

User Guide

POLYPM HD

Centralising System



Compatible with **SpeedFitter** for Windows

Due to technological advances, the manufacturer reserves the right to modify the characteristics of this product without notice

1. POLYPM HD

Safety and precautions

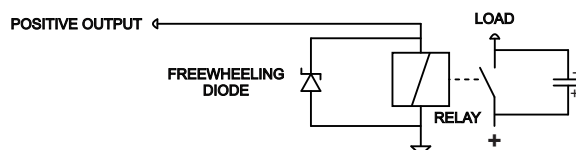
The safety of future users of this product depends on your installation. Therefore, it is critical that you read, understand, and follow all instructions contained in this installation guide.

Some instructions and precautions that must be applied are listed below (see page 3 too) :

- ☞ To install this equipment correctly, it is essential to have the understanding and the technical skills for the installation of automobile electronics.
- ☞ Place this installation guide in a safe place and refer to it when necessary and for each installation. This manual must be delivered to the end user.
- ☞ Before wiring, disconnect the cable from the negative battery terminal. Failure to do so may result in electric shock or injury due to electrical shorts. Connect again the cable on the negative battery terminal once the installation is completely finished.
- ☞ Use only in cars with a +12 or +24 volt negative ground (check with your car manufacturer if you are not sure). Failure to do so may result in fire, etc.
- ☞ The IDEATEC system must be powered by a DC voltage between + 10V and +30V. Use of AC voltage or DC voltage greater than + 30V can result in property damage, fire hazard, serious injury or fatal injury to yourself and / or others.
- ☞ Never install any devices or accessories inside the airbag deployment area. Such installation might reduce the effectiveness of the airbag or prevent it from being deployed. It can also potentially damage or dislodge the device, causing serious or fatal injuries.
- ☞ Installation of the equipment must comply with local and national electrical codes.
- ☞ It is imperative to dimension correctly all wires installed and connected to the positive battery terminal (see the chart on page 3) and protected by a proper fuse placed as close as possible to the battery.
- ☞ To ensure a correct operation of the device installed, it is necessary to make a perfect connection to the negative terminal. The negative output of the device must be connected to the negative terminal of the battery as directly as possible. The same applies to any elements controlled by the installed device.
- ☞ Do not allow cables to become entangled in surrounding objects. Arrange wiring and cables in compliance with the manual to prevent obstructions when driving. Cables or wiring that obstruct or hang up on places such as the steering wheel, shift lever, brake pedals, etc. can be extremely hazardous.
- ☞ Position the cables in such a way that they can never be damaged by vehicle vibrations or by impact (metal edge in direct proximity, mechanical stress on the cable, etc.). Also make sure that all users of the vehicle can never damage the cables directly or indirectly.
- ☞ Make sure that none of the vehicle's original controls are affected by the installed device.
- ☞ If you need to drill a hole in the dashboard, make sure that both sides are completely free to avoid damaging the vehicle.
- ☞ Always install the console or the central unit in a ventilated area, and never close to a heat source. This area must also be protected against dust and moisture.
- ☞ Ideatec systems must be installed on supports or surfaces that do not transmit or amplify vehicle vibrations.
- ☞ Please remind, any use of a relay connected to an output of the POLYPM-HD (positive or negative) must respect the usual precautions, namely the installation of a freewheeling diode at least. Be careful to respect the polarity of the diode when connecting it.



In addition, if the current flowing through the relay contact is very high, opening the contact can cause sparks inside the relay and cause disturbances in the wire harness. It is recommended in this case to add a capacitor absorbing the effects of sparks. Be careful to respect the polarity of the capacitor when connecting it (see the diagram below). The capacitor must be able to support a minimum voltage of 50V.



- ☞ If you have problems, do not attempt to repair the unit yourself. Return it to your IDEATEC dealer for servicing.

1. POLYPM^{HD} Safety and precautions

☞ Check that any inductive load connected to the POLYPM-HD central unit is equipped with an overvoltage protection diode (see diagram below) which absorbs reverse voltage peak that can be destructive. Inductive load can be motor, water pump, vacuum cleaner, fan, contactor, etc. In case of doubt, it is imperative to consult your reseller or Ideatec. If free output is available to the user (+ 12V socket, cigarette lighter socket, etc.), the overvoltage protection diode must be fitted. The diode must have a reverse avalanche voltage threshold (V_{rm}) equal to or greater than 33V, for example diode BZW50-33. Any inverter type load connection is strictly prohibited.



☞ Failure to follow safety guidelines and instructions may cause material damages, injuries, or death to you and/or to others.

☞ All IDEATEC metal cases must be grounded correctly to the negative battery. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Ideatec provides a kit REF.P0035F0024 to make this connection. The connection must be made on one of the flanges of the Ideatec system as shown in figure 1. The tooth washers must be positioned on either side of the terminal as shown in figure 1. The terminal provided allows a cable cross-section of 4 mm² to 6mm³, however Ideatec SA requires the placement of a 6mm² cable with a maximum length of 50cm.

IMPORTANT WARNING

The metal housing of this equipment must be properly grounded

Never operate the equipment in the absence of a suitably installed ground conductor.

! Read the user guide before installation !

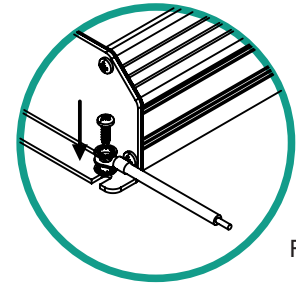


Fig.1

⚠ **IDEATEC S.A. assumes no liability and give the right to refuse any warranty if one or more of the recommendations on page 2 and 3 are not being followed.** ⚠

2. POLYPM^{HD} Dimensioning of electric wires

It is essential and mandatory to dimension electrical wires correctly according to the currents used and the length of the wires. Failure to dimension correctly may cause fire inside the vehicle. The product is equipped with static relay outputs only. The use of static relays has several advantages, among which the suppression of external fuses.

The cable(s) connected to the + terminal(s) of the POLYPM-HD central unit must be protected by a **fast blow** fuse calculated on the basis of the total current consumed according to the configuration (maximum 80A). Its section must be sufficient to support this current.

To fix the wire size, you must follow three essential precautions:

- Know or determine the maximum current consumed at each static output.
- Setup each static output used to limit the maximum current from 0,5 to 20A thanks to the software provided by IDEATEC S.A..
- Select the wire gauge according to its length and the current absorbed using the chart below :

ABACUS FOR THE DIMENSIONING OF ELECTRIC WIRES													
FILS		MAXIMUM AUTHORISED CURRENT IN THE WIRE											
mm ²	AWG	5A	10A	15A	20A	25A	30A	35A	40A	45A			
0.34	22	1.8m	6 Feet	0.9m	3 Feet	X	X	X	X	X	X	X	X
0.5	20	2.9m	9.5 Feet	1.5m	5 Feet	0.9m	3 Feet	X	X	X	X	X	X
0.75	18	4.5m	15 Feet	2.2m	7.5 Feet	1.5m	5 Feet	1.2m	4 Feet	0.9m	3 Feet	X	X
1.5	16	7.5m	24.5 Feet	3.5m	12 Feet	2.4m	8 Feet	1.8m	6 Feet	1.5m	5 Feet	1.2m	4 Feet
2.5	14	12m	39 Feet	6m	19.5 Feet	4m	13 Feet	2.8m	9.5 Feet	2.5m	8 Feet	2m	6.5 Feet
4	12	20m	62 Feet	9.5m	31 Feet	6m	20.5 Feet	4.7m	15.5 Feet	3.8m	12.5 Feet	3.2m	10.5 Feet
6	10	30m	98 Feet	15m	49 Feet	10m	32.5 Feet	7.5m	24.5 Feet	6m	19.5 Feet	5m	16.5 Feet
10	8	48m	156 Feet	24m	78 Feet	16m	52 Feet	11.8m	39 Feet	9.4m	31 Feet	8m	26 Feet
16	6	75m	248 Feet	37m	124 Feet	25m	82.5 Feet	18.8m	62 Feet	15m	49.5 Feet	12.6m	41.5 Feet
25	4	120m	395 Feet	60m	197 Feet	40m	131 Feet	30m	98.5 Feet	24m	79 Feet	20m	66 Feet
35	2	190m	629 Feet	95m	314 Feet	63m	209 Feet	47m	157 Feet	38m	125 Feet	31m	104 Feet

FILS		MAXIMUM AUTHORISED CURRENT IN THE WIRES								
mm ²	AWG	50A	55A	60A	65A	70A	75A	80A	85A	90A
0.34	22	X	X	X	X	X	X	X	X	X
0.5	20	X	X	X	X	X	X	X	X	X
0.75	18	X	X	X	X	X	X	X	X	X
1.5	16	X	X	X	X	X	X	X	X	X
2.5	14	1.2m	4 Feet	1m	3.5 Feet	0.9m	3 Feet	0.9m	3 Feet	0.9m
4	12	1.8m	6 Feet	1.7m	5.5 Feet	1.5m	5 Feet	1.5m	5 Feet	1.3m
6	10	3.0m	10 Feet	2.7m	9 Feet	2.4m	8 Feet	2.2m	7.5 Feet	2.1m
10	8	4.7m	15.5 Feet	4.2m	14 Feet	4m	13 Feet	3.6m	12 Feet	3.3m
16	6	7.6m	25 Feet	6.8m	22.5 Feet	6.2m	20.5 Feet	5.8m	19 Feet	5.3m
25	4	12m	39.5 Feet	11m	36 Feet	10m	33 Feet	9.2m	30.5 Feet	8.5m
35	2	19.2m	63 Feet	17.3m	57 Feet	16m	52.5 Feet	14.7m	48.5 Feet	13.7m


X = Insufficient

3. POLYPM^{HD}


Product description

3.1 Main Features


The POLYPM-HD device is made to control all electrical equipment added in a vehicle. Its installation is fully independent from the original circuit. The system is fully configurable via the software SpeedFitter and provides a lot of advantages (automation). The POLYPM-HD includes a siren generator/amplifier and special functions :

- 

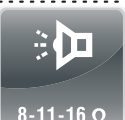
Only one central unit to drive all the equipments and simple wiring.
Simplified mounting : only one bus cable between the power module and the console/interface.
Possibility to add extra power modules with EPM-103 .

- 


Each positive output can deliver up to 15Amps. Depending on your Central Unit size, some positive outputs (Small : 9-10, Medium : 18-19-20) can deliver up to 20Amps/output thanks to their dual connection.

- 


Positive static power output full protected against overload and short-circuit. The current for each output must also be limited separately by software.

- 


Siren amplifier/generator is included inside the central unit and compatible with speakers from 8 to 16 ohms. The output peak to peak voltage for the speaker of the siren is configurable.

- 


The backlighting enhances the visibility of the key. Thanks to the light sensor on each console, the backlighting brightness varies according to the outdoor light intensity : maximum brightness in a sunny environment and less brightness in the dark to avoid blinding the user.

- 


A lot of interlock functions are available like the blue lights/siren interlock, grill lights/blue light interlock, keys conditions, etc.

- 


Automatic standby available with configurable conditions and timing to protect the battery.

- 


Special function for arrowstick driving from 4, 5, 6, 7 or 8 points with several options (including arrows).

- 


Visual and acoustic alarms for immediate pre-diagnosis : overload, openload, bus communication, etc.

- 

The POLYPM-HD is fully configurable with the user-friendly SpeedFitter software.

- 


Flashing box function included : 30, 60 or 100 cycles/min.

- 


The Walk Test function allows the driver to check all the outputs of the POLYPM-HD step by step to be sure that all the equipments connected to the POLYPM-HD are working well.

