accommodate its R&D and sales department in a new location in Suzhou that is designed to quickly respond to prototype requests and to perform adequate testing.

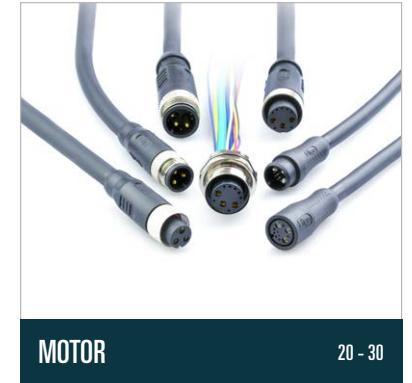
Our second goal is to stay in the driver's seat of our business and the road we're taking, so that we can remain a reliable and long term partner for our customers. That's why we keep manufacturing and ownership of the business consciously in our own hands. Higo plans to incorporate all connector related production processes, starting from the inhouse manufacturing of its own cables, tooling and the production of turned contacts until the complete assembly of connectors. By doing this, Higo becomes the only full service connector manufacturer in the E-bike market.

So our road ahead is quite ambitious as you see, and might be bumpy at times, but both Higo and A&C Solutions are confident that we are the right partner to drive you safely and successfully to your next destination.



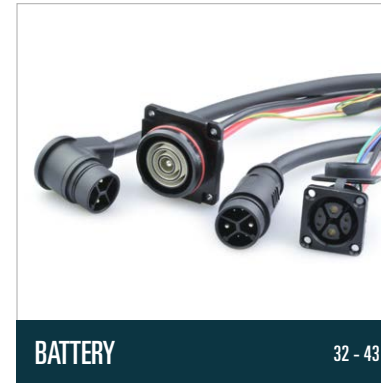
SIGNAL

6 - 19



MOTOR

20 - 30



BATTERY

32 - 43



CABLE HARNESSES

45



SPLITTERS

46 - 47



'A lot is going on in the signal connector range from Higo' comments Jannes Christiaensen, account manager within the E-mobility team at A&C Solutions.

Since the introduction of the mini B connector a couple of years ago, the range has undergone a major expansion. Back then, many engineers were trying to get their heads around the integration of a growing number of connections, i.e brakes, lighting, displays etc., into their E-bike. A compact, colour coded, waterproof connector range of 2 to 6 poles was just what the market was waiting for. It turned out to be a hit in no time.

The micro challenge

But the market continues to develop rapidly. 'We clearly see that more and more customers try to further enhance the e-bike experience by adding extra features like tracking systems, GPS, electrical locks, heat grips and even heated seats', explains Jannes. 'So along with an even more compact design, there is a need for extra connections and a higher data transmission. This trend keeps our R&D colleagues at Higo constantly focussed on creating smaller designs with an increasing number of poles so that in the end all connectors can still be nicely hidden away in e-bike frames.'

Designs for every compact need

This focus has resulted in the recent launch of three additional signal ranges, the mini and micro F connector and the micro A connector. The unique, colour coded shape of the mini/micro F connector series allows Higo to offer multipole connections from 2 up to 9 within a diameter range of 6,5mm up to 9,5mm. The 2-pole micro A is actually the smallest of its kind. With a diameter of only 4,8mm, it offers a perfect solution to any type of e-bike brakes and lighting application. 'And a 3-pole design is already on its way' Jannes adds.

A widespread market

The E-mobility market has become a widespread market with widespread needs. That's why you will see a growing number of related designs within some series. Take the mini F series for example. Besides a plug, it now also offers an angled version and a panel mount version. 'And it doesn't stop here. So do feel free to contact us with your specific request. It is our job to make sure that your E-mobility application meets the right connection', Jannes concludes.

Jannes Christiaensen



SIGNAL MINI B

8 - 9



SIGNAL MINI C

10



SIGNAL MINI E

11



SIGNAL MINI / MICRO F

12 - 15



SIGNAL MICRO A / D

16 - 17



SIGNAL MAIN PLUG

18 - 19

SIGNAL CONNECTORS MINI B PLUG



ARTICLE NUMBER BUILD-UP:

Number of poles:
2 up to 6

Cable length in mm

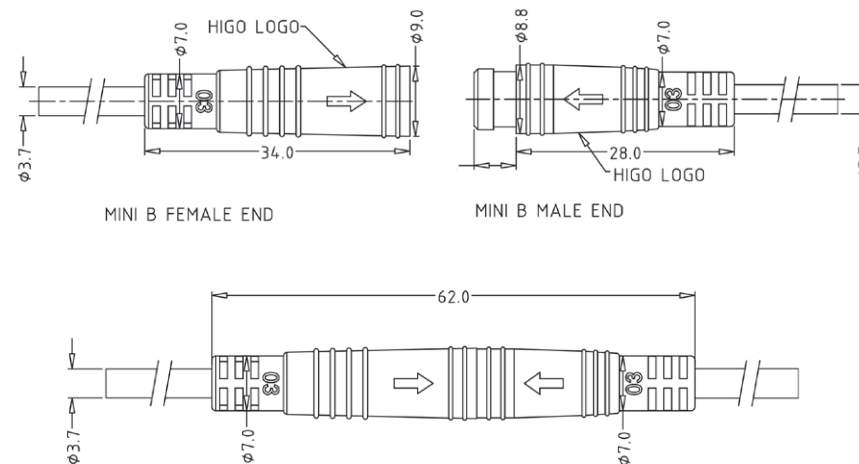
00: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

Z * 09 B * P * * * * *

M: Female
G: Male

EXTENSION CABLES:
X: Male-Female
Y: Female-Female
Z: Male-Male

A0: PVC cable 2x0,2mm²
A1: PVC cable 3x0,2mm²
A2: PVC cable 4x0,14mm²
A3: PVC cable 5x0,14mm²
A4: PVC cable 6x0,14mm²
For more options: see website



CHARACTERISTICS

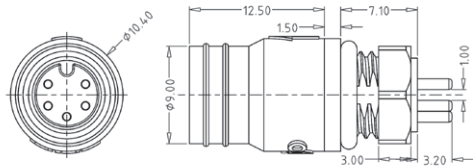
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66
Mating Cycles:	200 times
Outside Diameter:	9,0mm
Fitting Length:	62,0mm
Wire Specification:	0,14mm ² / 0,2mm ²



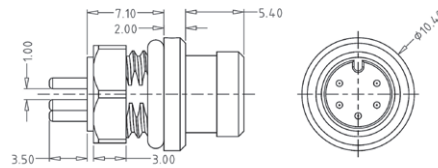
HIGO



SIGNAL CONNECTORS MINI B **PANEL MOUNT**



FEMALE END



MALE END

ARTICLE NUMBER BUILD-UP:

Number of poles:
2 up to 6

02: With solder cup contacts without wires
03: With solder cup contacts with wires
04: With straight PCB contacts

Z * 09 B * C * * * * *

M: Female
G: Male

00: No cable

Cable length in mm

CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66
Mating Cycles:	200 times
Outside Diameter:	9,0mm
Fitting Length:	62,0mm
Wire Specification:	0,14mm ² / 0,2mm ²



Cover for male:
ZX09BG

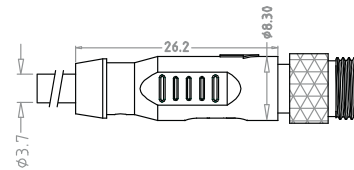
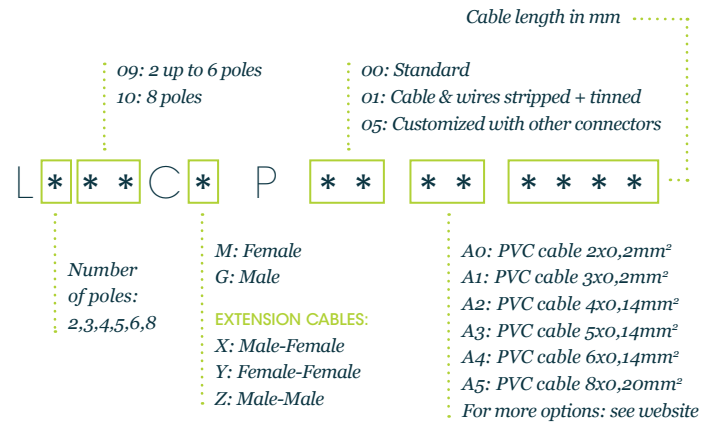
Cover for female:
ZX09BM

CONNECTOR

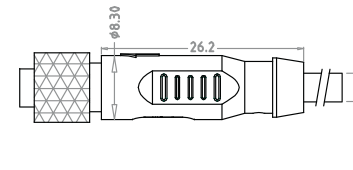
SIGNAL CONNECTORS MINI C PLUG



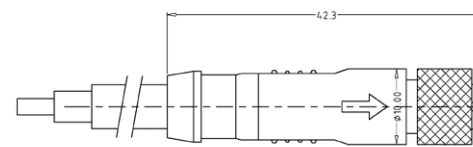
ARTICLE NUMBER BUILD-UP:



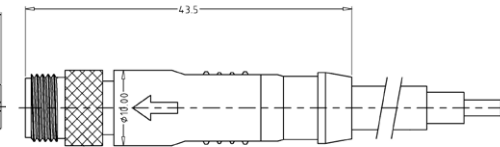
MALE END 2-6 POLE VERSION



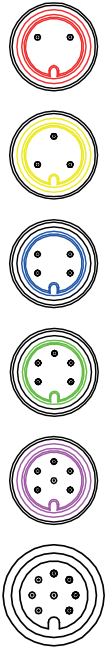
FEMALE END 2-6 POLE VERSION



FEMALE END 8- POLE VERSION



MALE END 8- POLE VERSION



CHARACTERISTICS

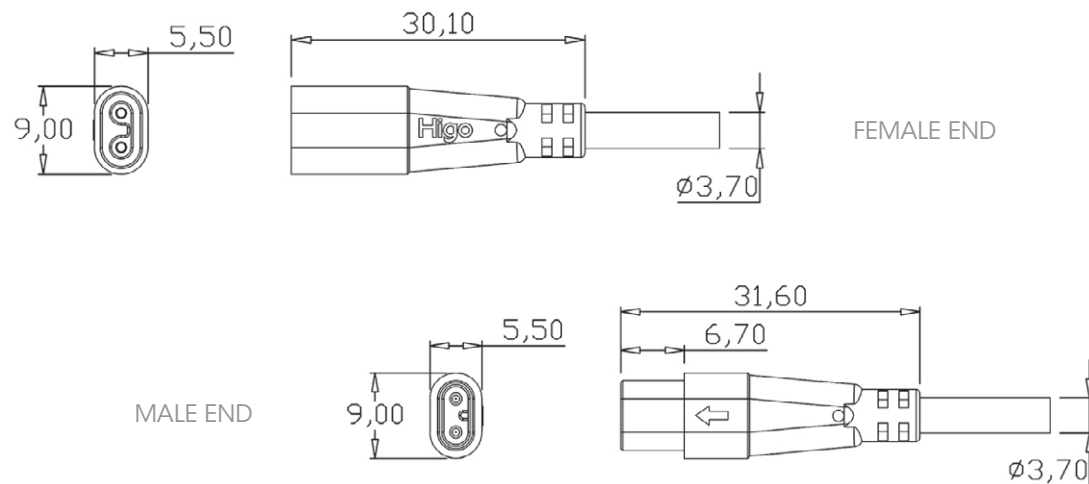
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	9,0mm
Fitting Length:	68,6mm (2-6p) / 80,0mm (8p)
Wire Specification:	0,14mm ² / 0,2mm ²



