

# TVS-IOT

User Manual v1.2

# User Interface & Internet Connectivity

- Start the tablet, phone, PC or another device for TVS-IOT user interface.
- Enable preconfigured Hotspot (1) to give TVS-IOT access to the internet. (Local WiFi routers can be used as well with required network configuration)
- Open AdaptFuture web or mobile application (2) or just use <http://adaptfuture.it> to open it.
- Login with your preconfigured or personal user and select device ID in the menu to start simulation scenarios.
- Standard scenarios listed in device dashboard. New scenarios can be requested by Support Request feature.
- If simulation are required to be canceled, initiate RESET function and select another scenario



**TVS-IOT** product shall be treat as hazardous voltage source in all times and all local safety requirements shall be fulfilled. Only trained and skilled persons shall work with this device with local safety manager permission!



1

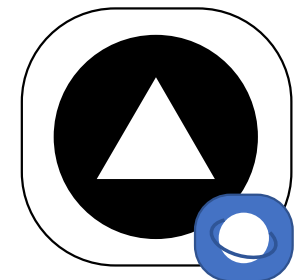


**Hotspot configuration:**

Network name: [Adapt11](#)

Password: [tvs\\_safe](#)

2

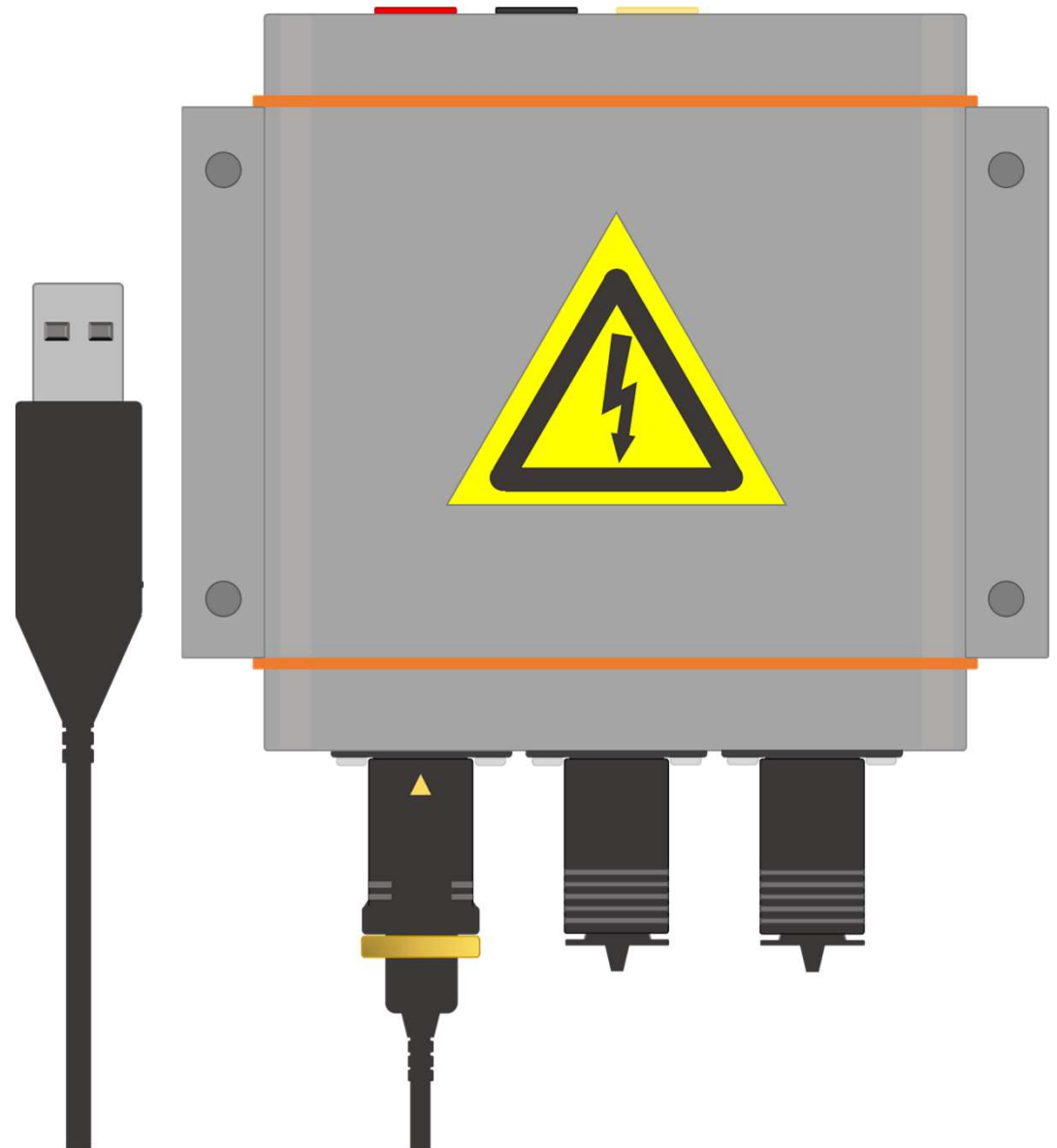


# Power Up TVS-IOT

- Plug in USB Type B power cable
- Power up with 5V adapter or 5V power bank to ensure 2.5A supply current
- Wait few minutes until LED indicator starts flashing **GREEN** and stays **ON**



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TVS-IOT product is designed to generate very low traction voltage current and has integrated safety monitoring features for short connection and/or human touch events to prevent from electric hazard risks.

Important: If TVS-IOT product are connected to large traction voltage system with high capacity the charge can reach dangerous levels! It is very important for OEMs to verify capacity of the training rigs to get best experience with TVS-IOT product.

Contact: [support@adaptfuture.com](mailto:support@adaptfuture.com)



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# TVS-IOT

Description of the Product

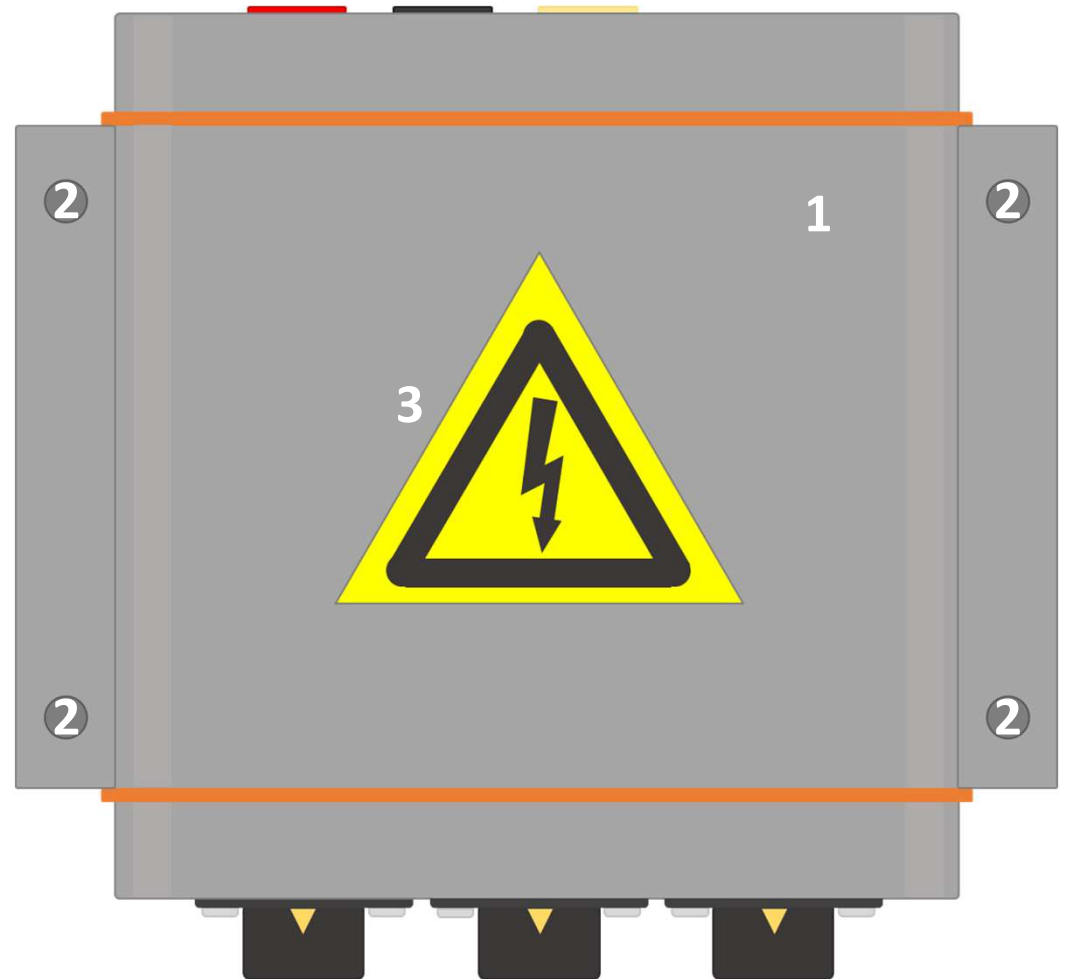
# Traction Voltage Simulation (TVS) IoT device