3. POLYPM^{HD} Product description (continued)


3.1 Main Features (continued)

- 


Timer
Function

To determine Time ON and Time OFF of the output signal, used for a gun lock for example.
- 

Power
Management

Loadshedding configurable for each positive output to save the battery. Configurable with two different voltage levels.
- 

Scene
Configuration

To activate several functions at the same time by pressing only one key.
- 


Hourmeter

Hourmeter allows you to measure the use of some equipments.
- 


Virtual
Inputs

Virtual input is a parameter made by the combination of 2 others parameters. Each input parameter can be reversed and the 2 parameters can be combined by AND, OR or XOR function. 32 virtual inputs are available. A virtual input can be a parameter for another virtual input too.
Example : signal activated when ignition is ON and handbrake is activated or a door is open.
- 


Heat/AC
Controller

Thanks to the optional Unitherm-HD interface, the POLYPM-HD is also an interface to control heating/airco systems.
Unitherm-HD is compatible with heating systems like Webasto, Eberspächer, Kalori and usual heater air exchange / hot water heating systems.
- 


Coupling
Battery

Thanks to analog input, the main battery of the vehicle can be monitored by POLYPM-HD system. Its voltage can be compared to the voltage of the auxiliary battery and one of the POLYPM-HD output can be used to drive a power relay to connect/disconnect the 2 batteries together.
- 


Messages

The POLYPM-HD allows you to show messages (status, alarm, etc.) on the screen
- 


Log File
Recording

As a black box, all parameters changes, chosen during the configuration, are recorded. This change of status can be read by software SpeedFitter.
- 


Gloves
Compatible

Instead of touch screen system for the mass market, the touch screen consoles POLYPM-HD can be used with gloves to meet the specific requirements of some applications (ambulance, fire department, etc).
- 

Embedded
Pictograms

More than 500x pictograms are available to configure the keys of the console.
Create also your own text pictograms with SpeedFitter for the keys of the console.
- 

SAE
J1939

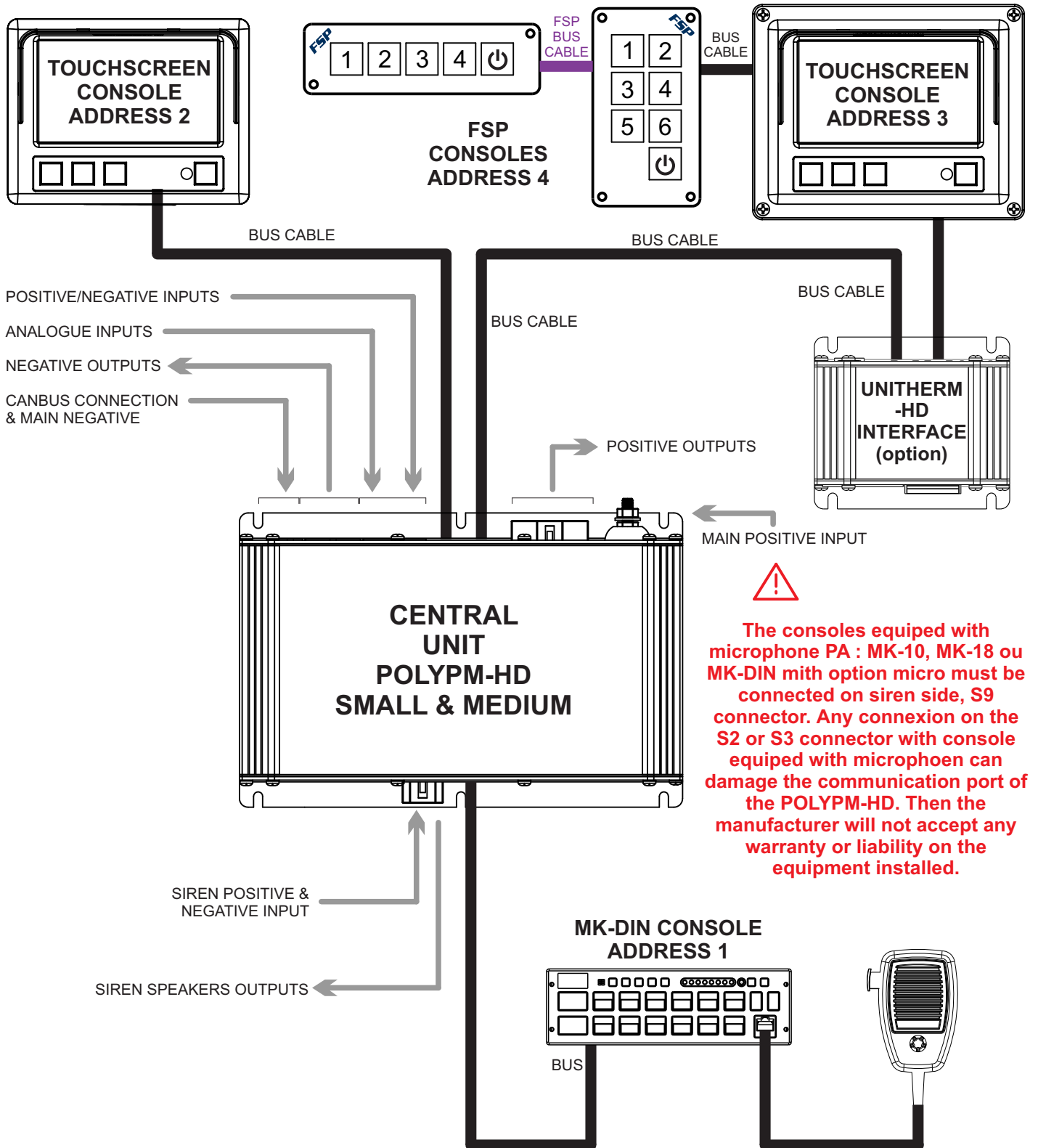
Canbus interface included inside the POLYPM-HD central unit allows you to read a lot of vehicle status directly from the CAN network of the vehicle with only 2 wires.
- 

Lightbar
CANBUS
Control

The main feature of the POLYPM-HD is the full control of CANBUS lightbar thanks to its 2x canbus ports, installation simplified.

3. POLYPM^{HD} Product description (following)

3.2 Hardware Configuration Example



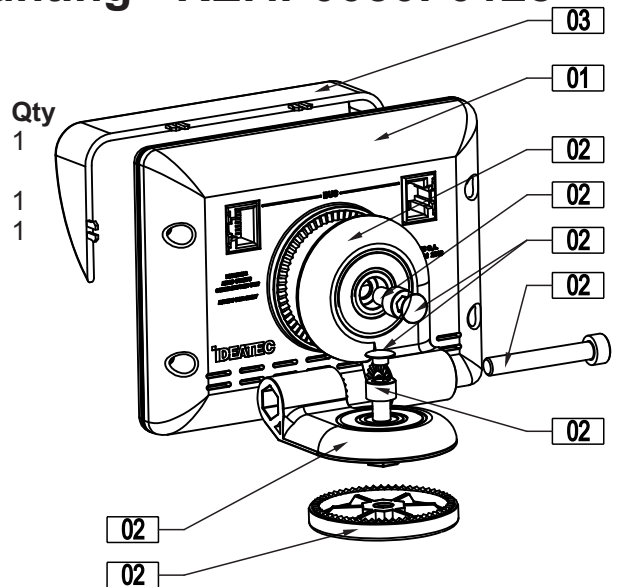
This typical hardware configuration POLYPM-HD includes one Central Unit POLYPM-HD, one MK-DIN console with its microphone option, one touchscreen console - foot mounting, one touchscreen console - panel mounting, two FSP consoles and one Unitherm-HD interface to control airco/heating system.

The minimal configuration requires at least one POLYPM-HD central unit and one console.

4. POLYPM HD Elements identification

4.1 Touchscreen Console Foot Mounting - REF.P0050F0128 & P0050F0128/F123

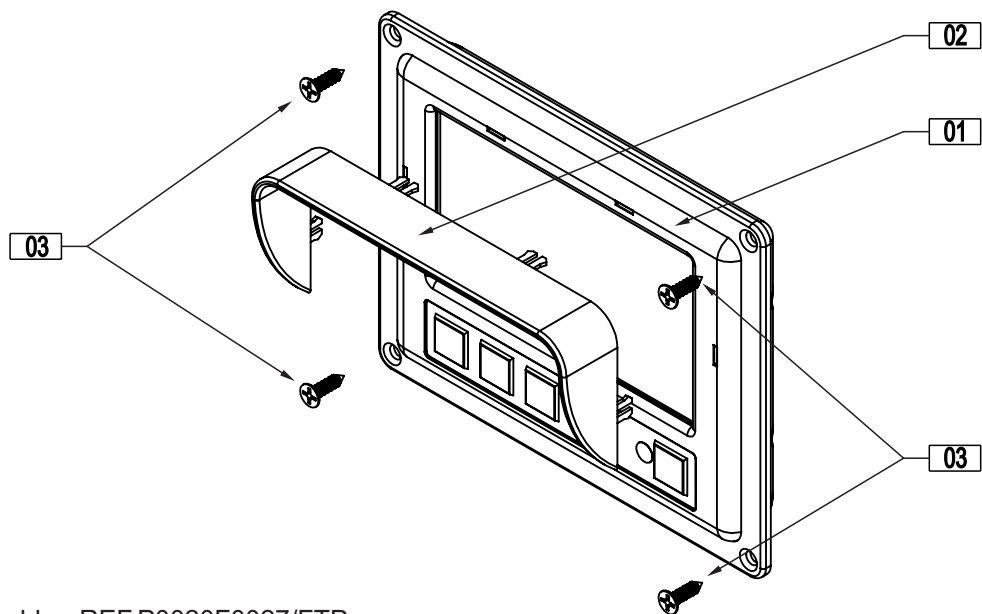
Item	P/N	DESCRIPTION
1	P0040F0102 & P0040F0102/F123	Touchscreen console foot mount.
2	P0039F0003	Foot mounting kit
3	A1000B0171	Sunvisor



i Provided with 5m BUS cable - REF.P0020F0027/FTP

4.2 Touchscreen Console Panel Mounting - REF.P0050F0129, REF.P0050F0129/G, P0050F0129/W & P0050F0129/W/G

Item	P/N	DESCRIPTION	Qty
1	P0040F0103, P0040F0103/G, P0040F0103/W, & P0040F0103/W/G	Touchscreen console wall mouting	1
2	A1000B0171	Black Sunvisor	1
3	A1000B0171/W, P0035F0013	White Sunvisor (for /W)	1



i Provided with 5m BUS cable - REF.P0020F0027/FTP

! In order to ensure perfect operation, only screws supplied by the manufacturer are accepted. **!** Otherwise, unless authorised in writing, the manufacturer will not accept any warranty or liability on the equipment installed.

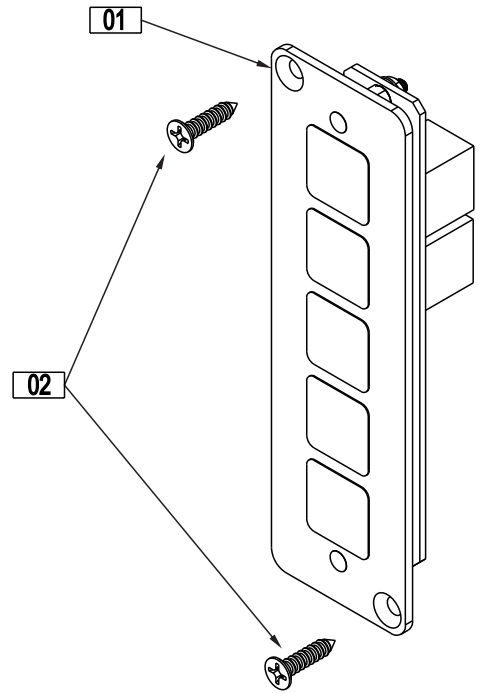
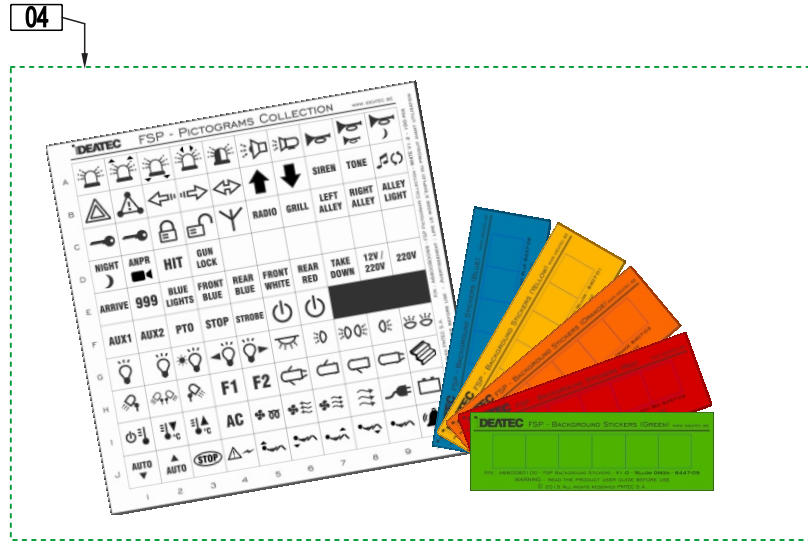
4. POLYPM HD Elements identification (continued)

4.3 FSP-4K Wall Mounting Console - REF.P0050F0106

4.3.1 Wall mounting by default

Item	P/N	DESCRIPTION
1	P0040F0073	FSP-4K Console
2	P0035F0017	Kit 2x screw M3,9x16
3	A1000B0154	FSP-4K green cover
4	P0039F0007	FSP Pictogram + Color Kit