HIGO



SIGNAL CONNECTORS MINI E PLUG



ARTICLE NUMBER BUILD-UP:

Cable length in mm

D7: PVC cable 2x0,2mm²
A0: PVC cable 2x0,2mm²

Z209E * P * * * * *

M: Female
G: Male

00: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66
Mating Cycles:	200 times
Outside Diameter:	9,0mm
Fitting length:	55,0mm
Wire Specification:	0,2mm ²

CONNECTOR

SIGNAL CONNECTORS MINI F PLUG



ARTICLE NUMBER BUILD-UP:

Number of poles:
2 up to 9

Cable length in mm

oo: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

Z * 09 F * P * * * * *

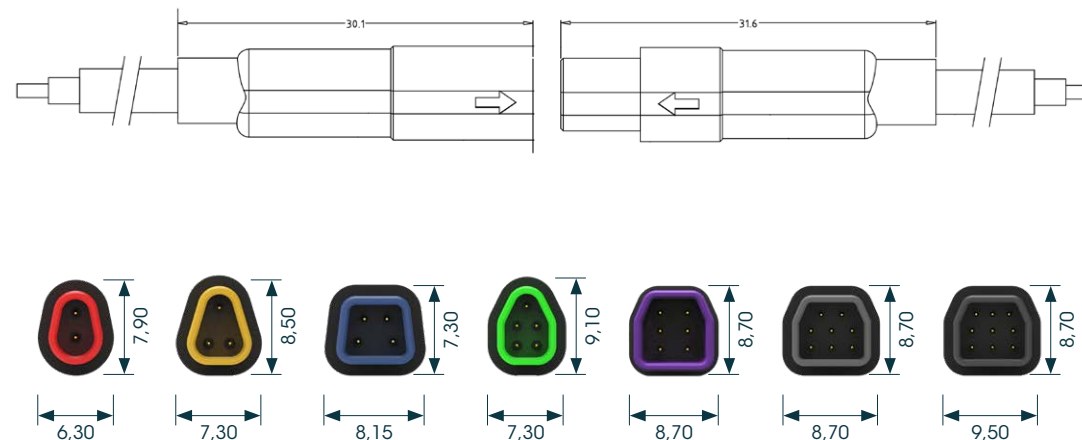
M: Female
G: Male

EXTENSION CABLES:
X: Male-Female
Y: Female-Female
Z: Male-Male

Ao: PVC cable 2 x 0,2mm²
AW: TPU cable 2 x 0,14mm²
A1: PVC cable 3 x 0,2mm²
AX: TPU cable 3 x 0,2mm²
A2: PVC cable 4 x 0,14mm²
AY: TPU cable 4 x 0,14mm²
A3: PVC cable 5 x 0,14mm²
TH: TPU cable 5x0,12mm²
A4: PVC cable 6x0,14mm²
DL: PVC cable 8x0,14mm²
DN: PVC cable 9x0,15mm²
For more options: see website

FEMALE PLUG

MALE PLUG



CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66/IP67
Mating Cycles:	200 times
Fitting Length:	55,0mm
Wire Specification:	0,12mm ² / 0,2mm ²



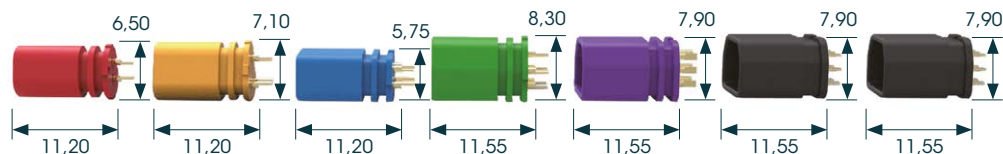
HIGO

NEW

SIGNAL CONNECTORS MINI F PANEL MOUNT



Covers for male and female connectors available from 2 to 8 poles



ARTICLE NUMBER BUILD-UP:

Number of poles:
2 up to 9

02: With solder cup contacts without wires
03: With solder cup contacts with wires
04: With straight PCB contacts

Z * 09 F * C * * 00 0000

M: Female
G: Male

00: No cable

Cable length in mm

NB Female only available in 2,3, and 8 poles
Contact our sales team for a tailor made backshell for your design

CHARACTERISTICS

Temperature Range: -25°C up to +80°C
Rated Voltage: 48V AC / 60V DC
Rated Current: 2A
Contact Resistance: ≤10mΩ
Insulation Resistance: ≥20MΩ
Protection Level: IP66/IP67
Mating Cycles: 200 times

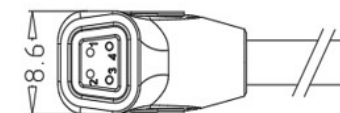
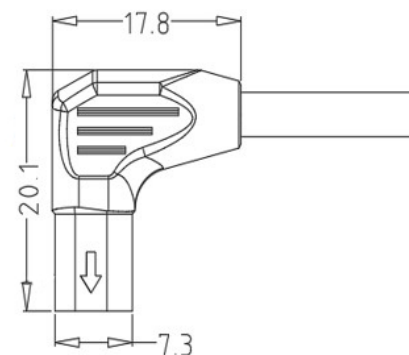
CONNECTOR

SIGNAL CONNECTORS MINI F ANGLED PLUG

NEW

ARTICLE NUMBER BUILD-UP:

Number of poles: 2 up to 9		Cable length in mm	
00: Standard			
01: Cable & wires stripped + tinned			
05: Customized with other connectors			
Z * 09 F *	A	* *	* * * *
M: Female G: Male	A: Angled plug		
EXTENSION CABLES:			
X: Male-Female		A0: PVC cable 2 x 0,2mm ²	
Y: Female-Female		AW: TPU cable 2 x 0,14mm ²	
Z: Male-Male		A1: PVC cable 3 x 0,2mm ²	
		AX: TPU cable 3 x 0,2mm ²	
		A2: PVC cable 4 x 0,14mm ²	
		AY: TPU cable 4 x 0,14mm ²	
		A3: PVC cable 5 x 0,14mm ²	
		TH: TPU cable 5x0,12mm ²	
		A4: PVC cable 6x0,14mm ²	
		DL: PVC cable 8x0,14mm ²	
		DN: PVC cable 9x0,15mm ²	
		For more options: see website	



CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66
Mating Cycles:	200 times
Outside Diameter:	8,6mm x 7,3mm
Wire Specification:	0,12mm ² - 0,2mm ²

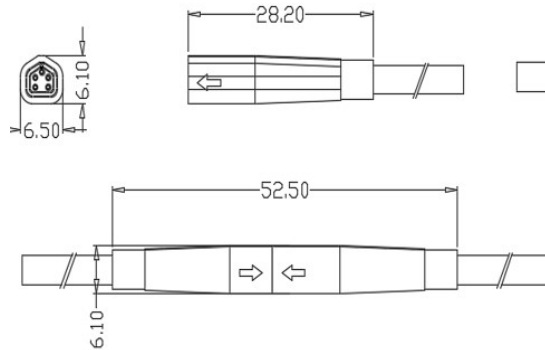


HIGO

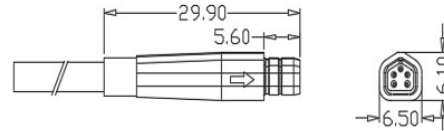
NEW

SIGNAL CONNECTORS MICRO F PLUG

FEMALE END



MALE END



ARTICLE NUMBER BUILD-UP:

00: Standard		Cable length in mm							
01: Cable & wires stripped + tinned									
05: Customized with other connectors									
Z	507F	*	P	*	*	*	*	*	*
Number of poles : 5		M: Female G: Male		A3: PVC cable 5x0,14mm² For more options: see website					

CHARACTERISTICS

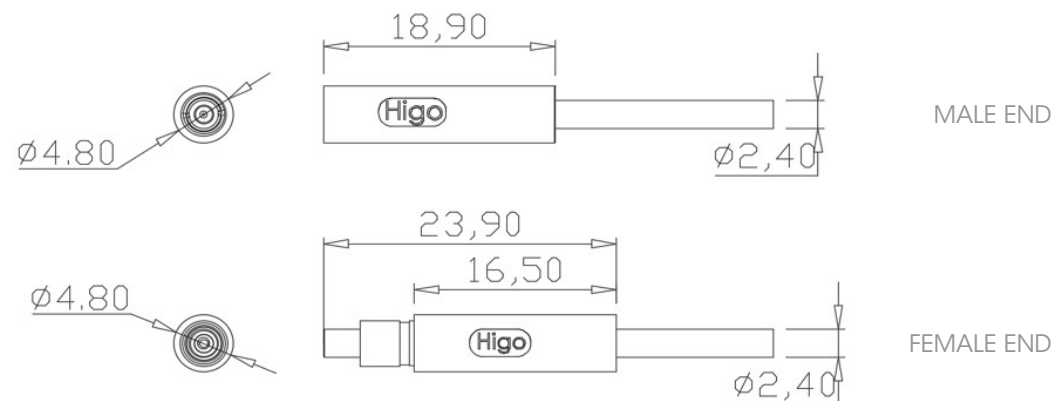
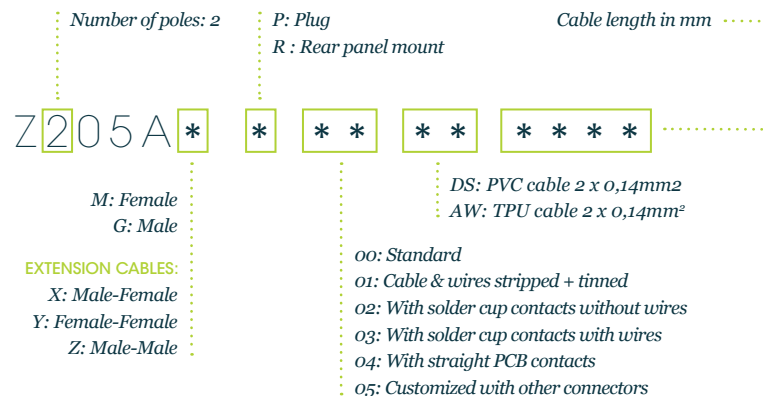
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	6,10mm x 6,50mm
Fitting Length:	52,5mm
Wire Specification:	0,14mm ²

CONNECTOR

SIGNAL CONNECTORS MICRO A **PLUG & PANEL MOUNT**

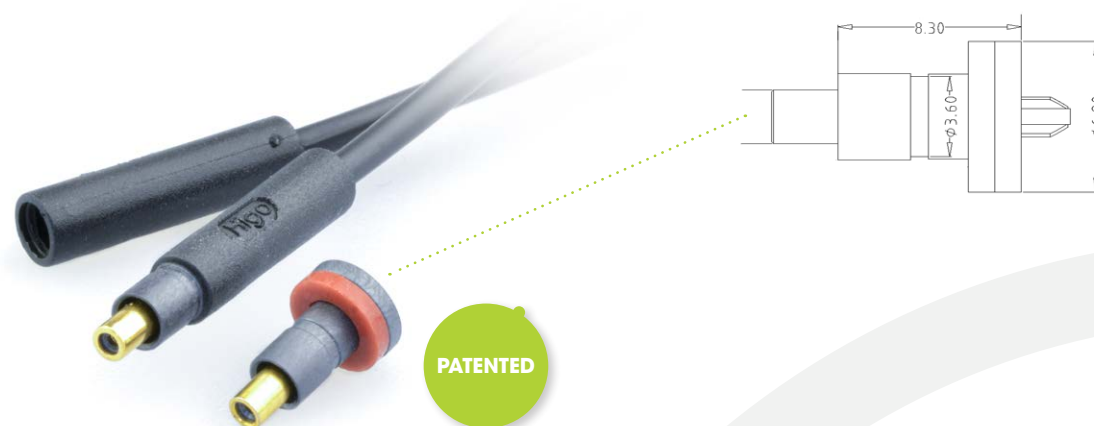
NEW

ARTICLE NUMBER BUILD-UP:



CHARACTERISTICS

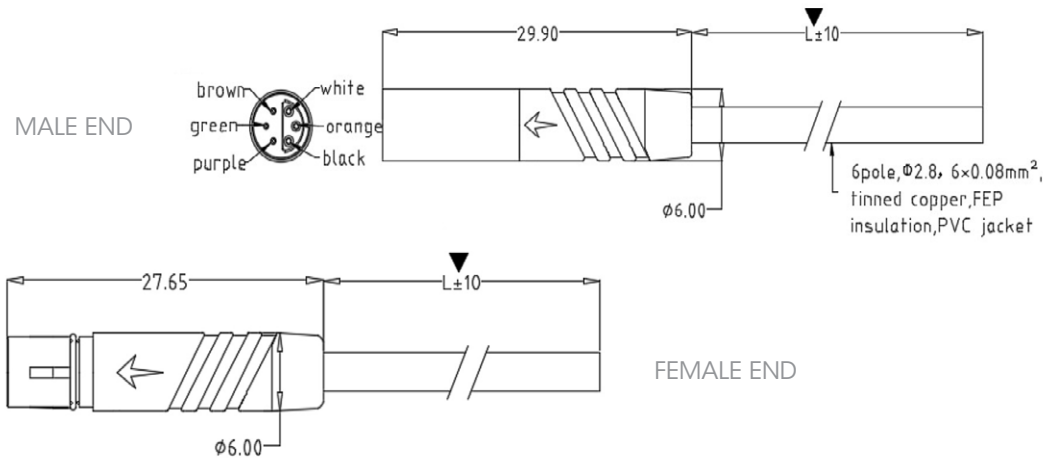
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC/DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	4,8mm
Fitting Length:	35,4mm
Wire Specification:	0,14mm ²



HIGO

NEW

SIGNAL CONNECTORS MICRO D PLUG



ARTICLE NUMBER BUILD-UP:

Number of poles: 6

Cable length in mm

00: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

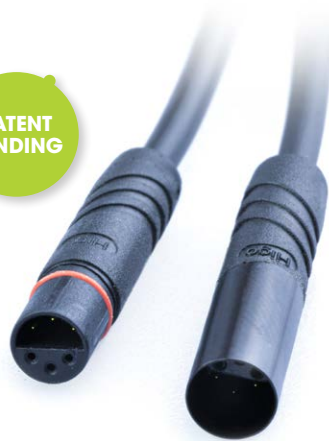
Z606D* P** ** ** *

M: Female
G: Male

EXTENSION CABLES:
X: Male-Female
Y: Female-Female
Z: Male-Male

DY: PVC cable with 6x0,08mm²

PATENT
PENDING



CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	1A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	6,0mm
Fitting Length:	50,0mm
Wire Specification:	0,08mm²

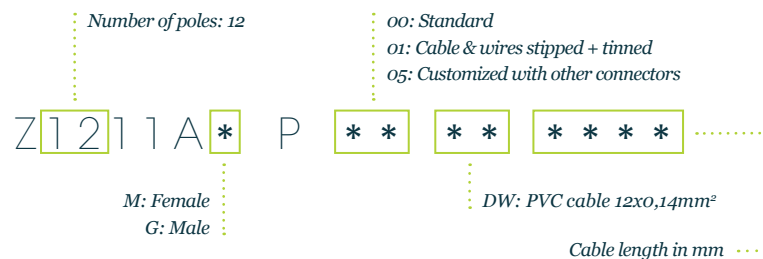
CONNECTOR

SIGNAL CONNECTORS

MAIN PLUG

NEW

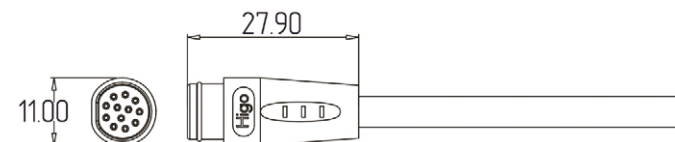
ARTICLE NUMBER BUILD-UP:



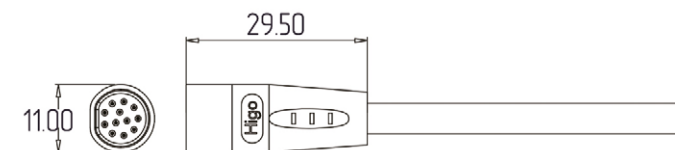
CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	11,0mm
Fitting Length:	53,0mm
Wire Specification:	0,14mm ²

FEMALE END



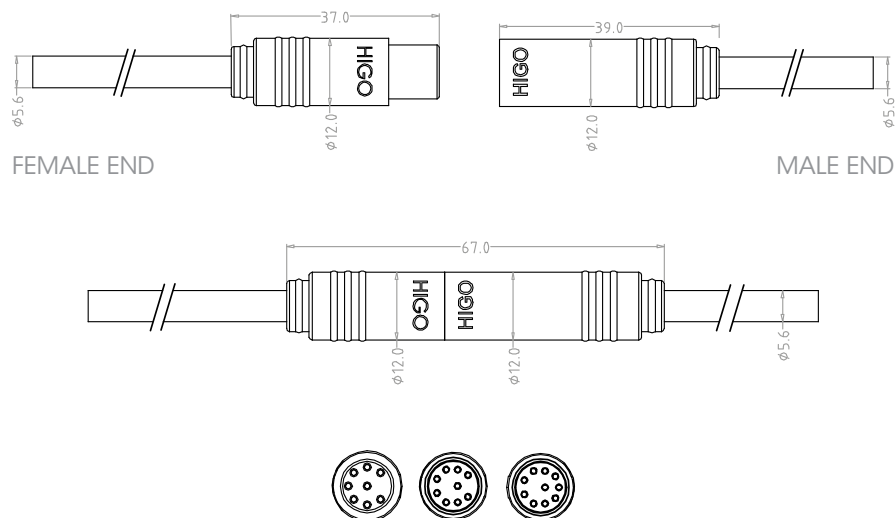
MALE END



HIGO



SIGNAL CONNECTORS **MAIN PLUG**



ARTICLE NUMBER BUILD-UP:

Number of poles: 8 up to 10		Cable length in mm			
		00: Standard 01: Cable & wires stripped + tinned 05: Customized with other connectors			
Z	*	1	2	A	*
M: Female G: Male		P			
EXTENSION CABLES: X: Male-Female Y: Female-Female Z: Male-Male		* * * * *			
		A5: PVC cable 8x0,2mm ² A6: PVC cable 9x0,2mm ² A7: PVC cable 10x0,2mm ²			

CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66
Mating Cycles:	200 times
Outside Diameter:	12,0mm
Fitting Length:	67,0mm
Wire Specification:	0,2mm ²

CONNECTOR



**'THE CIRCULAR SHAPE
OF A MOTOR CONNECTOR
NO LONGER RULES THE
MARKET'**



Kristof Van Wetering, account manager with A&C Solutions, starts off.

Circular connectors for rear hub motors have been popular for some time already. It has always been the most obvious solution for everybody. Though over time, space within motor systems became an issue. Meanwhile, also the need for more signal contacts started to arise. Kristof explains: 'We encountered more and more system builders that wanted to increase incoming and outgoing communication from the motor. The challenge for Higo was to unite both trends and to come up with smaller connector designs that offer more contacts.'

The flatter, the better

As the circular design is generally thicker, Higo has focussed its R&D efforts on creating designs that have a flatter, wider shape and that can offer at least 6 signal contacts. The result has been the launch of two new designs, the 9-pole 913B and the 10-pole 1012B connector. Both with diameters of only 11,48 and 11,75mm and a fitting length of 70,7 and 79mm. 'This means a substantial decrease in space compared to the existing circular connectors that still have a diameter of 19mm and a fitting length of 97 up to 114mm,' Kristof adds.

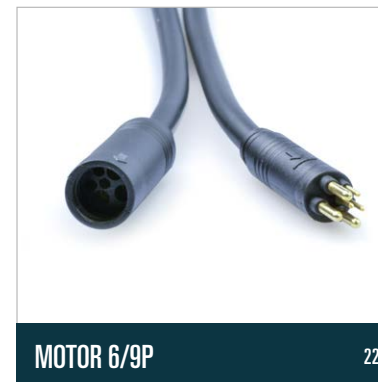
Smart alternatives

Of course, the integration of one connector per system is the preferred solution just because it's cheaper and more efficient. Though, sometimes the available space in an e-bike is so limited that even an 11 to 12mm connector doesn't fit. For situations like these, Higo now also offers a compact 3-pole power connector with a diameter of 9,8mm, the so-called Z310D. 'The Z310D can easily be combined with a 2 to 9 signal mini B/F connector of 6 to 9mm diameter. A smart, space saving solution', explains Kristof.

The circular design pushed to its limits

Solutions to go more compact with more poles also remains a hot issue within the circular range of motor connectors. Higo's R&D engineers are continuously pushing the boundaries of the circular design. In 2017, new designs like the 45A 1019A and 1119A with 10 to 11 poles within a diameter of 19mm were the crème de la crème. This year, Higo proudly presents the new Z1115A; 11 poles within just 15mm and still offering 25A! Is this absolutely the maximum achievable? 'We think so. But do keep challenging us and we will always try to go even one extra mile (read mm) further to satisfy your need', Kristof concludes with a wink.