Main purpose with the TVS-IOT device is to simulate 60V DC - 1000V DC traction voltage (high voltage Class-B) in the training rigs or vehicles and to create the behaviour of a traction voltage battery or traction voltage system, so that the training experience is as close as possible to the real-life operations. To ensure safe training to the trainers and technicians, TVS-IOT product has active monitoring of traction voltage and prevents from hazardous situation during practical operations with simulated traction voltage. During traction voltage simulation all actions on the traction voltage are monitored and logged. Current of the traction voltage is very limited and cannot harm person, instead alarm is triggered to inform trainer and participant.

Number of different simulation scenarios and behaviour can be remotely activated from Adapt Future application used in the tablet or another device that has web browser. Different features can be accessible to different users based on purchased services and TVS-IOT package. Specific OEM requested integration can be made and more functionality can be enabled for training simulation like HVIL simulation from 5 to 35 VDC, Open/Short circuit of system wiring, Analog or digital input from the training rig or vehicle and other customized features.

## Top View

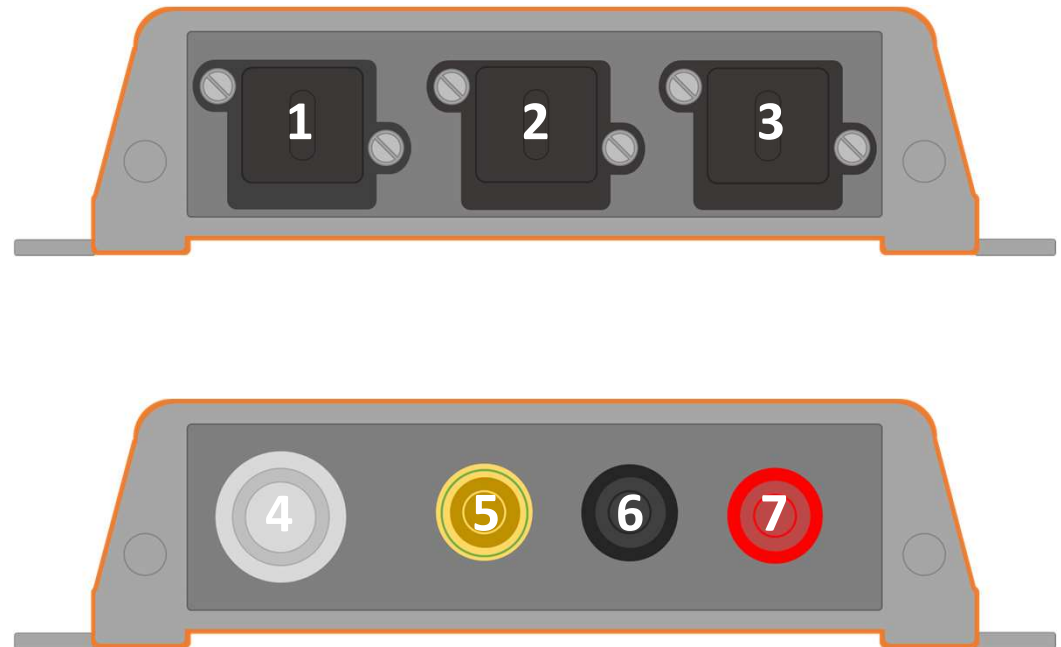
1. TVS-IOT module
2. Installation brackets with 4mm holes
3. Hazardous Voltage label