Qty
1
1
1
1



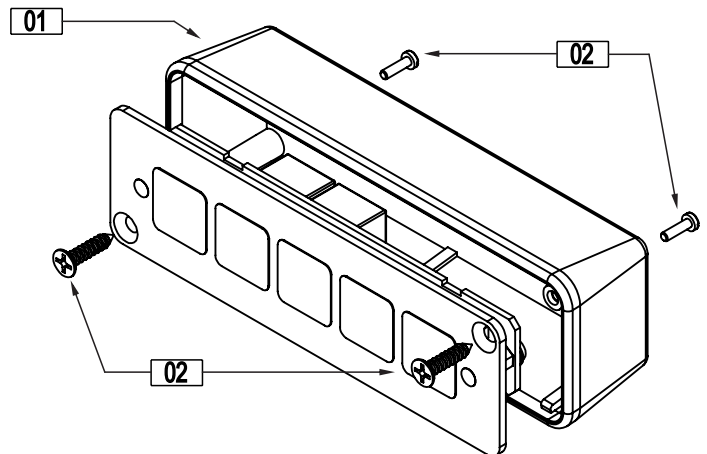
FSP

i Provided with 5m BUS cable - REF.P0020F0027/FTP

4.3.2 Housing option - REF.P0039F0008

Item	P/N	DESCRIPTION
1	A1000B0160	FSP-4K housing
2	P0035F0027	Fixing kit FSP-4K

Qty
1
1



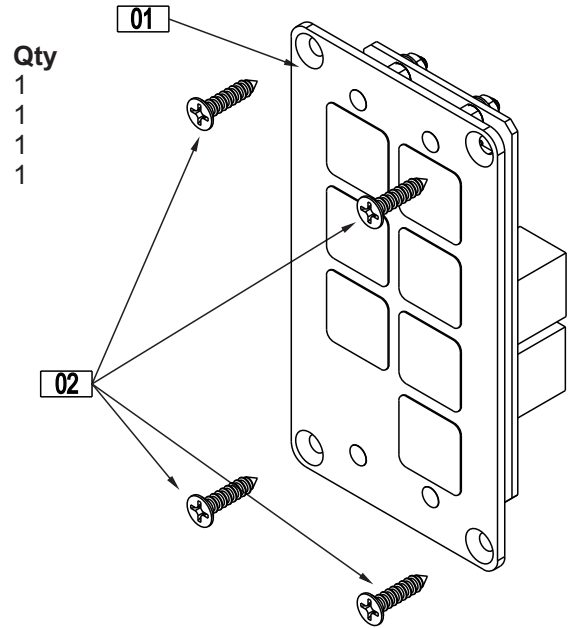
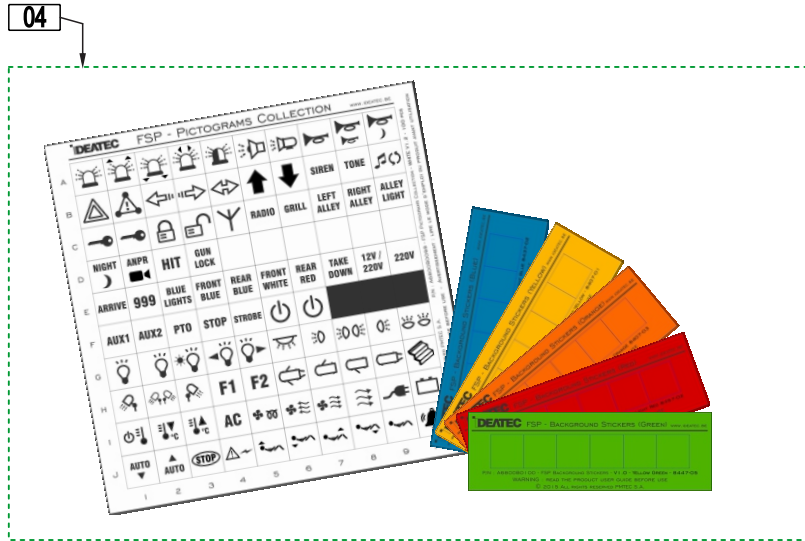
! In order to ensure perfect operation, only screws supplied by the manufacturer are accepted. **!** Otherwise, unless authorised in writing, the manufacturer will not accept any warranty or liability on the equipment installed.

4. POLYPM^{HD} Elements identification (continued)

4.4 FSP-6K Wall Mounting Console - REF.P0050F0107

4.4.1 Wall mounting by default

Item	P/N	DESCRIPTION
1	P0040F0074	FSP-6K Console
2	P0035F0018	Kit 4x screw M3,5x16
3	A1000B0155	FSP-6K green cover
4	P0039F0007	FSP Pictogram + Color Kit



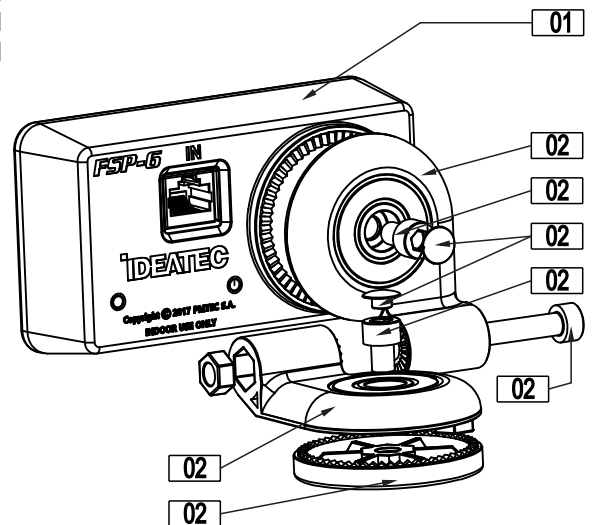
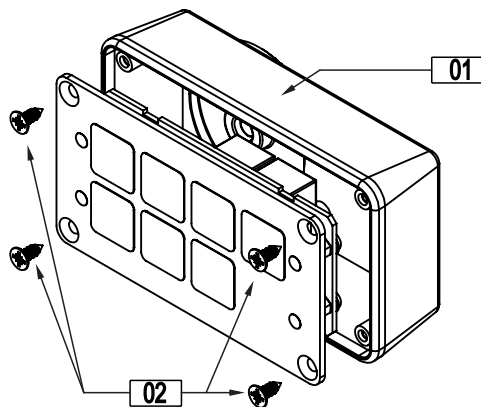
FSP

i Provided with 5m BUS cable - REF.P0020F0027/FTP

4.4.2 Housing option - REF.P0039F0009

Item	P/N	DESCRIPTION
1	A1000B0161	FSP-6K housing
2	P0035F0026	Fixing kit FSP-6K
3	P0039F0003	Foot mounting kit

Qty
1
1
1



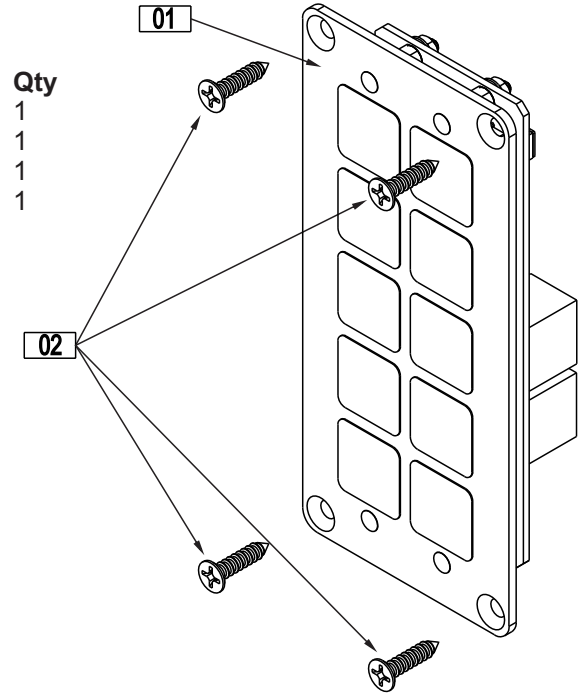
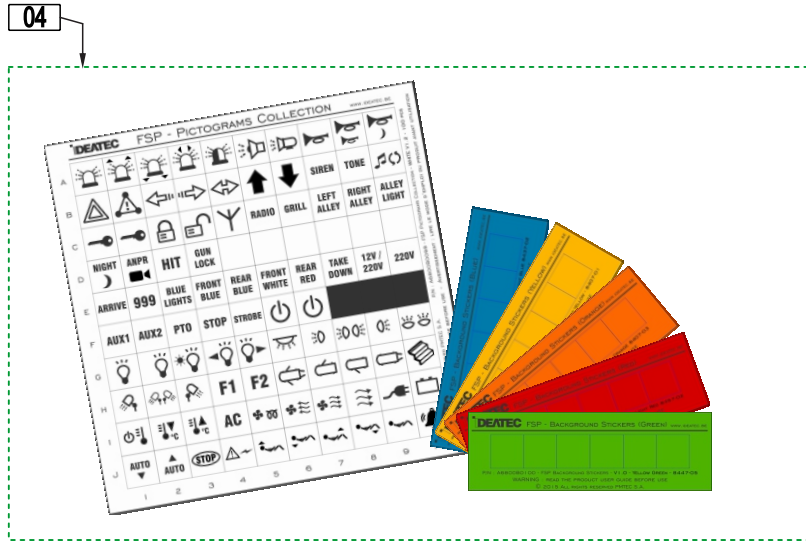
! In order to ensure perfect operation, only screws supplied by the manufacturer are accepted. **!** Otherwise, unless authorised in writing, the manufacturer will not accept any warranty or liability on the equipment installed.

4. POLYPM HD Elements identification (continued)

4.5 FSP-9K Wall Mounting Console - REF.P0050F0108

4.5.1 Wall mounting by default

Item	P/N	DESCRIPTION
1	P0040F0075	FSP-9K Console
2	P0035F0018	Kit 4x screw M3,5x16
3	A1000B0156	FSP-9K green cover
4	P0039F0007	FSP Pictogram + Color Kit



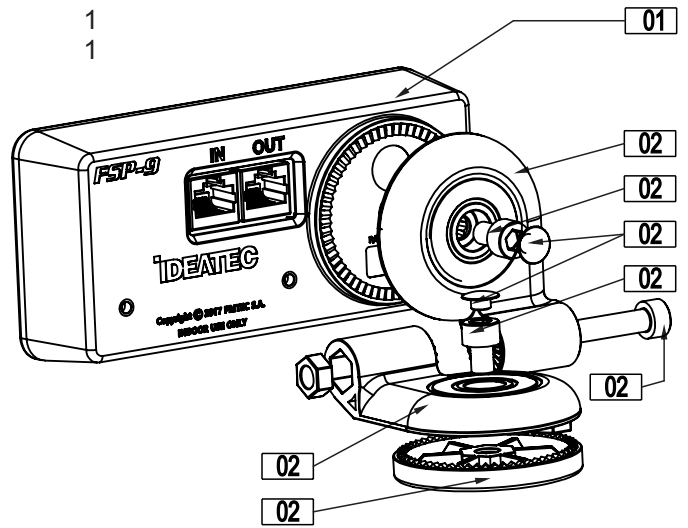
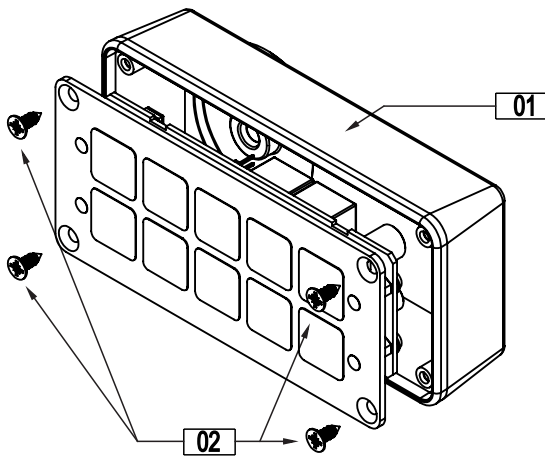
FSP

i Provided with 5m BUS cable - REF.P0020F0027/FTP

4.5.2 Housing option - REF.P0039F0010

Item	P/N	DESCRIPTION
1	A1000B0162	FSP-9K housing
2	P0035F0026	Fixing kit FSP-6K
3	P0039F0003	Foot mounting kit

Qty
1
1
1



! In order to ensure perfect operation, only screws supplied by the manufacturer are accepted. **!** Otherwise, unless authorised in writing, the manufacturer will not accept any warranty or liability on the equipment installed.

4. POLYPM HD Elements identification (continued)

4.6 FSP Pictograms + Colors Collection - REF.P0039F0007



Each FSP console is provided with pictograms + colors

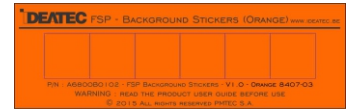
REF.A6800B0098

IDEATEC FSP - PICTOGRAMS COLLECTION										
A										
B										
C										
D										
E	ARRIVE	999	BLUE LIGHTS	FRONT BLUE	REAR BLUE	FRONT WHITE	REAR RED	TAKE DOWN	12V / 220V	220V
F	AUX1	AUX2	PTO	STOP	STROBE					
G										
H				F1	F2					
I				AC						
J	AUTO									
	1	2	3	4	5	6	7	8	9	10

RED



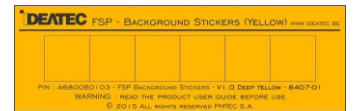
ORANGE



GREEN



YELLOW



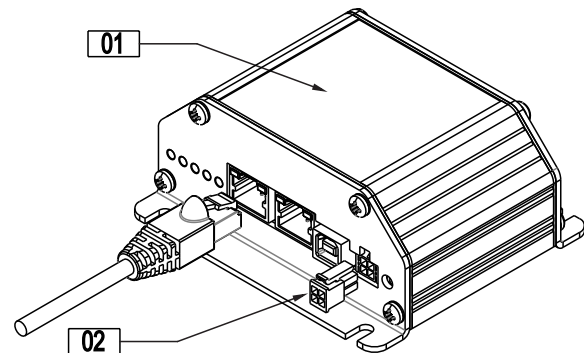
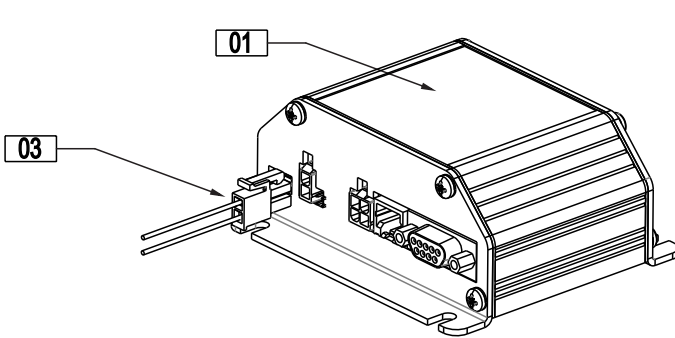
BLUE