Kristof Van Wetering



MOTOR 6/9P

22



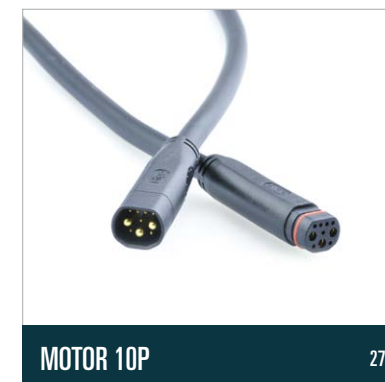
MOTOR 3P

23 - 24



MOTOR 9P

25 - 26



MOTOR 10P

27



MOTOR 11P

28



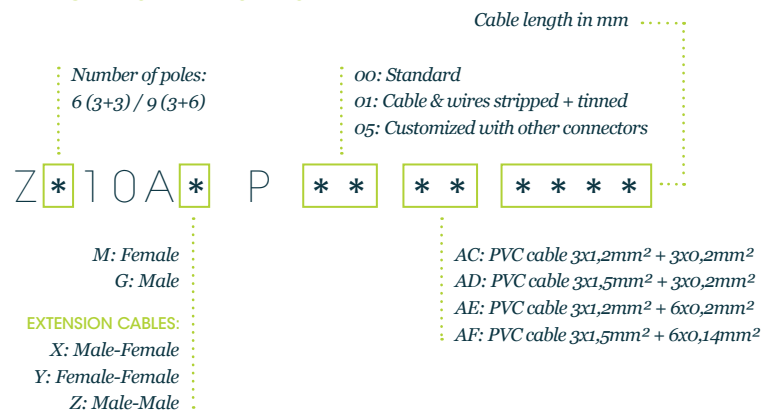
MOTOR 3 & 10P SCREW LOCKING

29 - 30

MOTOR CONNECTORS **PLUG**

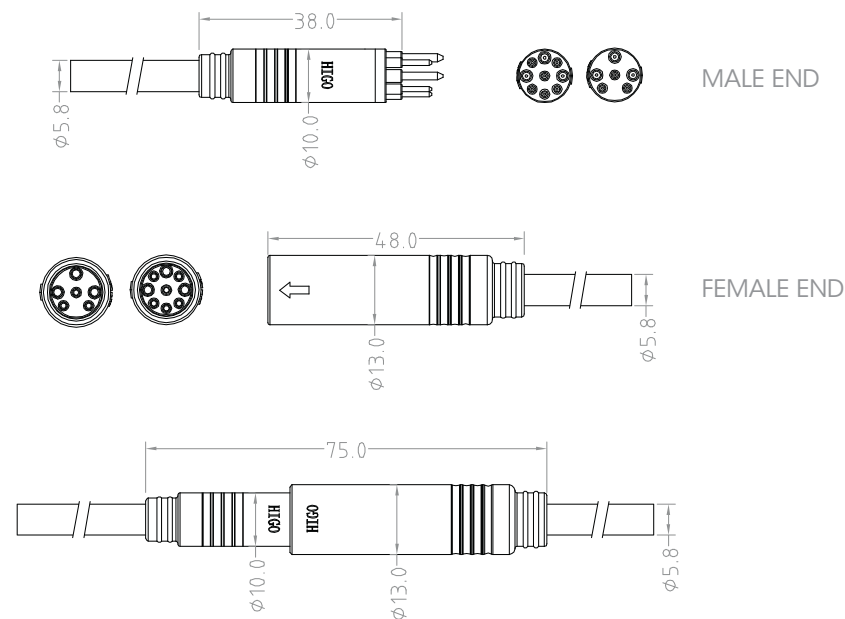


ARTICLE NUMBER BUILD-UP:



CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	15A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66
Mating Cycles:	200 times
Outside Diameter:	13,0mm
Fitting Length:	75,0mm
Wire Specification:	1,2mm ² / 1,5mm ² +0,2mm ²



HIGO



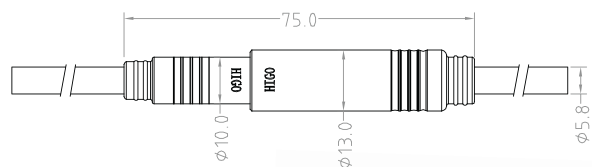
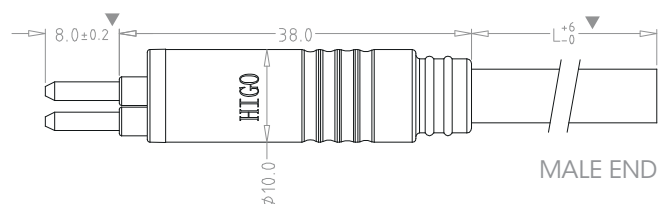
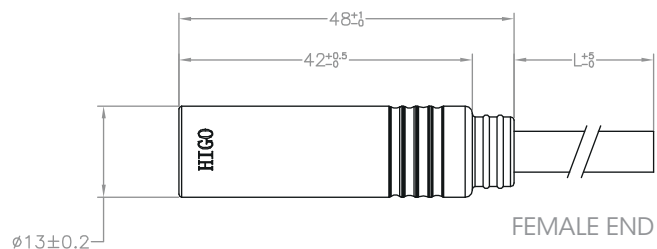
MOTOR CONNECTORS **PLUG**

ARTICLE NUMBER BUILD-UP:

Number of poles: 3		Cable length in mm			
		00: Standard			
		01: Cable & wires stripped + tinned			
		05: Customized with other connectors			
Z	3	1	0	B	*
M: Female					
G: Male					
EXTENSION CABLES:					
X: Male-Female					
Y: Female-Female					
Z: Male-Male					
		A9: PVC cable 3x1,2mm ²			
		AA: PVC cable 3x1,5mm ²			
		AB: PVC cable 3x2,0mm ²			

CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	15A / 25A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66
Mating Cycles:	200 times
Outside Diameter:	10,0mm / 13,0mm
Fitting Length:	75,0mm
Wire Specification:	1,2mm ² / 1,5mm ² / 2,0mm ²

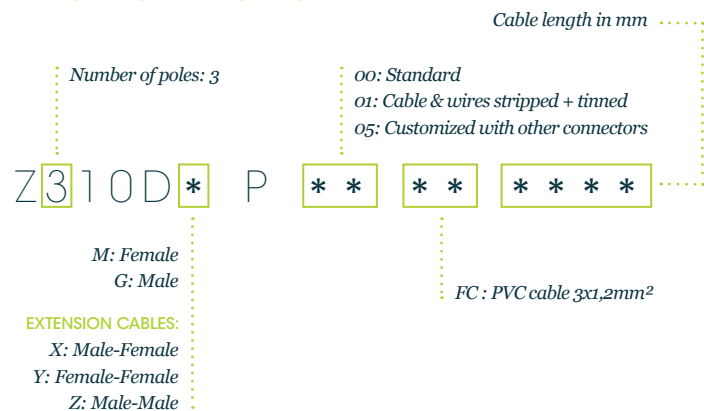


CONNECTOR

MOTOR CONNECTORS **PLUG**

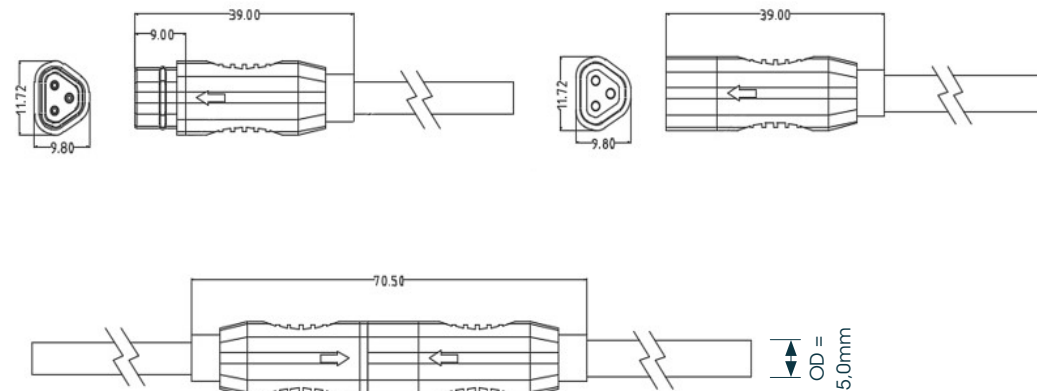
NEW

ARTICLE NUMBER BUILD-UP:



MALE END

FEMALE END



CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	15A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	11,72mm x 9,8mm
Fitting Length:	71,0mm
Wire Specification:	1,2mm ²

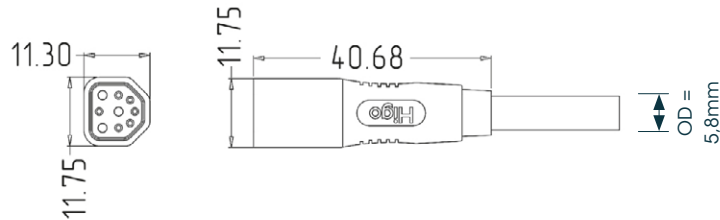


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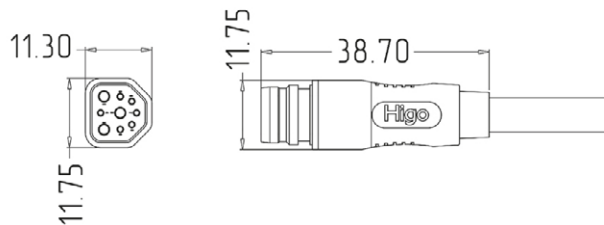
NEW

MOTOR CONNECTORS **PLUG**

MALE END



FEMALE END



ARTICLE NUMBER BUILD-UP:

Number of poles:
9 (3+6)

Cable length in mm

oo: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

Z 9 1 3 B * P * * * * *

M: Female
G: Male

EXTENSION CABLES:
X: Male-Female
Y: Female-Female
Z: Male-Male

AF: PVC cable
3x1,5mm² + 6x0,14mm²

CHARACTERISTICS

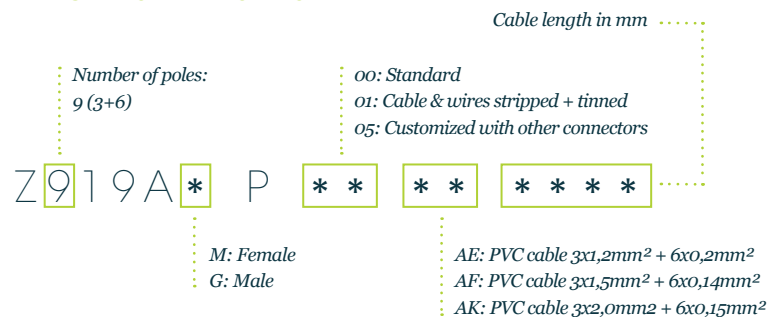
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	15A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	11,75mm x 11,30mm
Fitting Length:	70,7mm
Wire Specification:	3 x 1,5mm ² + 6 x 0,14mm ² / 3 x 1,2mm ² + 6 x 0,2mm ²

CONNECTOR

MOTOR CONNECTORS **PLUG**

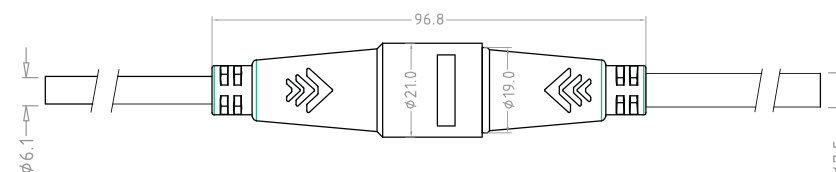
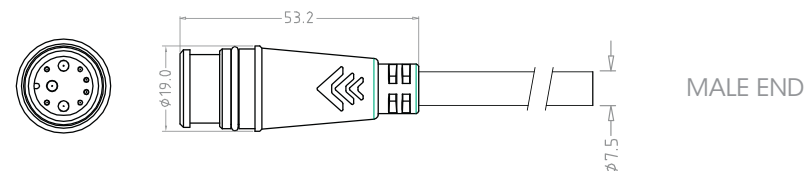
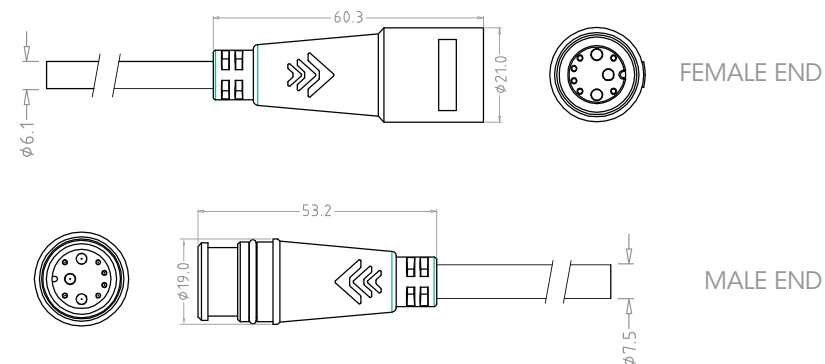