4.7 OpenLink Module - REF.P0050F0055



Item	P/N	DESCRIPTION	Qty
1	P0040F0071	OpenLink Module	1
2	P0035F0019	Molex Minifit Connector Kit	1
3	P0035F0020	Würth Connector Kit	1



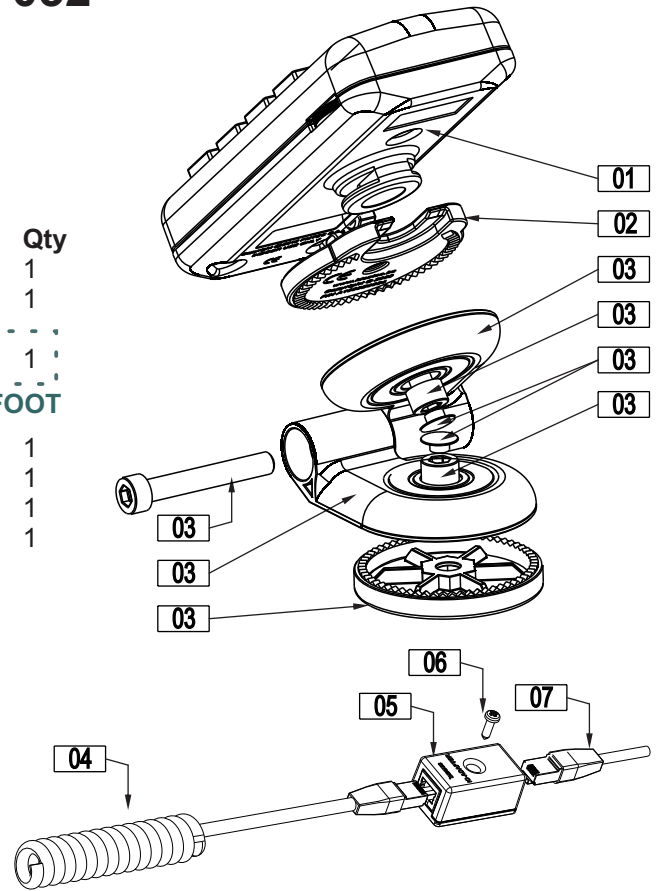
Provided with 1m BUS cable - REF.P0020F0042

4. POLYPM^{HD} Elements identification (continued)

4.8 MK-10 Console - REF.P0050F032

MK10

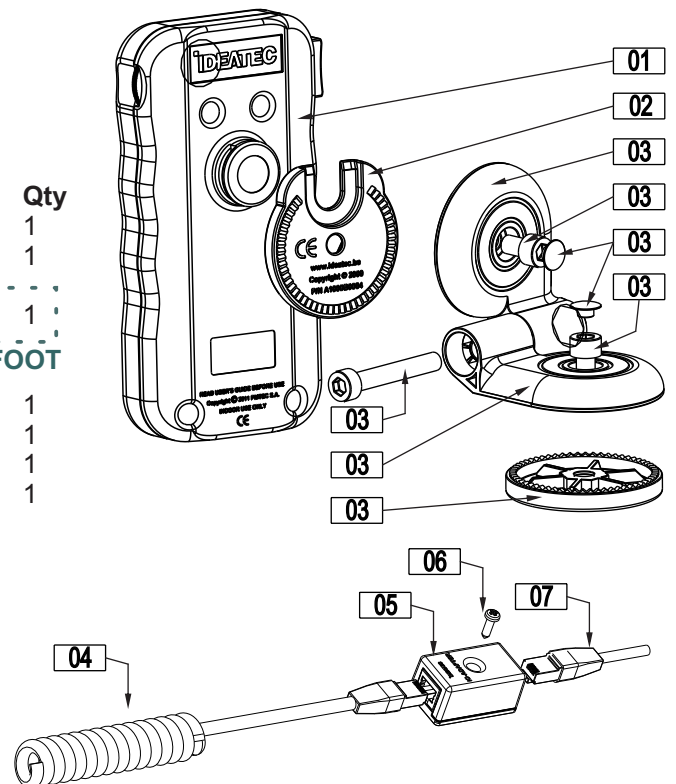
Item	P/N	DESCRIPTION	Qty
1	P0040F0077	MK-10 Console	1
2	A1000B0084	Foot adapter	1
<hr/>			
3	P0039F0003	Foot mounting kit	1
<hr/>			
OPTION MULTI DIRECTIONAL FOOT			
4	P0010A0088	Spiral Bus Cable	1
5	P0040F0049	IC-Adapter Version A	1
6	A9050B2506	Screw M2,5x6	1
7	P0020F0027/FTP	Bus Cable 5m	1



4.9 MK-18 Console - REF.P0050F0033

MK18

Item	P/N	DESCRIPTION	Qty
1	P0040F0012	PolyPM Hand Held Console	1
2	A1000B0084	Foot adapter	1
<hr/>			
3	P0039F0003	Foot mounting kit	1
<hr/>			
OPTION MULTI DIRECTIONAL FOOT			
4	P0010A0088	Spiral Bus Cable	1
5	P0040F0049	IC-Adapter Version A	1
6	A9050B2506	Screw M2,5x6	1
7	P0020F0027/FTP	Bus Cable 5m	1

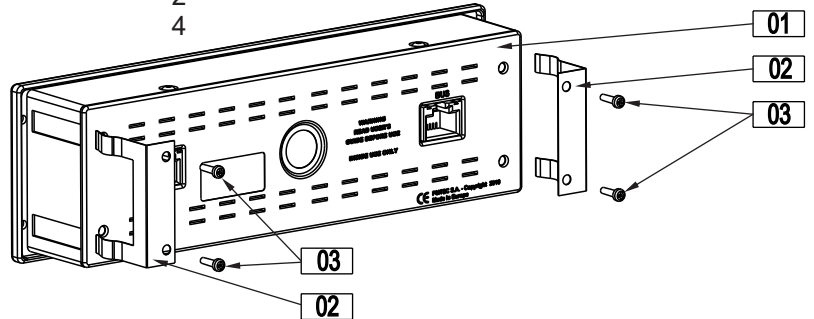


4. POLYPM^{HD} Elements identification (continued)

4.10 MK-DIN Console - REF.P0050F034

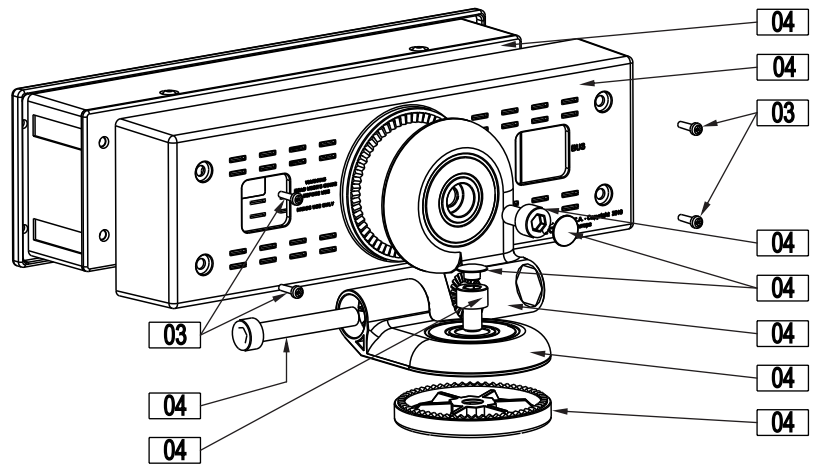
Item	P/N	DESCRIPTION	Qty
1	P0040F0099	MK-DIN Console	1
2	A1000B0096	Flat Spring	2
3	A9020C0306189	Screw M3x6	4

MK DIN



OPTION HOUSING WITH MULTIDIRECTIONAL FOOT P/N P0039F0004

4	P0039F0004	DIN Housing	1
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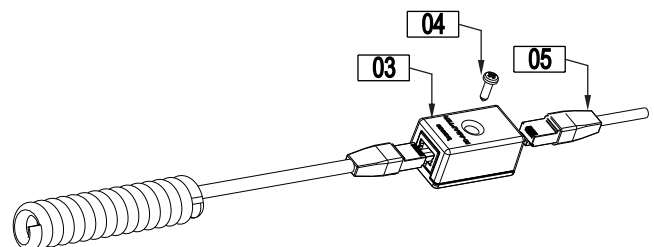
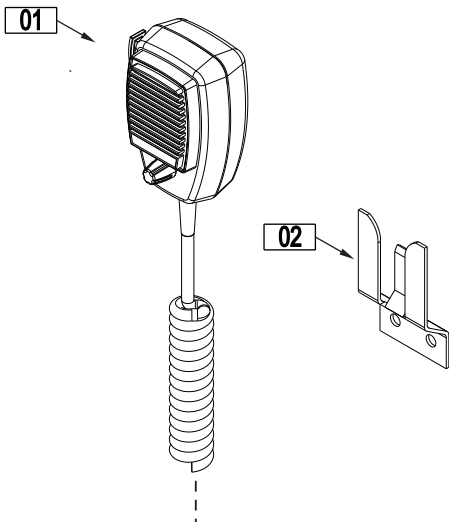
4.11 Microphone - REF.P0050F0036 (MK-DIN) /REF.P0050F0003/V2

P/N P0050F0036

Item	P/N	DESCRIPTION	Qty
1	P0040F0014	Console DIN Microphone	1
2	A1600B0102	Foot adapter	1

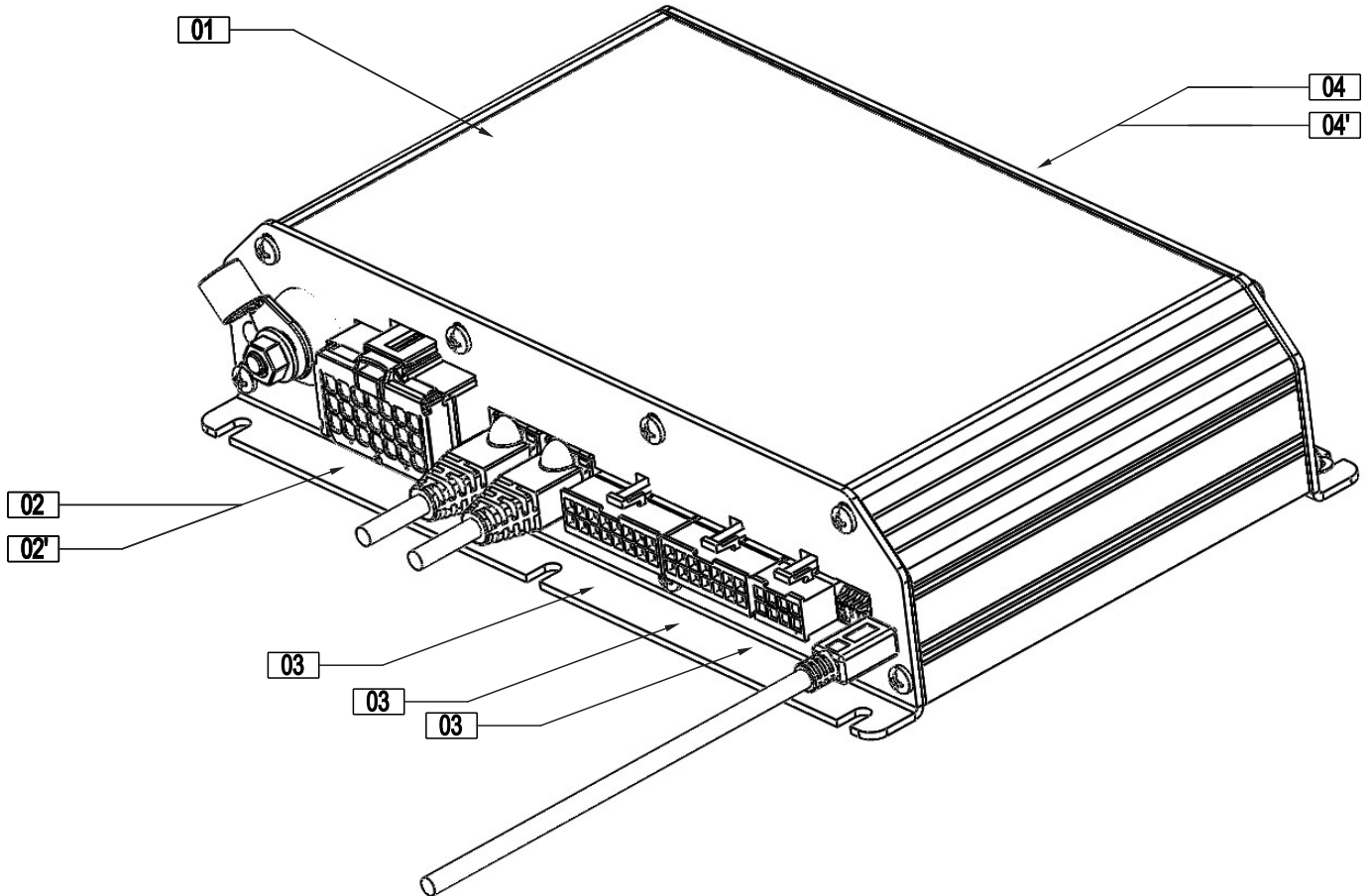
P/N P0050F0003/V2

Item	P/N	DESCRIPTION	Qty
1	P0040F0014	Console DIN Microphone	1
2	A1600B0102	Foot adapter	1
3	P0040F0049	IC-Adapter Version A	1
4	A9050B2506	Screw M2,5x6	1
5	P0020F0027/FTP	Bus Cable 5m	1



4. POLYPM^{HD} Elements identification (continued)

4.12 POLYPM-HD Central Unit « S » REF. P0050F0125(/H) & « M » REF. P0050F0126(/H)



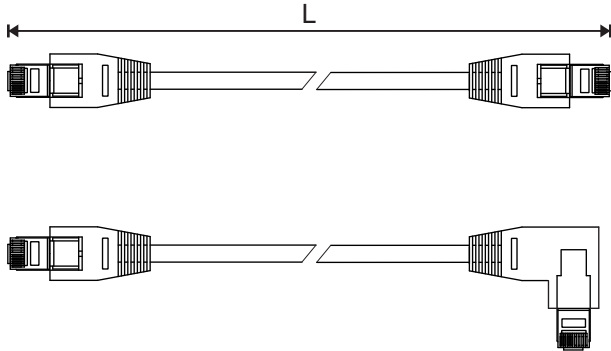
Item	P/N	DESCRIPTION	Qty
1	P0040F0100(S)/101(M)	POLYPM-HD Central Unit	1
2	P0035F0030(S)	Kit Connector TE 21p. with 11 terminals	1
	P0035F0031(M)	Kit Connector TE 21p. with 21 terminals	1
3	P0035F0044	Kit Connector Würth Minifit 16p.+14p.+8p.	1
4	P0035F0040	Kit Connector TE 9p. with 11 terminals	1

Option : Pre-wired TE connectors

2'	P0050F0100/H P0020F0130	Central Unit « Small » with the harness included 11 ways pre-wired TE 21 ways connector	1 1
	P0050F0101/H P0020F0131	Central Unit « Medium » with the harness included 21 ways pre-wired TE 21 ways connector	1 1
4'	P0020F0132	9 ways pre-wired TE 9 ways connector	1

4. POLYPM^{HD} Elements identification (continued)

4.13 2x RJ45 Bus Cable



Standard or special option order :

- Length = 1 meter - P/N : P0020F0042
- Length = 5 meters - P/N : P0020F0027/FTP
- Length = 6 meters - P/N : P0020F0043
- Length = 8 meters - P/N : P0020F0028
- Length = 10 meters - P/N : P0020F0029
- Length = 15 meters - P/N : P0020F0044

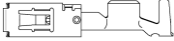
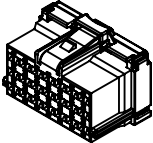
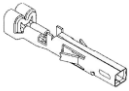
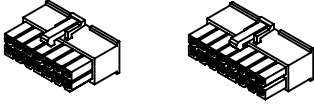
Right Connector

- Length = 5 meters - P/N : P0020F0097
- Length = 8 meters - P/N : P0020F0098

⚠ In order to ensure perfect operation, only BUS cables assembled and supplied by the manufacturer are accepted. Otherwise, unless authorised in writing, the manufacturer will not accept any warranty or liability on the equipment installed. ⚠

4.14 Connectors & Crimp contacts

The TE and Würth connectors are necessary to connect inputs/outputs of the POLYPM-HD. Their contacts must be crimped with a suitable tool (see references below).

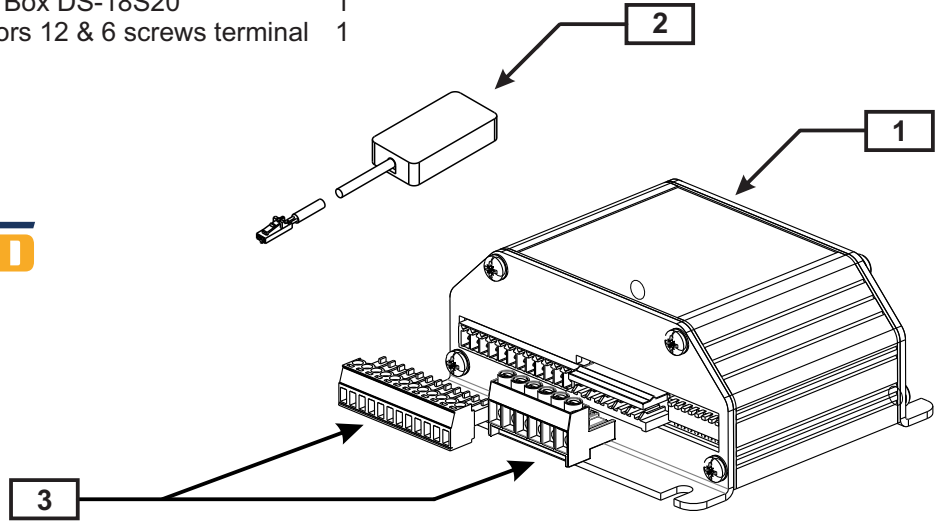
Qty	Description	TE/Wurtz Reference	Tool References
20 (S) 30 (M)	TE Connector Crimp Terminal AWG 14-16 	1-968857-1	Crimp Tool 1976143-1 With Die Assembly 539727-2
1 (S) 1 (M)	TE Connector 21P. & 9P. 	21P. : 8-968975-2 9P. : 8-968971-2	Pin Extractor 1579007-1
38 (S) 38 (M)	Würth Connector Crimp Terminal AWG 16 	649 005 137 22	Crimp Tool 600 001 With Die Assembly 600 420 420 001
1 (S) 1 (M)	Würth Connector 8, 14 & 16P. 	8P. : 649 008 113 322 14P. : 649 014 113 322 16P. : 649 016 113 322	Pin Extractor 600 649

4. POLYPM HD Elements identification (continued)

4.15 UniTherm-HD Interface + Sensor - REF.P0050F0078

Item	P/N	DESCRIPTION	Qty
1	P0040F0043	Complete Unitherm-HD interface	1
2	P0020F0073	R.F. Sensor Box DS-18S20	1
3	P0035F0005	Kit Connectors 12 & 6 screws terminal	1

UniTherm HD

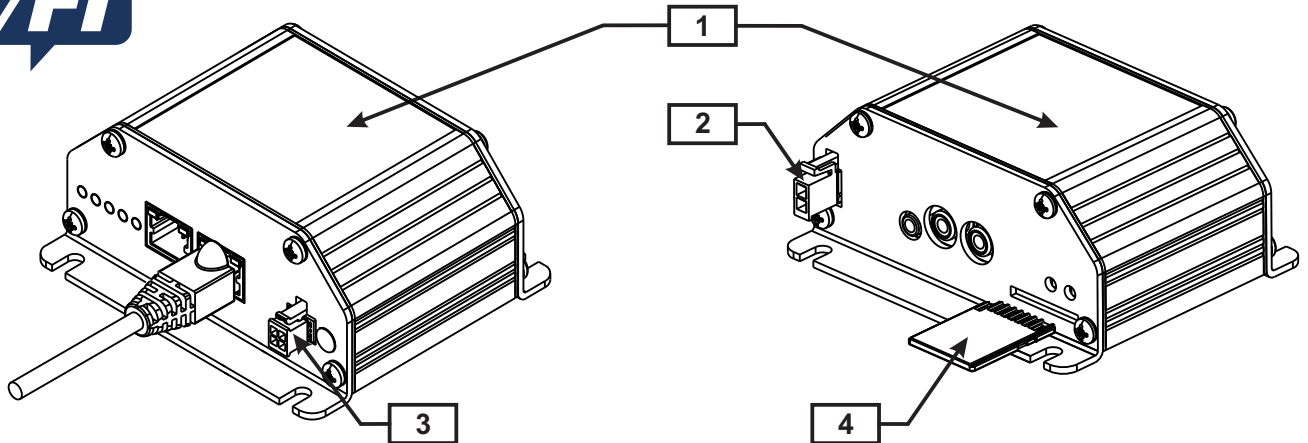


i Provided with 1m BUS cable - REF.P0020F0042

[Read the Unitherm-HD user guide for further information](#)

4.16 Voice Feedback Interface VFI - REF.P0050F0057

VFI



Item	P/N	DESCRIPTION	Qty
1	P0040F0076	VFI Interface	1
2	P0035F0019	Molex Minifit 2p. Kit	1
3	P0035F0020	Molex Microfit 4p. Kit	1
4	A1700B0007	SD Card 2Gb	1

i Provided with 1m BUS cable - REF.P0020F0042

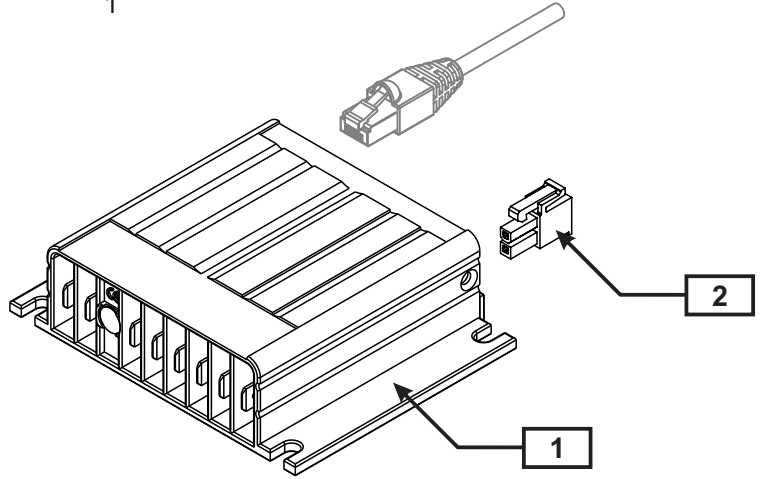
[Read the VFI user guide for further information](#)

4. POLYPM^{HD} Elements identification (continued)

4.17 ADI - Interface Analog to Digital Inputs - REF.P0050F0070

Item	P/N	DESCRIPTION	Qty
1	P0040F0087	ADI Interface	1
2	P0035F0019	Molex Minifit 2p. Kit	1

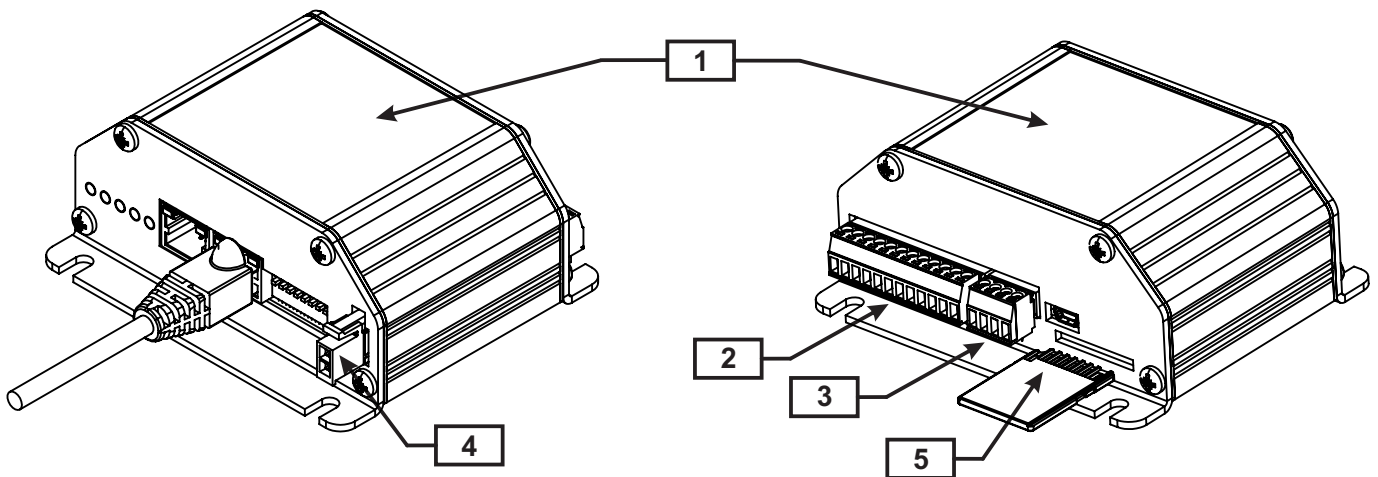
ADI



i Provided with 1m BUS cable - REF.P0020F0042

Read the ADI user guide for further information

4.18 Multi-Function Interface MFI - REF.P0050F0048



Item	P/N	DESCRIPTION	Qty
1	P0040F0088	MFI Interface	1
2	A4601B0122112/W	Würth 12p. 3.5mm	1
3	Not available	Würth 4p. 3.5mm	/
4	P0035F0019	Molex Minifit 2p. Kit	1
5	A1700B0007	SD Card 2Gb	1

i Provided with 1m BUS cable - REF.P0020F0042

MFI

Read the MFI user guide for further information

4. POLYPM^{HD} Elements identification (continued)

4.19 EPM-103 - Extended Power Module - REF.P0050F0058

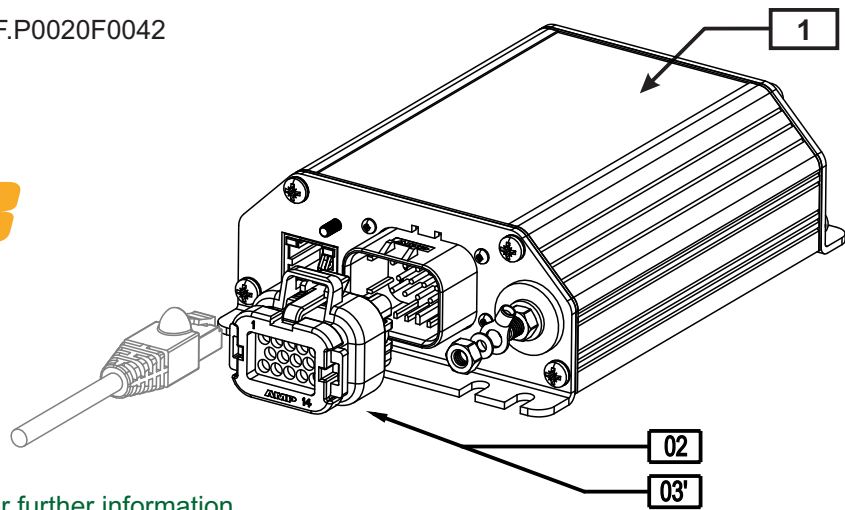
Item	P/N	DESCRIPTION	Qty
1	P0040F0085	EPM-103 Module	1
2	P0035F0015	Kit Connectors AMPSEAL 14p + 15x crimp terminals	1