ARTICLE NUMBER BUILD-UP:



CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	45A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP66
Contact Durability:	200 times
Outside Diameter:	21,0mm
Fitting Length:	96,8mm
Wire Specification:	2,0mm ² + 0,15mm ²

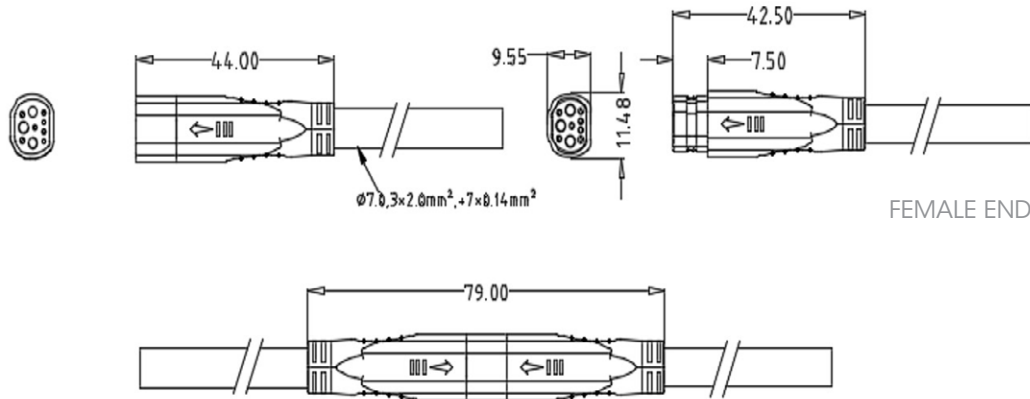


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NEW

MOTOR CONNECTORS **PLUG**

MALE END



ARTICLE NUMBER BUILD-UP:

Number of poles: 3+7

Cable length in mm

00: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

Article Number: Z1012B*P***

M: Female
G: Male

EXTENSION CABLES:
X: Male-Female
Y: Female-Female
Z: Male-Male

FB: PVC cable
3x2,0mm²+7x0,14mm²

CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	20A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	11,48mm x 9,55mm
Fitting Length:	79,0mm
Wire Specification:	3 x 2,0mm ² + 7 x 0,14mm ² / 3 x 1,5mm ² + 7 x 0,14mm ²

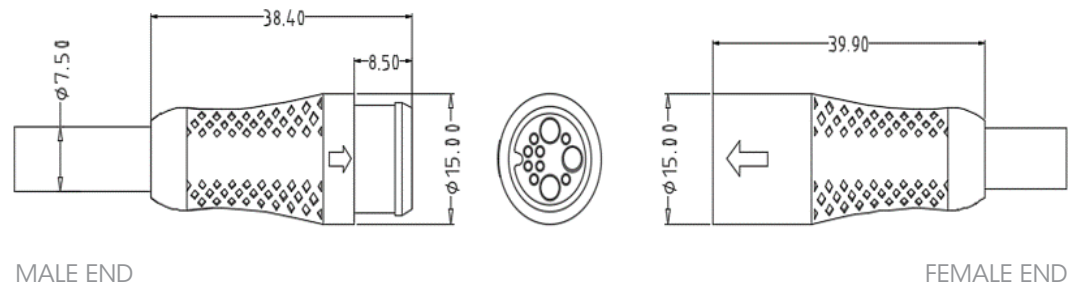
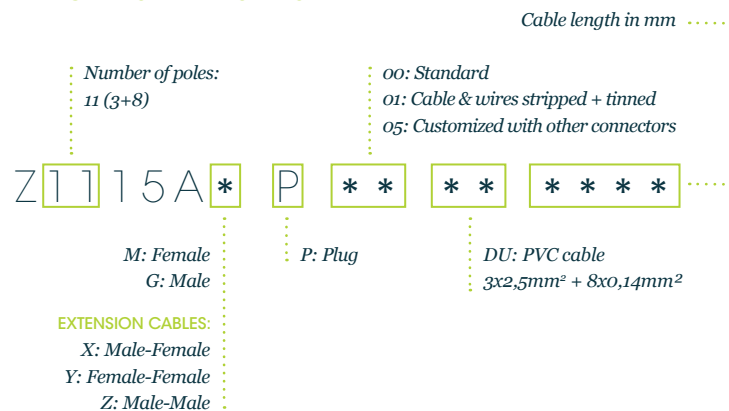
CONNECTOR



MOTOR CONNECTORS **PLUG**

NEW

ARTICLE NUMBER BUILD-UP:



CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	25A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	15,0mm
Fitting Length:	70,0mm
Wire Specification:	3 x 2,5mm ² + 8 x 0,14mm ²



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MOTOR CONNECTORS **PLUG**

ARTICLE NUMBER BUILD-UP:

Number of poles: 3

00: Standard

01: Cable & wires stripped + tinned

05: Customized with other connectors

L315A* P** ** ****

M: Female

G: Male

B8: PVC cable 3x4,0mm²

EXTENSION CABLES:

X: Male-Female

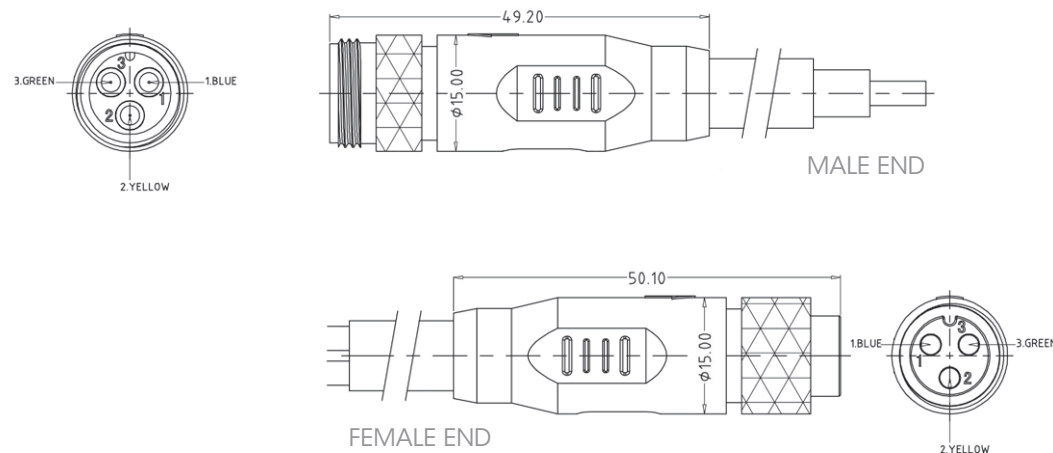
Y: Female-Female

Z: Male-Male

Cable length in mm

CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	45A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	15,0mm
Fitting Length:	90,0mm
Wire Specification:	3 x 4,0mm ²

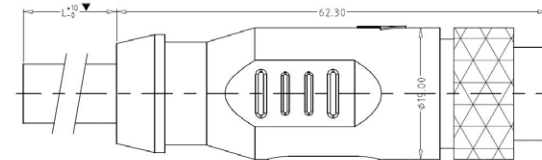
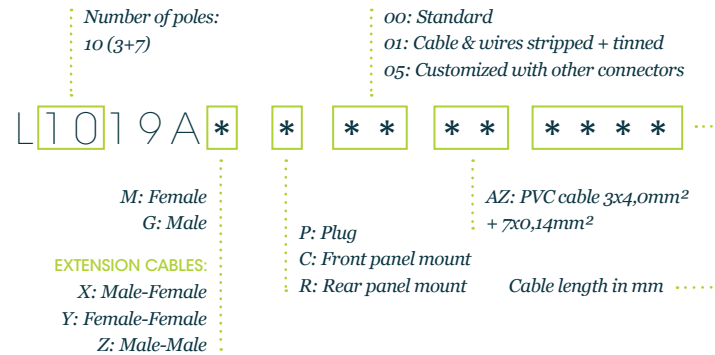


CONNECTOR

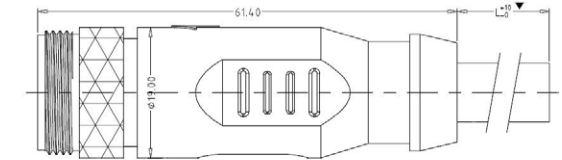
MOTOR CONNECTORS PLUG / PANEL



ARTICLE NUMBER BUILD-UP:

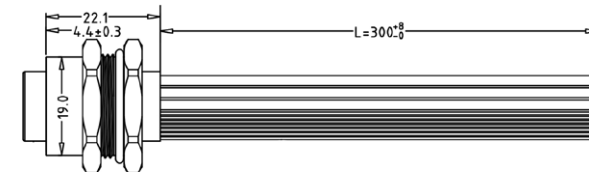


FEMALE END



MALE END

FEMALE REAR PANEL MOUNT



CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	45A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	19,0mm
Fitting Length:	114,0mm
Wire Specification:	3 x 4,0mm ² + 7 x 0,14mm ²



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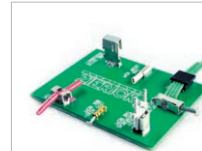


YAMAICHI

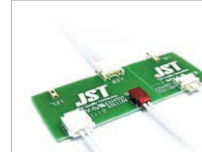


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ILME



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HUMMEL

TAILOR MADE SOLUTIONS



CABLE ASSEMBLIES



"The main difference between the development of signal and battery connectors is really who is in the lead", begins Franky Vanlerberghe, CEO of A&C Solutions."

Although the kind of application, i.e. brakes, lighting, displays etc., where signal connectors are designed for might vary a lot, the type of connector and power that customers need are often the same. Therefore, Higo mostly takes the lead in the development of next level signal designs. "With battery connectors, it doesn't work like that", explains Franky.

The power of customization makes the difference

"We are lucky to meet so many interesting E-mobility entrepreneurs working on unique designs every day. The battery, and therefore also the connector that goes along with this design, needs to be perfectly integrated into the concept. In 90% of the cases, this results in a customized battery connector", Franky comments.

Why? "Because there are a lot of variables that make up the right connection when it comes to batteries. The required number, combination (power & signal) and type of contacts (circular or blade contacts*); the design of the battery; how it's built-up and integrated into the bike; the desired power range and of course whether it's meant for charging or discharging, to name a few. Fortunately, with many of our customers we get involved in an early development stage. This enables us together with Higo's R&D engineers to combine all of these variables into a battery connector made-to-measure."

Similar approach to new development

This doesn't mean that Higo steps back from developing standard battery connectors. There is also a large part of the market that requires mainstream charging connectors up to 15A. It's here that Higo tries to follow the same approach as we see with signal and motor connectors. Franky: "Most new developments therefore revolve around alternative shapes to achieve more compact connectors. Examples of such designs are the Z610C and Z913C with diameters from 10 to 13mm."

High-end solution for controller units

"There where we feel we can step up, we challenge ourselves to come up with more professional and reliable solutions", Franky continues. "The launch of the Z216A plug perfectly fits this context." The Z216A is a high-end two pin battery connector with IP67 protection especially designed for controller unit manufacturers. It replaces the single pole contacts still often used for these kind of applications.