Option : Pre-wired AMPSEAL connectors

3'	P0050F0058/H	EPM-13 Module with the harnesses included	1
	P0020F0049	Pre-wired AMPSEAL connector 14 ways	1

Provided with 1m BUS cable - REF.P0020F0042

EPM-103

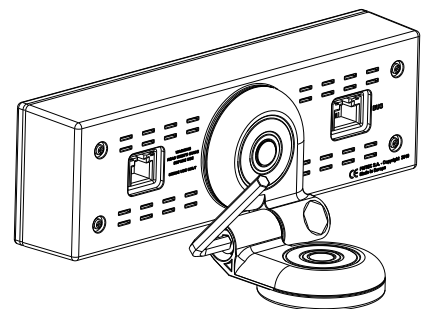
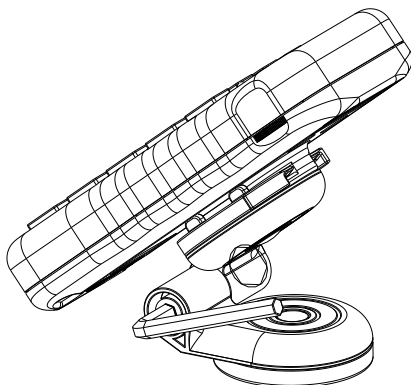
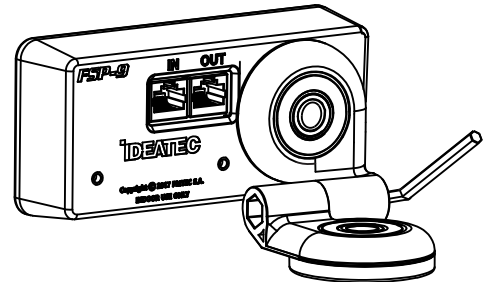
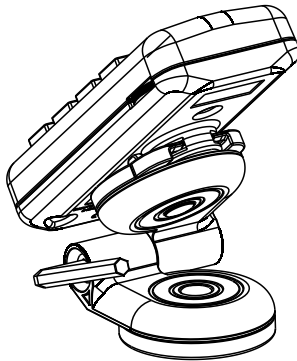
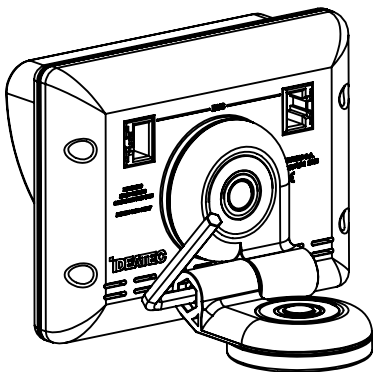
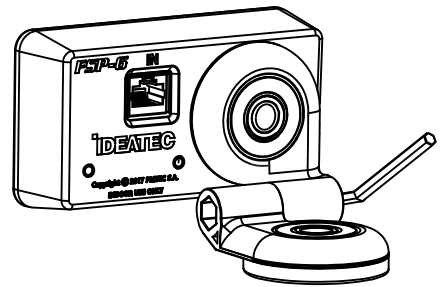




Read the EPM-103 user guide for further information

 **The safety of future users of this product depends on your installation. Therefore, it is critical that you read, understand, and follow all instructions contained in this installation guide.** 

5.1 Touchscreen Console & FSP-6K/FSP9K Housing - Foot mounting setting

- Preassemble the console without blocking the 2 hexagonal head screws.
- Choose the best place to install the console on the dashboard.
- Locate and note the 6 fixation holes at the base of the foot (page 22).
- Fix the base and position the console perfectly.
- Block the 2 hexagonal head screws.
- Attach the cover to the back of the foot with the screw provided.
- Place the small black cap on the head of the screw on the back.



 **Use only screws, nuts, and washers provided by the manufacturer. Using other, longer screws in the back of the console may seriously damage its internal parts. The manufacturer cannot assure any warranty or accept liability if other fixing elements or screw, nuts, and washers are used to install the console.** 

5. POLYPM^{HD}

Elements installation

⚠ The safety of future users of this product depends on your installation. Therefore, it is critical that you read, understand, and follow all instructions contained in this installation guide. ⚠

5.2 FSP-4K, FSP-6K & FSP-9K Housing

- Choose the best place to install the console in the vehicle.
- Locate and note the 2 fixation holes on the back side of the console (Fig.1).
- Place the console perfectly.
- Block the 2 head screws provided.
- **ATTENTION:** The force applied to tighten the screw depends on wall type. It must never be too high. The manufacturer will not provide repairs under warranty if the back side of the console is broken due to exceeded tightening force.

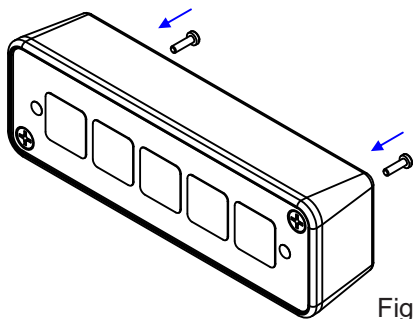


Fig.1

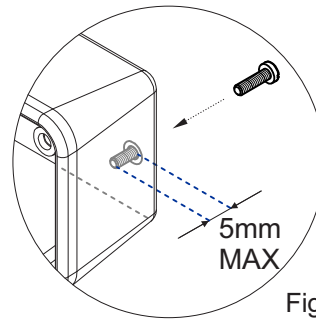


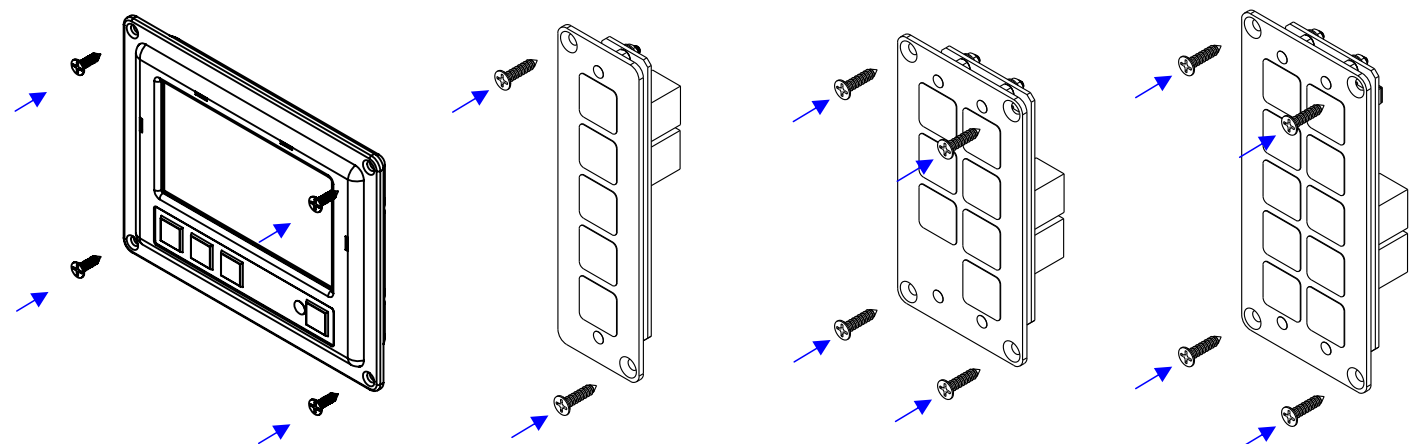
Fig.2

⚠ Use screws, nuts, and washers provided by the manufacturer. ⚠
Using other, longer screws in the back of the console may seriously damage its internal parts. The screws can never enter more than 5mm inside the box to avoid any damage.
The manufacturer cannot assure any warranty or accept liability if other fixing elements or screw, nuts, and washers are used to install the console.

5.3 Touchscreen Console & FSP Panel Mounting

- Fix the console only with the screws provided.
- **ATTENTION:** The force applied to tighten the screw depends on wall type. It must never be too high. The manufacturer will not provide repairs under warranty if the top side of the console is broken due to exceeded tightening force.

⚠ Use a flat surface to mount the console. ⚠



5. POLYPM^{HD}

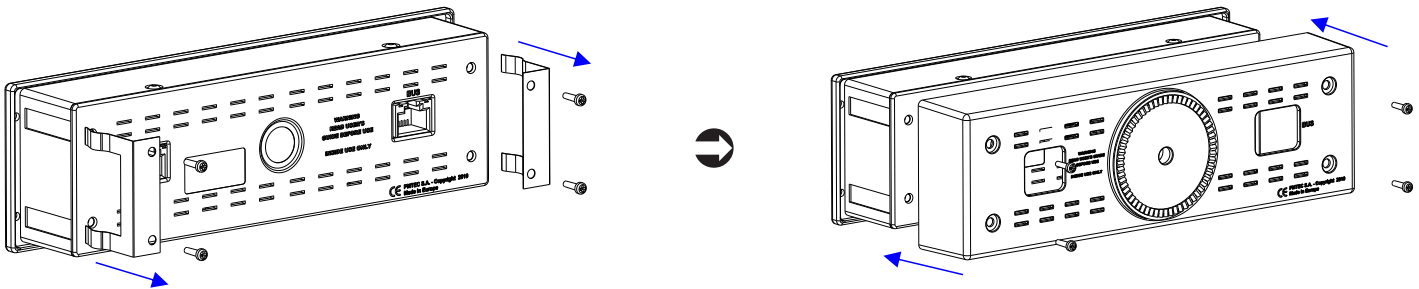
Elements installation

⚠ The safety of future users of this product depends on your installation. Therefore, it is critical that you read, understand, and follow all instructions contained in this installation guide. ⚠

5.4 DIN Console - foot mounting or dashboard

DIN Console can be mounted directly in a DIN slot on the dashboard of the car. If no DIN slot is available, it is possible to use it anyway with the foot mounting provided (in option).

➔ To use the optional foot mounting, first dismantle the 2 flat springs removing the 4 screws then, fix the DIN Console into the foot mounting with the same screws.



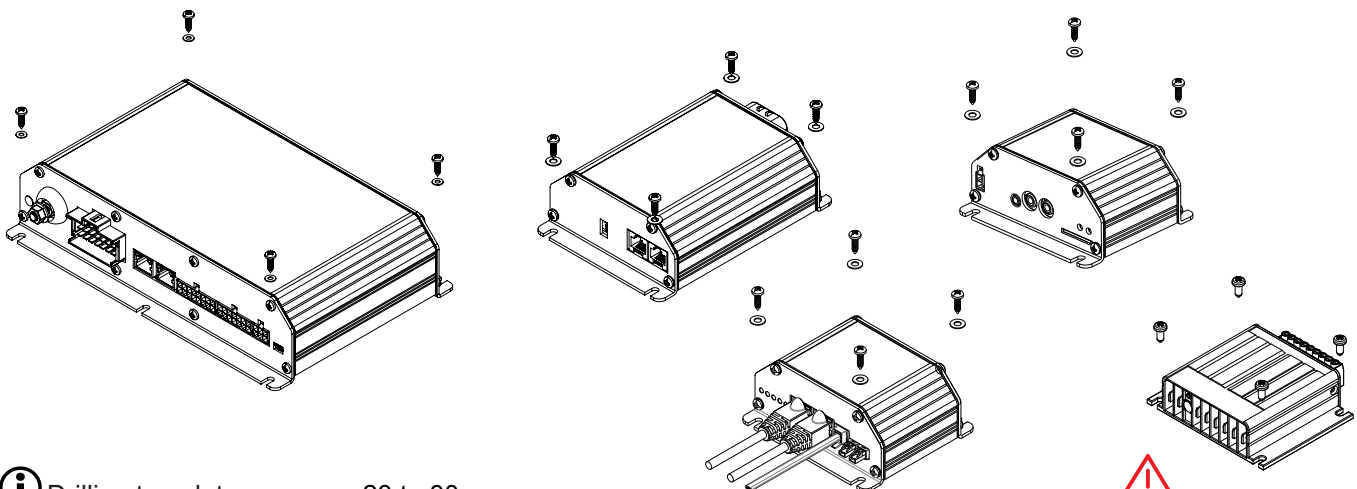
⚠ Use screws, nuts, and washers provided by the manufacturer. ⚠
Using other, longer screws in the back of the console may seriously damage its internal parts. The screws can never enter more than 5mm inside the box to avoid any damage.
The manufacturer cannot assure any warranty or accept liability if other fixing elements or screw, nuts, and washers are used to install the console.

5.5 Installing the POLYPM-HD Central Unit (S & M), OpenLink, Unitherm-HD, VFI, ADI Interfaces & EPM-103

➔ Choose a flat surface and use appropriate fixation screws.

➔ Always install the console or the central unit in a ventilated area, and never close to a heat source.

➔ Take into account the size of the different connectors that will be added to the assembly.



i Drilling template on pages 23 to 30

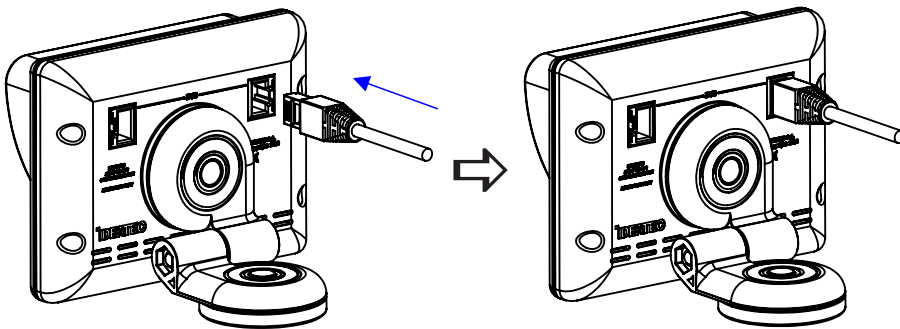
⚠ Do not attempt to enlarge the mounting holes.


5. POLYPM^{HD} Elements installation (continued)

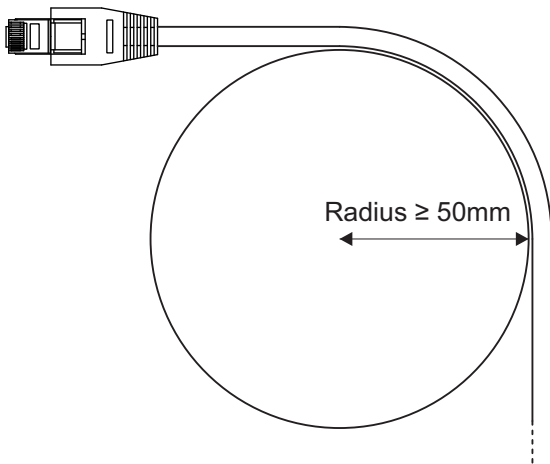
 **The safety of future users of this product depends on your installation. Therefore, it is critical that you read, understand, and follow all instructions contained in this installation guide.** 

5.6 Bus Cable Plugging

- ➔ Take into account the space around the consoles & modules to be able to plug and unplug the BUS cable.
- ➔ Make sure to respect the minimum bending radius of 50mm when placing the bus cables



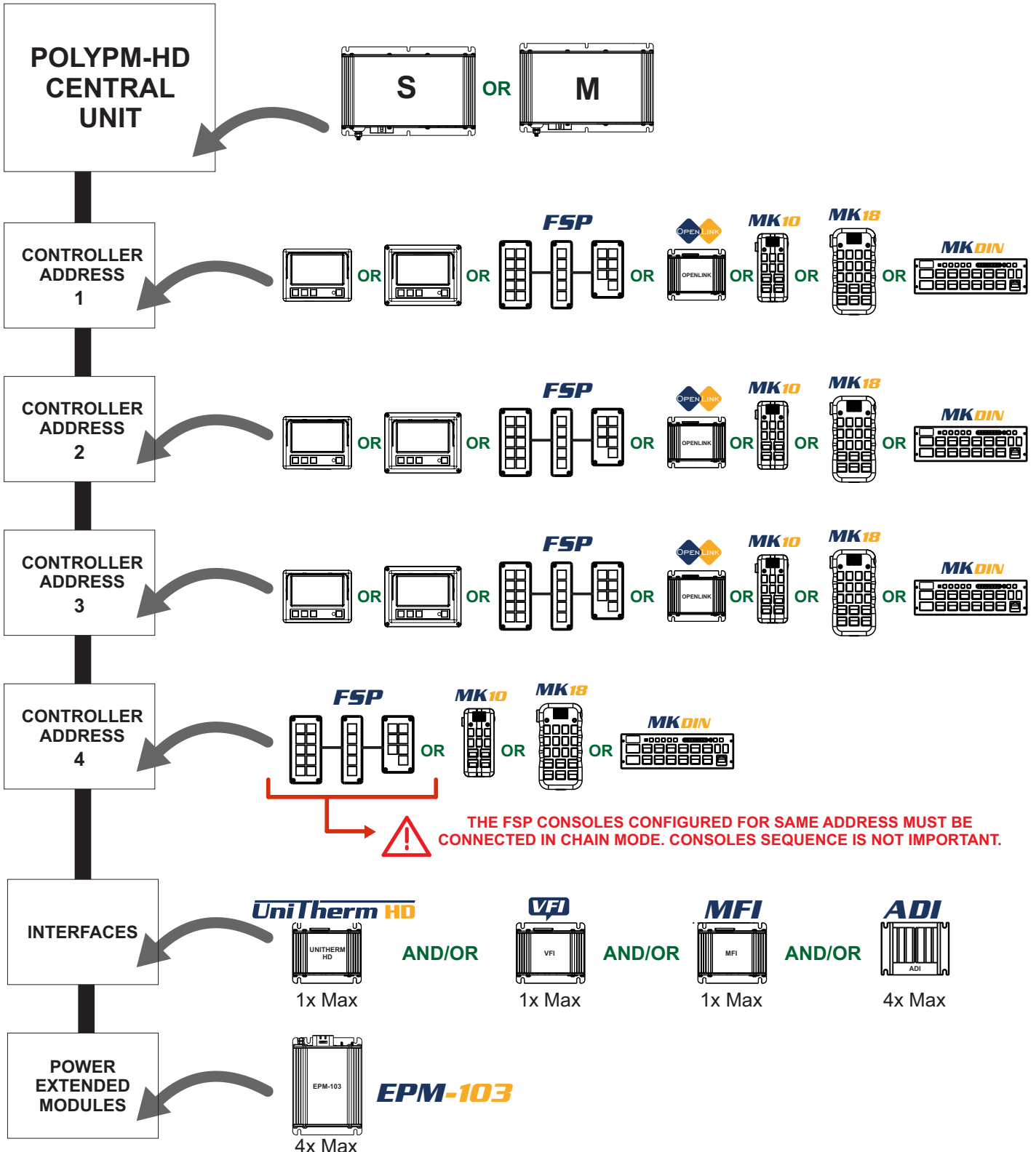
 **Do not tighten the BUS cable especially near the connectors, you can damage the cable or the connector on the module/console. Ideatec S.A. cannot accept any warranty request if the cable is not installed following the special recommendations.**



6. POLYPM^{HD} Connecting

6.1 General Principle

The minimal configuration is composed by a Central Unit S or M version and one controller on address 1, 2 or 3 : one foot or panel mounting touchscreen console, 1, 2 or 3 consoles FSP, one module Openlink and one MK-DIN console. The address 4 is reserved for consoles FSP or MK type.



6. POLYPM^{HD} Connecting (continued)

6.2 Central Unit S & M - Positive Outputs

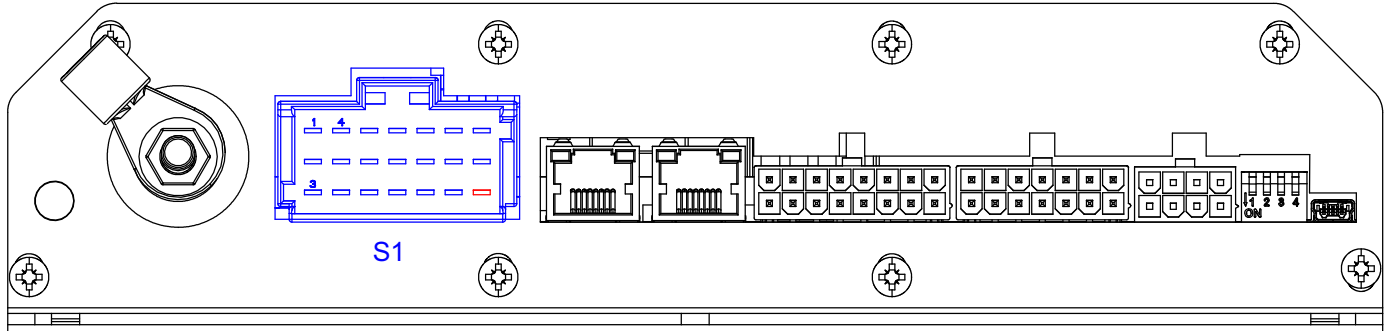
The POLYPM-HD Central Unit provide a number of positive outputs.

Small version

Positive outputs Nr 1 to 8 are limited each to 15A and the positive outputs Nr 9 and 10 are limited to 20A.

Medium version

Positive outputs Nr 1 to 17 are limited each to 15A and the positive outputs Nr 18 to 20 are limited to 20A.



POS.	DESCRIPTION	DESCRIPTION OF THE FUNCTION
FOR SMALL - MEDIUM		
S1 - 1	Positive output nr.1	.....
S1 - 2	Positive output nr.2	.....
S1 - 3	Positive output nr.3	.....
S1 - 4	Positive output nr.4	.....
S1 - 5	Positive output nr.5	.....
S1 - 6	Positive output nr.6	.....
S1 - 7	Positive output nr.7	.....
S1 - 8	Positive output nr.8	.....
S1 - 9	Positive output nr.9	.....
S1 - 10	Positive output nr.10	.....
FOR MEDIUM		
S1 - 11	Positive output nr.11	.....
S1 - 12	Positive output nr.12	.....
S1 - 13	Positive output nr.13	.....
S1 - 14	Positive output nr.14	.....
S1 - 15	Positive output nr.15	.....
S1 - 16	Positive output nr.16	.....
S1 - 17	Positive output nr.17	.....
S1 - 18	Positive output nr.18	.....
S1 - 19	Positive output nr.19	.....
S1 - 20	Positive output nr.20	.....
S1 - 21	Positive input power supply	See next page

6. POLYPM^{HD} Connecting (continued)

6.3 Central Unit S & M - Power supply of the POLYPM-HD modules

The particularity of POLYPM-HD is the separation of the intrinsic power supply part of the POLYPM-HD modules (central unit, touchscreen consoles, FSP consoles) and the supply of external equipment connected to the POLYPM-HD Central Unit. The positive + terminal therefore supplies the power positive outputs of the POLYPM-HD and the power input on the TE S1 connector on position 21 supplies the POLYPM-HD CPU and consoles.

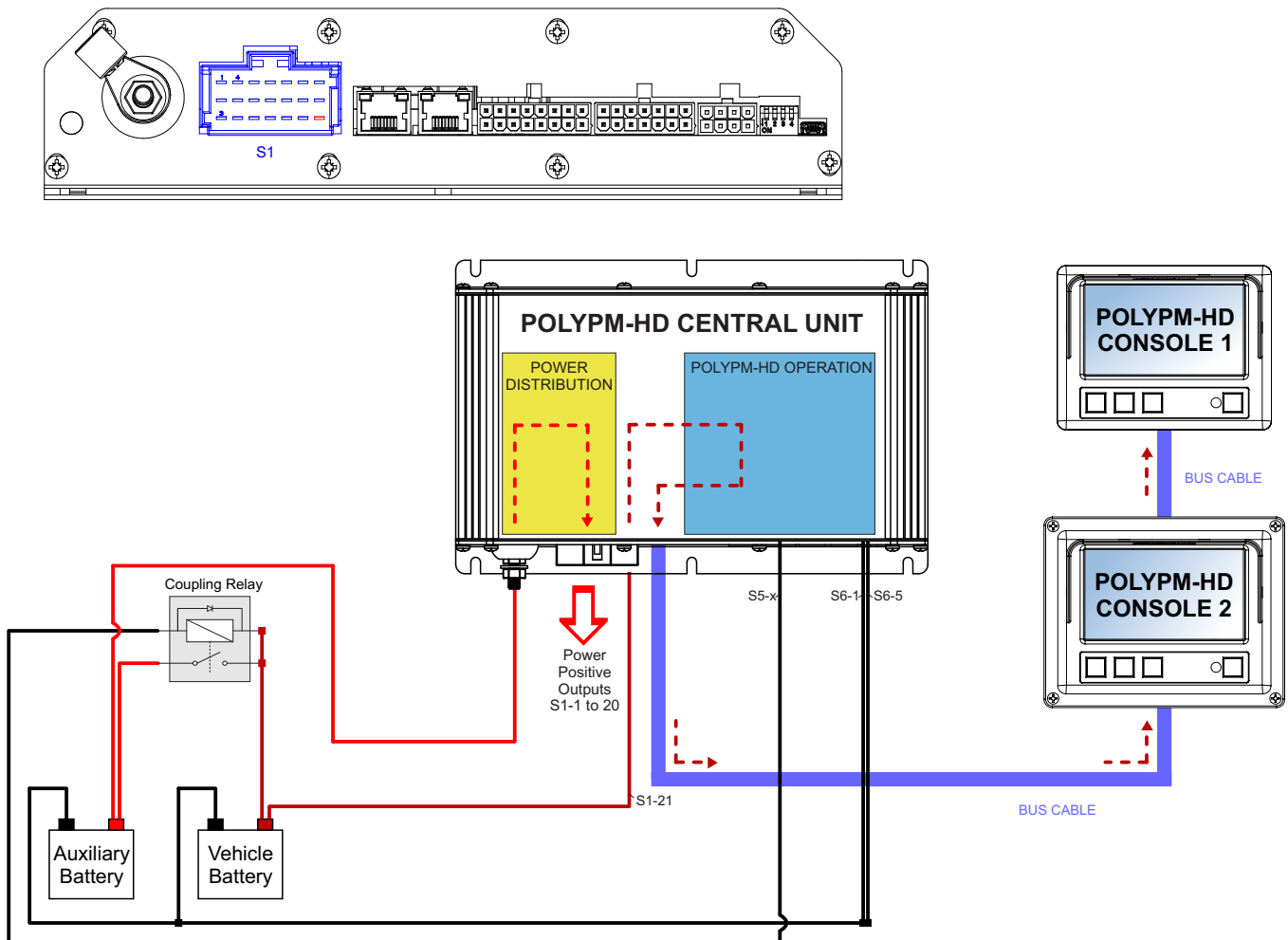
Interfaces such as Unitherm-HD, MFI, VFI or ADI have their own power input.