2019 eye-catcher

The absolute eyecatcher in the battery range, if not the complete Higo range, is by far the Z642B panel mount connector. This new design not only has the looks to make it, it also has the power (40A) to be the perfect fit for heavy applications like electrical scooters that already fill the streets all over China every day. A nice extra feature that this connector offers, is that it remains connected even when the battery is placed in a frequently moving environment. In this case, a reliable connector like the Z642B is indispensable.

Enjoy exploring the complete range!

Franky Vanlerberghe

**blade contacts are flat contacts for a sharp angled placement of the battery onto the bike*



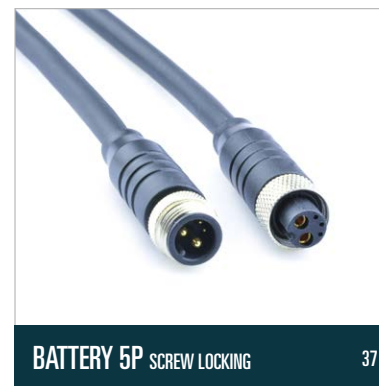
BATTERY 2P

34 - 35



BATTERY 4P

36



BATTERY 5P SCREW LOCKING

37



BATTERY 6P

38 - 42



BATTERY 9P

43

48V BATTERY CONNECTORS

NEW

ARTICLE NUMBER BUILD-UP:

Z216A* P ** ** ****

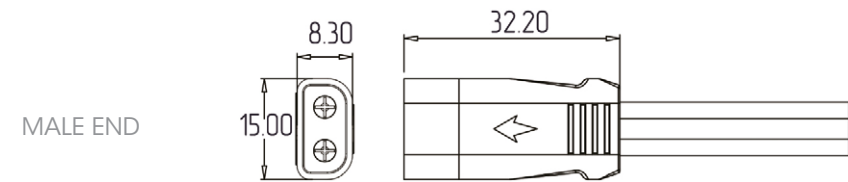
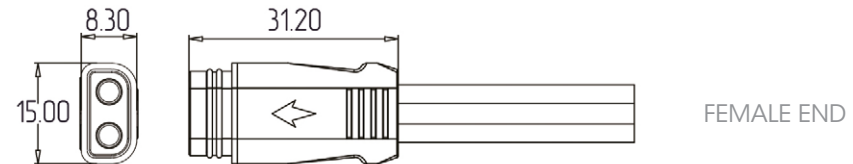
*M: Female
G: Male*

EXTENSION CABLES:
X: Male-Female
Y: Female-Female
Z: Male-Male

*00: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors*

Cable length in mm

FD : PVC flat cable 2x2,0mm²



CHARACTERISTICS

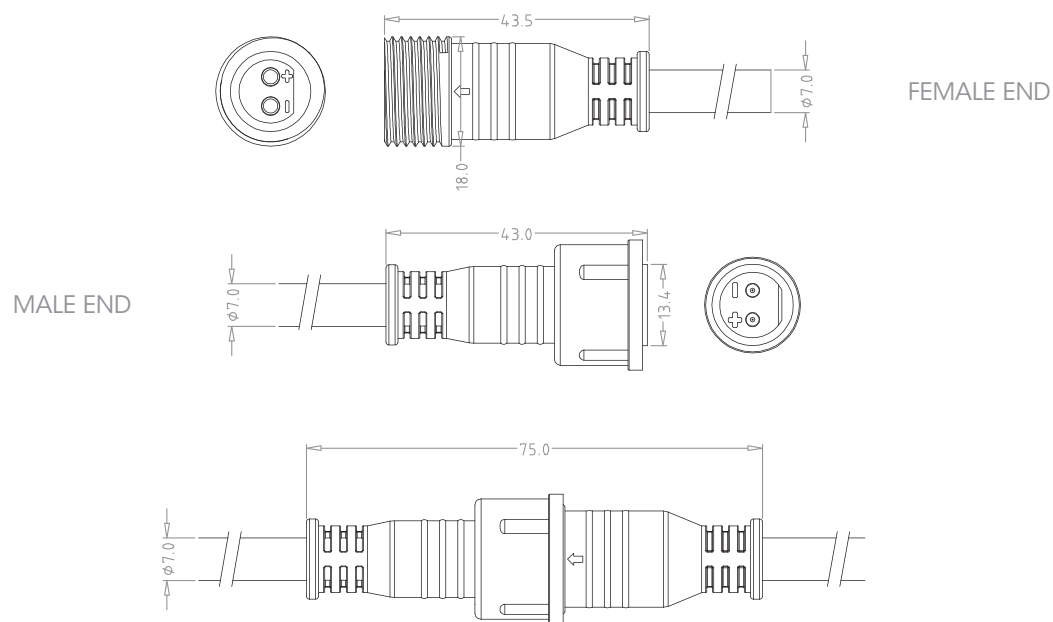
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	25A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	15,0mm x 8,30mm
Fitting Length:	51,0mm
Wire Specification:	2,0mm ²



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48V BATTERY CONNECTORS



ARTICLE NUMBER BUILD-UP:

L218A* P ** ** * * * *

M: Female
G: Male

00: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

AM: PVC cable 2x2,5mm²
Cable length in mm

CHARACTERISTICS

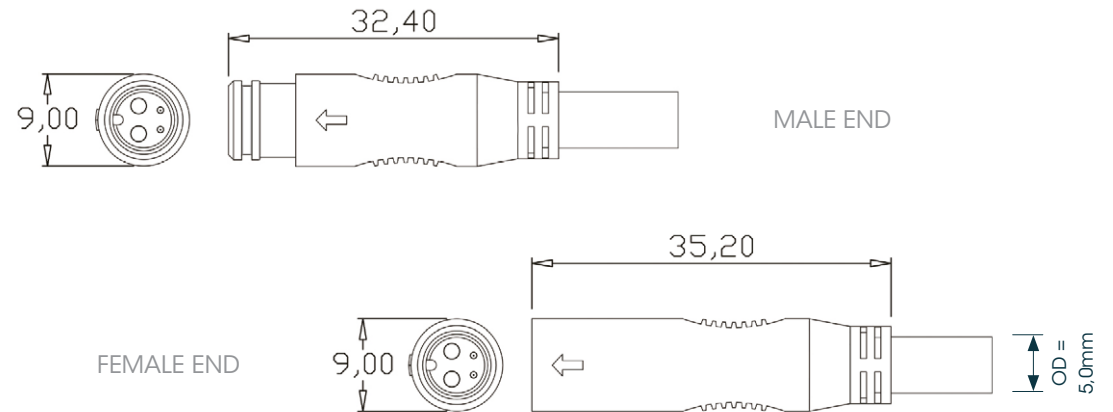
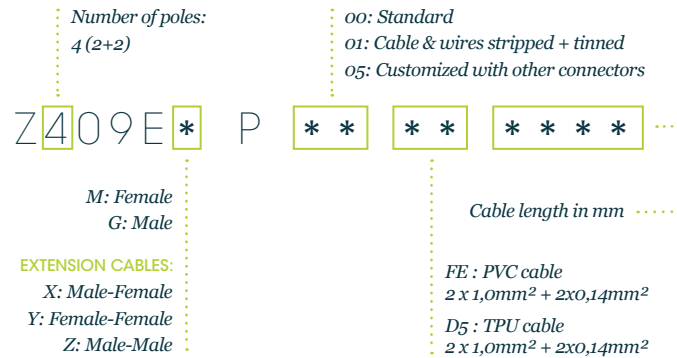
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	25A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Terminal Material:	Copper Alloy (Gold or Silver Plated)
Protection Level:	IP67
Contact Durability:	200 times
Outside Diameter:	19,0mm
Fitting Length:	75,0mm
Wire Specification:	2,5mm ²

CONNECTOR

48V BATTERY CONNECTORS

NEW

ARTICLE NUMBER BUILD-UP:



CHARACTERISTICS

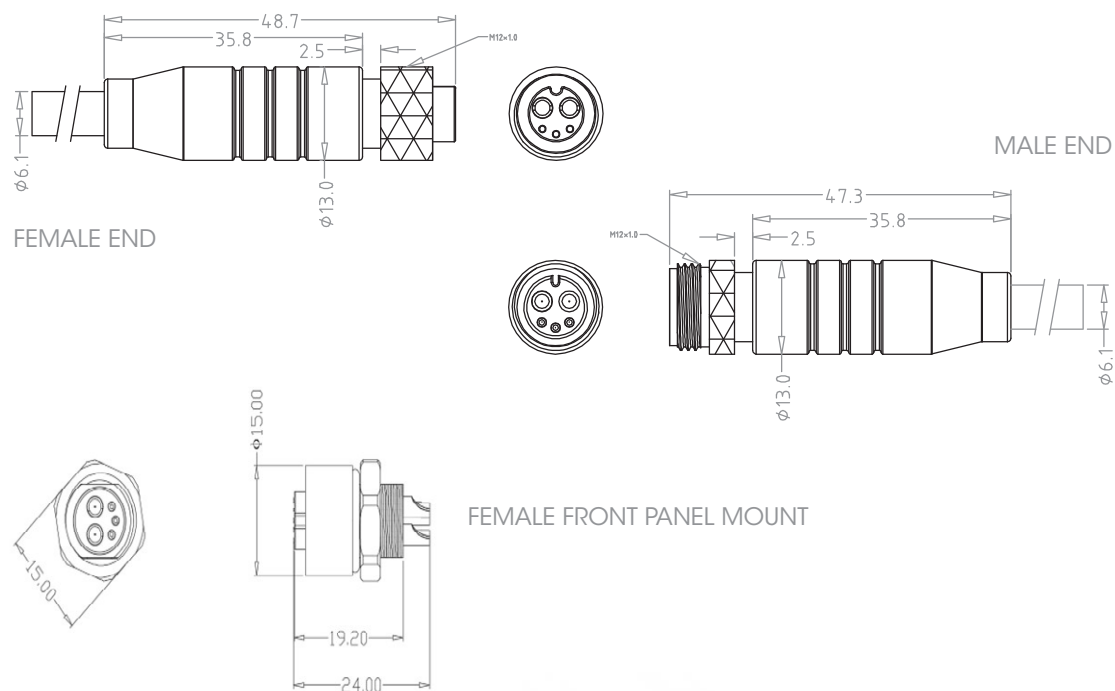
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	10A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	9,0mm
Fitting Length:	61,0mm
Wire Specification:	2 x 1,0mm ² + 2 x 0,14mm ²



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48V BATTERY CONNECTORS



ARTICLE NUMBER BUILD-UP:

Number of poles:
5 (2+3)

L 5 1 3 A *

M: Female
G: Male

EXTENSION CABLES:
X: Male-Female
Y: Female-Female
Z: Male-Male

00: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

* * * * *

P: Plug
C: Panel Mount

Cable length in mm

AT: PVC cable 2x1,5mm² + 3x0,2mm²
BO: PVC cable 2x2,0mm² + 3x0,2mm²

CHARACTERISTICS

Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	25A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating cycles:	200 times
Outside Diameter:	13,0mm
Fitting length:	96,0mm
Wire Specification:	1,5mm ² + 0,2mm ² / 2,0mm ² + 0,2mm ²