The main advantage is to optimize the coupling of the auxiliary battery and the main battery of the vehicle. Indeed, the POLYPM-HD in this configuration has the advantage of being able to restart at any time even if the auxiliary battery has accidentally lost its autonomy and thus to restore it by coupling via the POLYPM-HD.

In this configuration, the POLYPM-HD goes into sleep mode to reduce its own consumption to the maximum.

The intrinsic power input to POLYPM-HD at terminal 21 of connector S1 must be protected by a 5A fuse.

The example below describes a typical power connexion diagram:

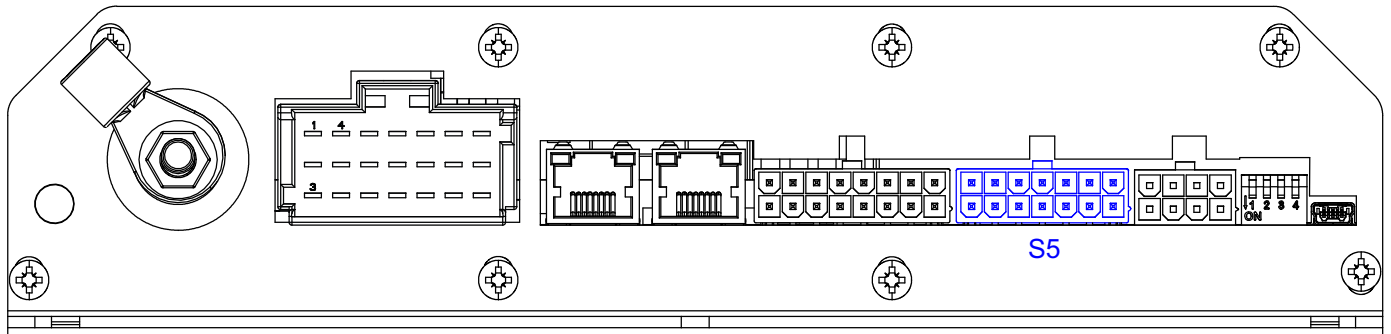


POS.	DESCRIPTION	DESCRIPTION OF THE FUNCTION
S1 - 21	Positive input	FOR SMALL - MEDIUM Power Supply input for POLYPM-HD modules

6. POLYPM^{HD} Connecting (continued)

6.4 Central Unit S & M - Negative Outputs

The POLYPM-HD Central Units provide a number of negative outputs.
Negative outputs Nr 1 to 28 are limited each to -1,5A.

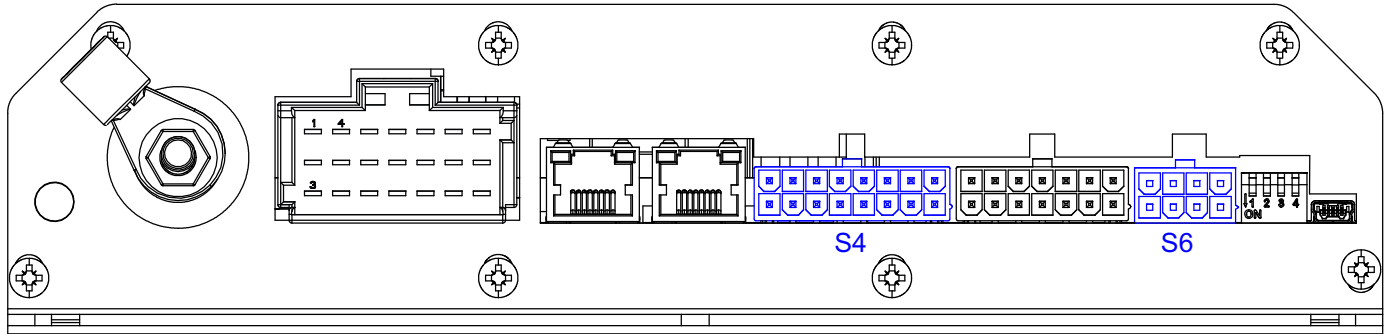


POS.	DESCRIPTION	DESCRIPTION OF THE FUNCTION
FOR SMALL		
S5 - 1	Negative output nr.1	.....
S5 - 2	Negative output nr.2	.....
S5 - 3	Negative output nr.3	.....
S5 - 4	Negative output nr.4	.....
S5 - 5	Negative output nr.5	.....
S5 - 6	Negative output nr.6	.....
S5 - 7	Negative output nr.7	.....
S5 - 8	Negative output nr.8	.....
S5 - 9	Negative output nr.9	.....
S5 - 10	Negative output nr.10	.....
FOR MEDIUM		
S5 - 11	Negative output nr.11	.....
S5 - 12	Negative output nr.12	.....
S5 - 13	Negative output nr.13	.....
S5 - 14	Negative output nr.14	.....

6. POLYPM^{HD} Connecting (continued)

6.5 Central Unit S & M - Inputs

The POLYPM-HD Central Unit provides up to 28 isolated positive or negative inputs (configured by software, except positive input 1 for + ignition), 2x analog inputs (battery monitoring for example) and 3x CAN connection (to connect to the vehicle Canbus and equipment controlled by Canbus for example).

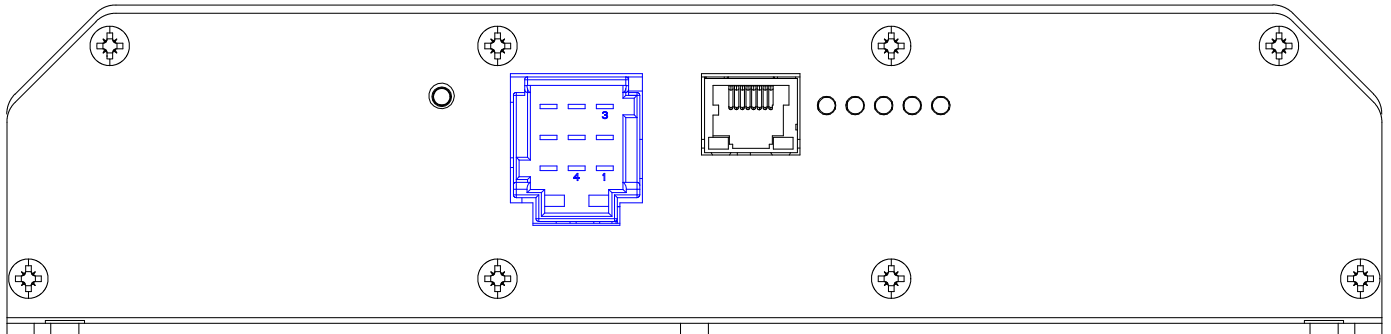


POS.	DESCRIPTION	DESCRIPTION OF THE FUNCTION
S4 - 1	Positive input nr.1	FOR SMALL + Ignition
S4 - 2	Pos/Neg input nr.2	.....
S4 - 3	Pos/Neg input nr.3	.....
S4 - 4	Pos/Neg input nr.4	.....
S4 - 5	Pos/Neg input nr.5	.....
S4 - 6	Pos/Neg input nr.6	.....
S4 - 7	Pos/Neg input nr.7	.....
S4 - 8	Pos/Neg input nr.8	.....
S4 - 15	Analog input nr.1	.....
S4 - 16	Analog input nr.2	.....
S6 - 1	Ground	Ground connected to <-> battery
S6 - 5	Ground	Ground connected to <-> battery
S6 - 2	Can1-H	Can 1 High Connection
S6 - 6	Can1-L	Can 1 Low Connexion
S6 - 3	Can2-H	Can 2 High Connection
S6 - 7	Can2-L	Can 2 Low Connexion
S6 - 4	Can3-H	Can 3 High Connection
S6 - 8	Can3-L	Can 3 Low Connexion
S4 - 9	Pos/Neg input nr.9	FOR MEDIUM
S4 - 10	Pos/Neg input nr.10	.....
S4 - 11	Pos/Neg input nr.11	.....
S4 - 12	Pos/Neg input nr.12	.....
S4 - 13	Pos/Neg input nr.13	.....
S4 - 14	Pos/Neg input nr.14	.....

6. POLYPM^{HD} Connecting (continued)

6.6 Siren


The POLYPM-HD Central Unit does include a siren module 100W fully protected against load failure.



POS.	DESCRIPTION	DESCRIPTION OF THE FUNCTION
S8 - 1	Standby Input (-)	.....
S8 - 2	Horn Input (-)	.....
S8 - 3	Bank Input (-)	.....
S8 - 4	Horn Input (+)	.....
S8 - 5	Negative Power Supply	.....
S8 - 6	Status Oupput (+)	.....
S8 - 7	Positive Power Supply	.....
S8 - 8	Loud Speaker	.....
S8 - 9	Loud Speaker	.....

⚠ Siren Module inside the POLYPM-HD is not powered directly by the POLYPM-HD itself. When the configuration is sent to the POLYPM-HD, the siren configuration is included so the siren module must be powered up during the configuration transfer. 2 different ways to connect the siren to power supply :

- 1) Directly to positive connexion of the battery with fuse protection of maximum 10A.**
- 2) By a positive output of the POLYPM-HD directly configured with current max of 10A. It is important in this case to select the right activator item for the positive ouput of the POLYPM-HD to keep it ON when the POLYPM-HD is synchronizing.**

 Always active - config synchro included	1015
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6. POLYPM^{HD}

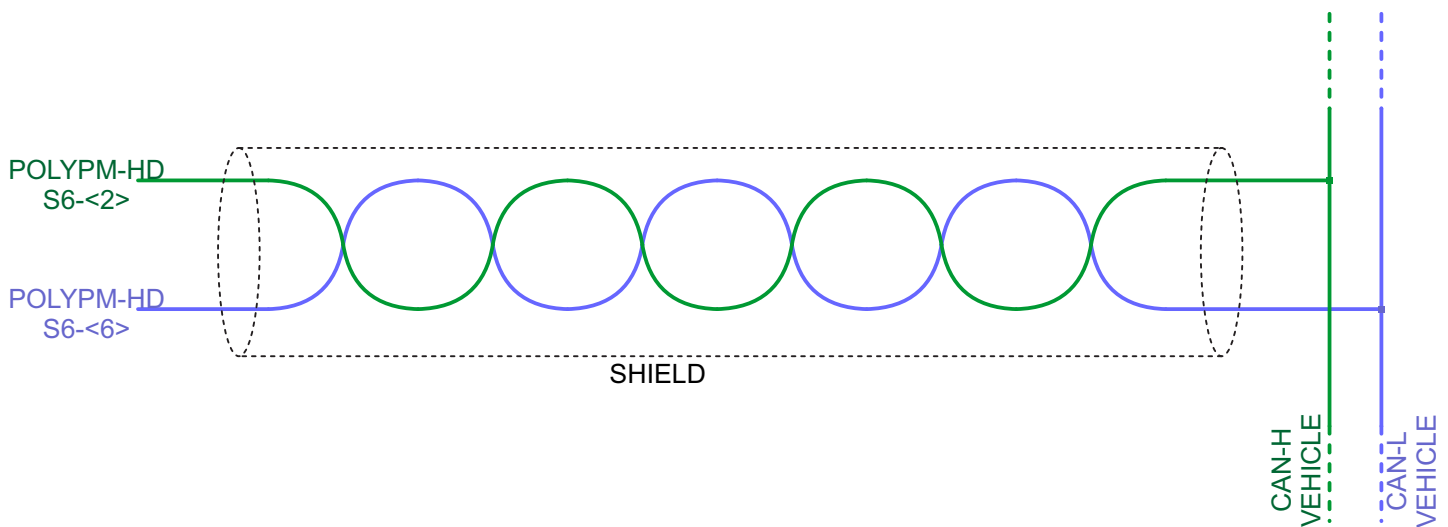
Connecting (continued)

6.7 Special Feature For Canbus

CANBUS connection offers you a lot of advantage for mounting and configuration flexibility. The CANBUS wiring has specific features to respect the original CANBUS network of the car.

The length of the cables between POLYPM-HD Central Unit and original CANBUS network of the car is maximum 4m. Canbus wires have to be **twisted and shielded**.

To know where to connect the CANBUS wires, please refer to the documentation of the vehicle manufacturer. Refer to the parameters available in the SpeedFitter to know which parameters are available for each vehicle.



IDEATEC S.A. CANNOT BE RESPONSIBLE OF ANY DAMAGE ON THE VEHICLE DUE TO CANBUS CONNECTION ESPECIALLY IF THE WIRES ARE NOT MOUNTED FOLLOWING THE INSTRUCTIONS