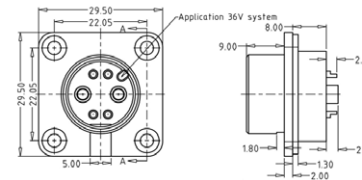
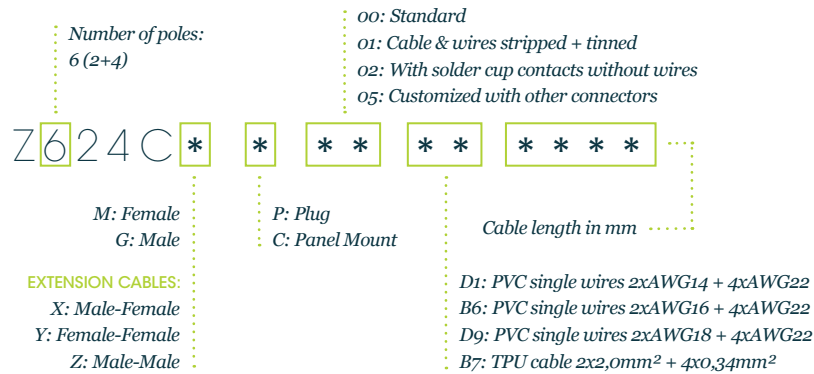
CONNECTOR

36V BATTERY CONNECTORS

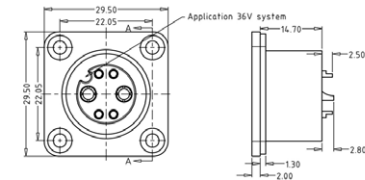


ARTICLE NUMBER BUILD-UP:

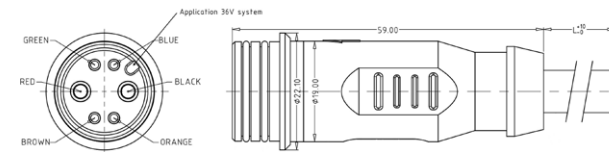
(Coding only for 36v applications)



MALE PANEL MOUNT



FEMALE PANEL MOUNT



MALE PLUG

CHARACTERISTICS

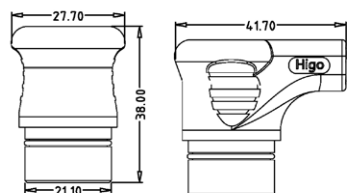
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	40A / 5A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	3000 times
Outside Diameter:	19,0mm (P) / 29,5mm (C)



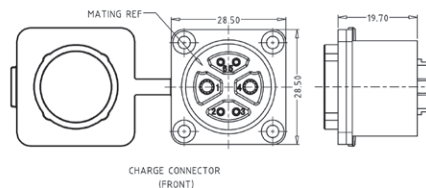
HIGO



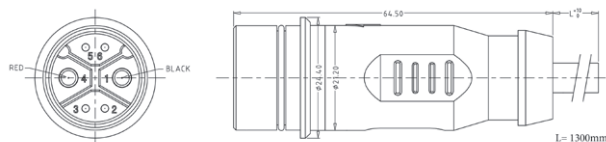
48V BATTERY CONNECTORS



MALE ANGLED PLUG



FEMALE PANEL MOUNT



MALE PLUG



ARTICLE NUMBER BUILD-UP: (Coding only for 48v applications)

Number of poles:
6 (2+4)

- 00: Standard
- 01: Cable & wires stripped + tinned
- 02: With solder cup contacts without wires
- 03: with solder cup contacts with wires
- 05: Customized with other connectors

Z 6 2 4 B * * * * *

M: Female
G: Male

P: Plug
C: Panel Mount
A: Angled Plug

Cable length in mm

EXTENSION CABLES:

X: Male-Female
Y: Female-Female
Z: Male-Male

- D1: PVC single wires 2xAWG14 + 4xAWG22
- B6: PVC single wires 2xAWG16 + 4xAWG22
- D9: PVC single wires 2xAWG18 + 4xAWG22
- B7: TPU cable 2x2,0mm² + 4x0,34mm²

CHARACTERISTICS

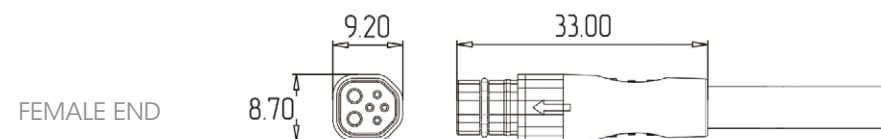
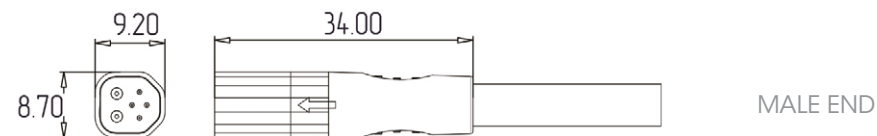
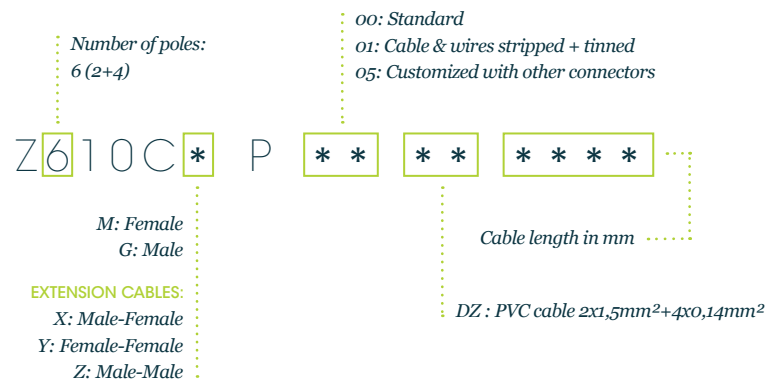
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	40A / 5A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	3000 times
Outside Diameter:	21,2mm (P) / 28,5mm (C)

CONNECTOR

48V BATTERY CONNECTORS

NEW

ARTICLE NUMBER BUILD-UP:



CHARACTERISTICS

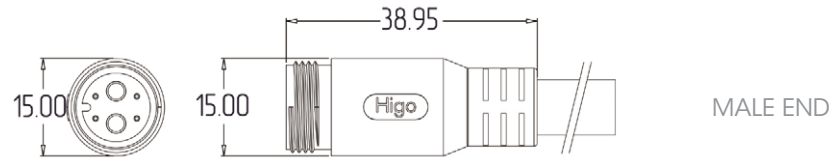
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	15A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside Diameter:	8,70mm x 9,20mm
Fitting length:	59,0mm
Wire Specification:	2 x 1,5mm ² + 4 x 0,14mm ²



HIGO

NEW

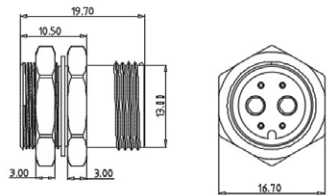
48V BATTERY CONNECTORS



MALE END



FEMALE END



MALE FRONT PANEL MOUNT



ARTICLE NUMBER BUILD-UP:

Number of poles: 6(2+4)		00: Standard 01: Cable & wires stripped + tinned 02: With solder cup contacts without wires 03: with solder cup contacts with wires 05: Customized with other connectors	
L615A*	*	**	**
M: Female G: Male	P: Plug C: Panel Mount	Cable length in mm	
EXTENSION CABLES: X: Male-Female Y: Female-Female Z: Male-Male		DC: PVC cable 2x4,0mm ² + 4x0,2mm ² DR : PVC single wires 2x4,0mm ² +4x0,2mm ²	

CHARACTERISTICS

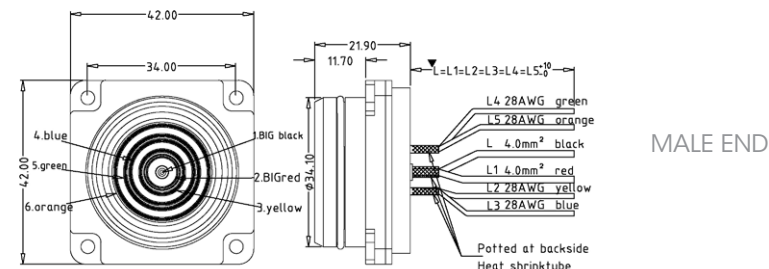
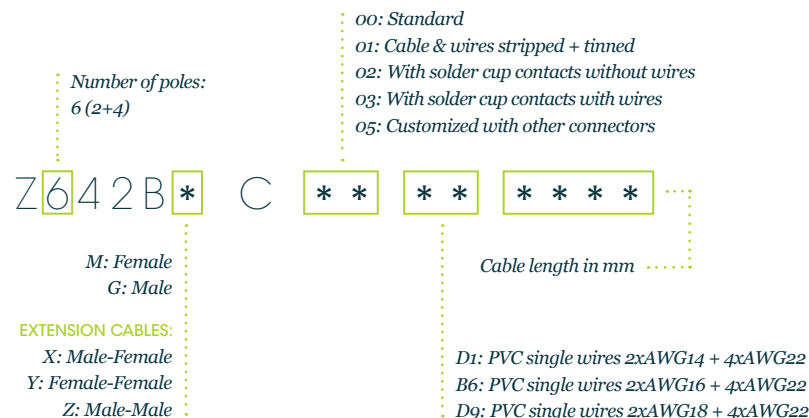
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC/ 60V DC
Rated Current:	45A / 2A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IP67
Mating Cycles:	200 times
Outside diameter:	15,0mm
Fitting length:	77,5mm
Wire Specifications:	2 x 4,0mm ² / 4 x 0,2mm ²

CONNECTOR

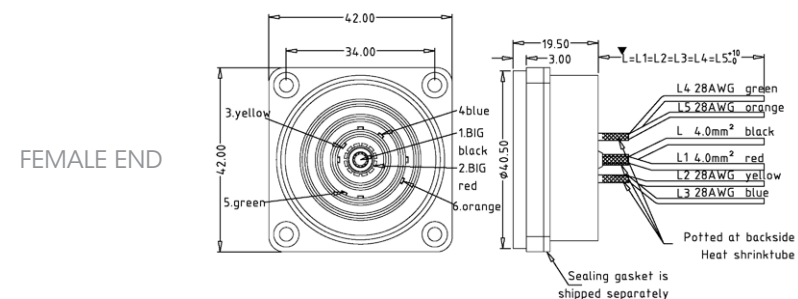
48V BATTERY CONNECTORS

NEW

ARTICLE NUMBER BUILD-UP:



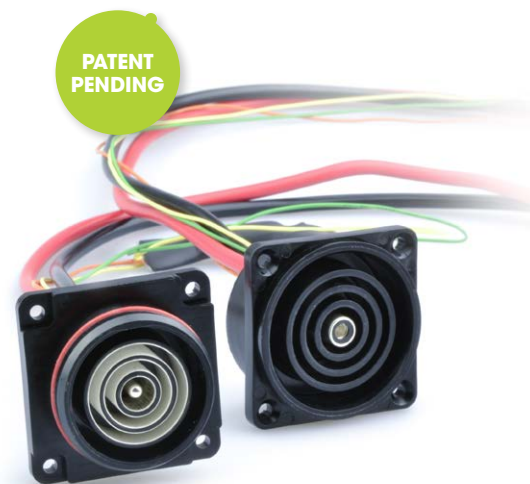
MALE END



FEMALE END

CHARACTERISTICS

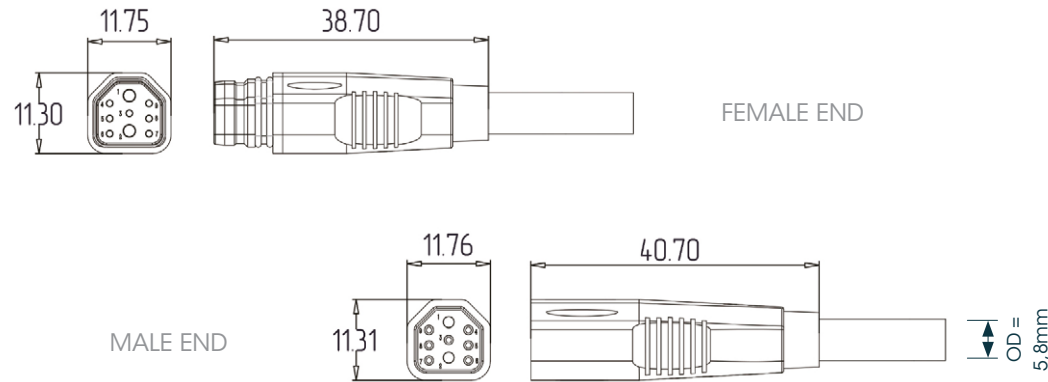
Temperature Range:	-25°C up to +80°C
Rated Voltage:	48V AC / 60V DC
Rated Current:	40A / 5A
Contact Resistance:	≤10mΩ
Insulation Resistance:	≥20MΩ
Protection Level:	IPX7
Mating Cycles:	200 times
Outside diameter:	47,0mm x 42,0mm
Fitting length:	30,0mm
Wire Specification:	2 x 4,0mm² / 4 x 0,08 ~ 1,0mm²



HIGO

NEW

48V BATTERY CONNECTORS



ARTICLE NUMBER BUILD-UP:

Number of poles:
9 (2+7)

oo: Standard
01: Cable & wires stripped + tinned
05: Customized with other connectors

Z913C* P ** ** *

M: Female
G: Male

EXTENSION CABLES:
X: Male-Female
Y: Female-Female
Z: Male-Male

Cable length in mm

FA : PVC cable 2x1,5mm²+7x0,15mm²

CHARACTERISTICS

Temperature Range: -25°C up to +80°C

Rated Voltage: 48V AC / 60V DC

Rated Current: 15A / 2A

Contact Resistance: ≤10mΩ

Insulation Resistance: ≥20MΩ

Protection Level: IP67

Mating Cycles: 200 times

Outside diameter: 11,31mm x 11,76mm

Fitting length: 71,0mm

Wire Specification: 2 x 1,5mm² + 7 x 0,15mm²

CONNECTOR



CABLE HARNESSES

45



SPLITTERS

46 - 47

CABLE HARNESSES



When you need to design your connector into a cable assembly, A&C Solutions can provide you with an interesting alternative to do this in-house at attractive conditions.

A&C Solutions works with various, certified (ISO9001) production locations in Eastern Europe and China. These plants are specialised in cable assemblies and are fully equipped with the latest technology to ensure optimal cost-efficiency.

Being a connector distributor, A&C Solutions is able to offer you the best match in custom assembly because it has:

- the stock
- the right knowledge
- the right connector tooling
- and the best price

This means that by assembling your connector with A&C Solutions, you will decrease your direct- and indirect costs substantially and at the same time you are assured that your connector is assembled according to your specifications.

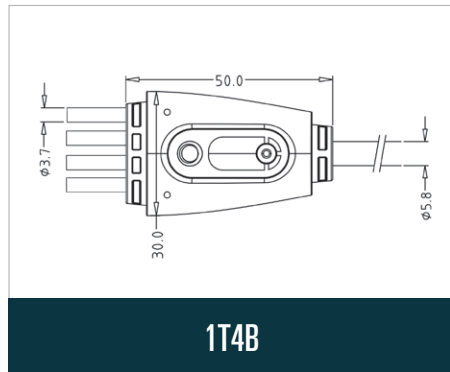
Production site



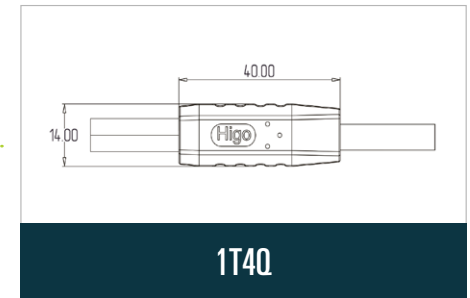
SPLITTERS



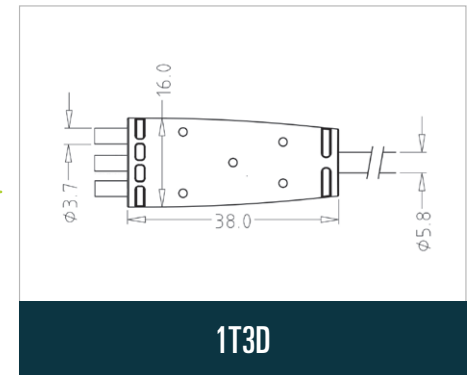
A&C Solutions offers a wide range of possibilities when it comes to customized splitters. Splitters are mainly used for the parallel circuiting of signals to other e-bike parts. But they can also simplify the wiring diagram which accelerates the actual installation process. Higo makes the installation process of splitters even more easy by working with color-coded signal connectors to prevent any wiring errors from happening.



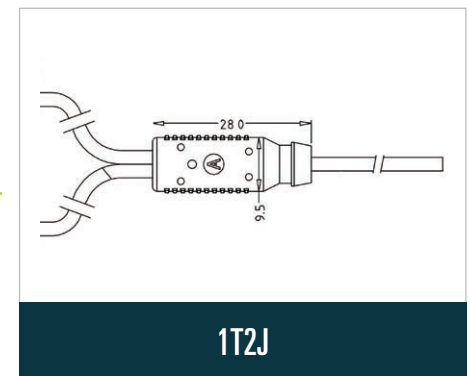
1T4B



1T4Q



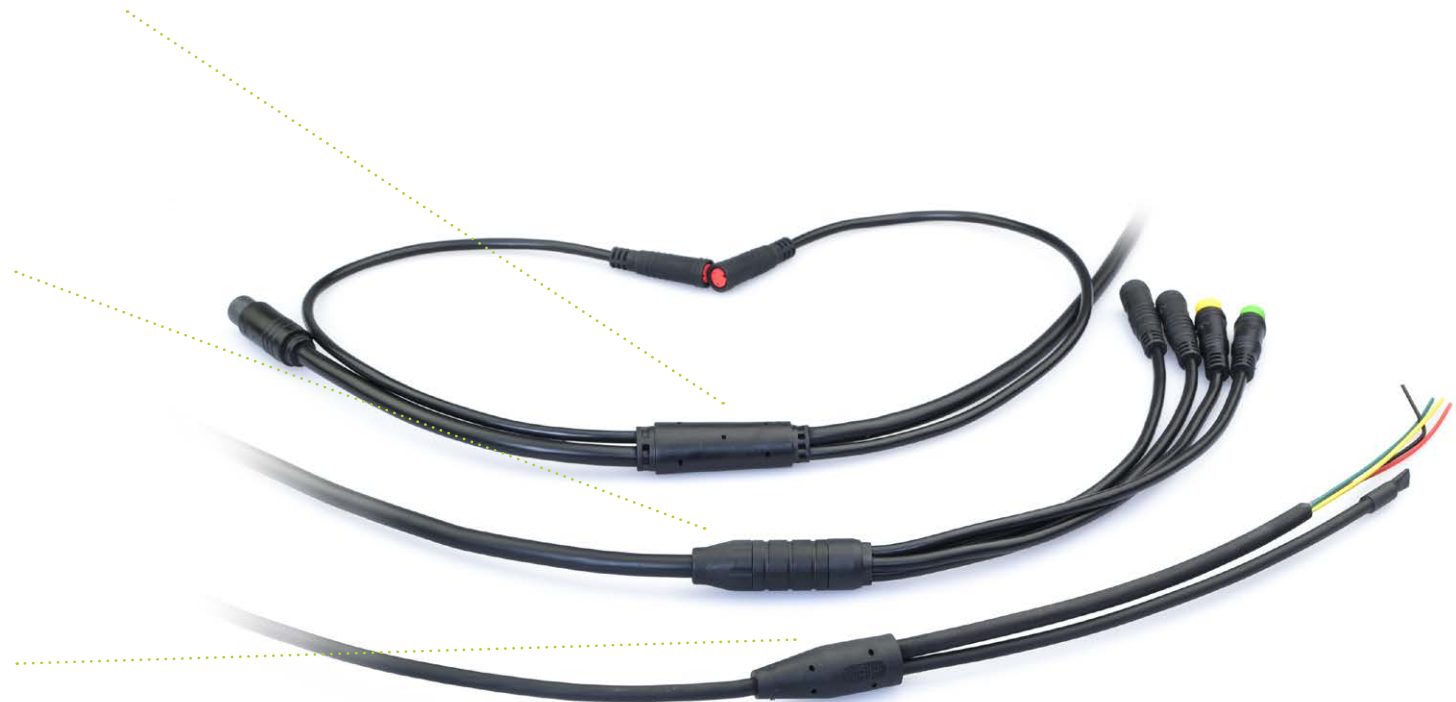
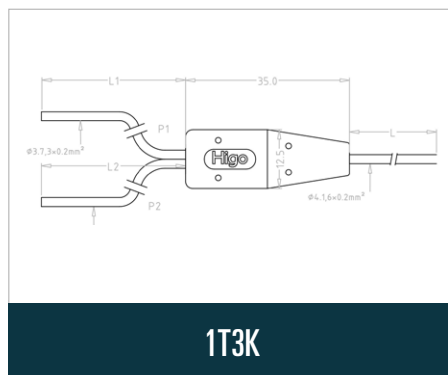
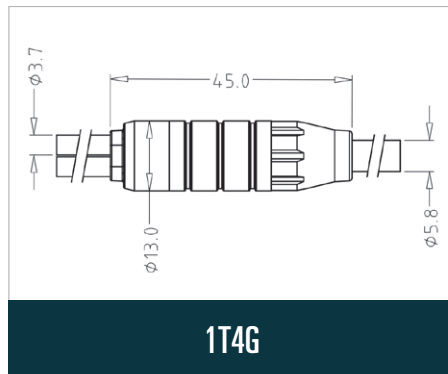
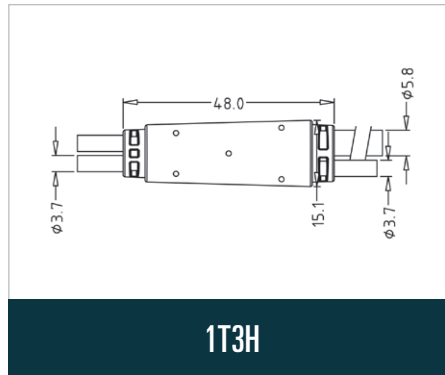
1T3D



1T2J

SPLITTERS

Any kind of e-mobility splitter can be fully designed around each customer's requirements. It is up to the customer to determine the cable length, the cable type (Teflon, PVC or TPU) and the level of finishing (crimped, stripped or with a different contact) needed for the application.



CONNECTORS



HIGO



HUMMEL



TECHNO



YAMAICHI



JST



ZIERICK



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If you require more information, **please contact us.**



SOLUTIONS

CONNECTOR - POWER SUPPLY - ASSEMBLY

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