## Rear & Front View

1. USB Type B for power supply
2. USB Type A for connectivity and accessories \*
3. OEM integration interface connector \*
4. Push-button and LED indicator
5. Ground connection for Traction Voltage rig
6. Negative terminal connection Traction Voltage rig (High Voltage - Class B)
7. Positive terminal connection Traction Voltage rig (High Voltage - Class B)

\* Available only with Service Pack or OEM request

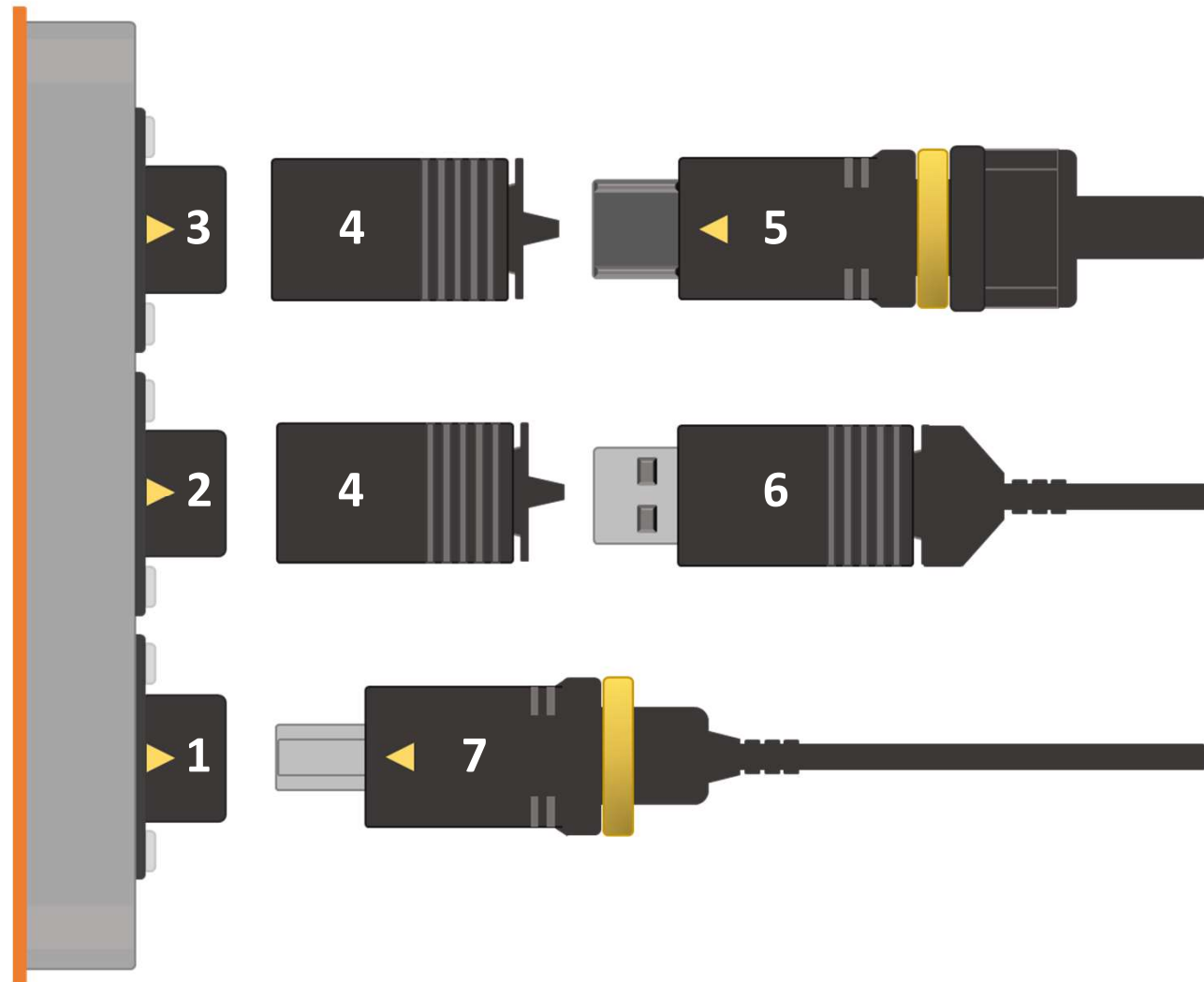




## Power and Accessory Cables

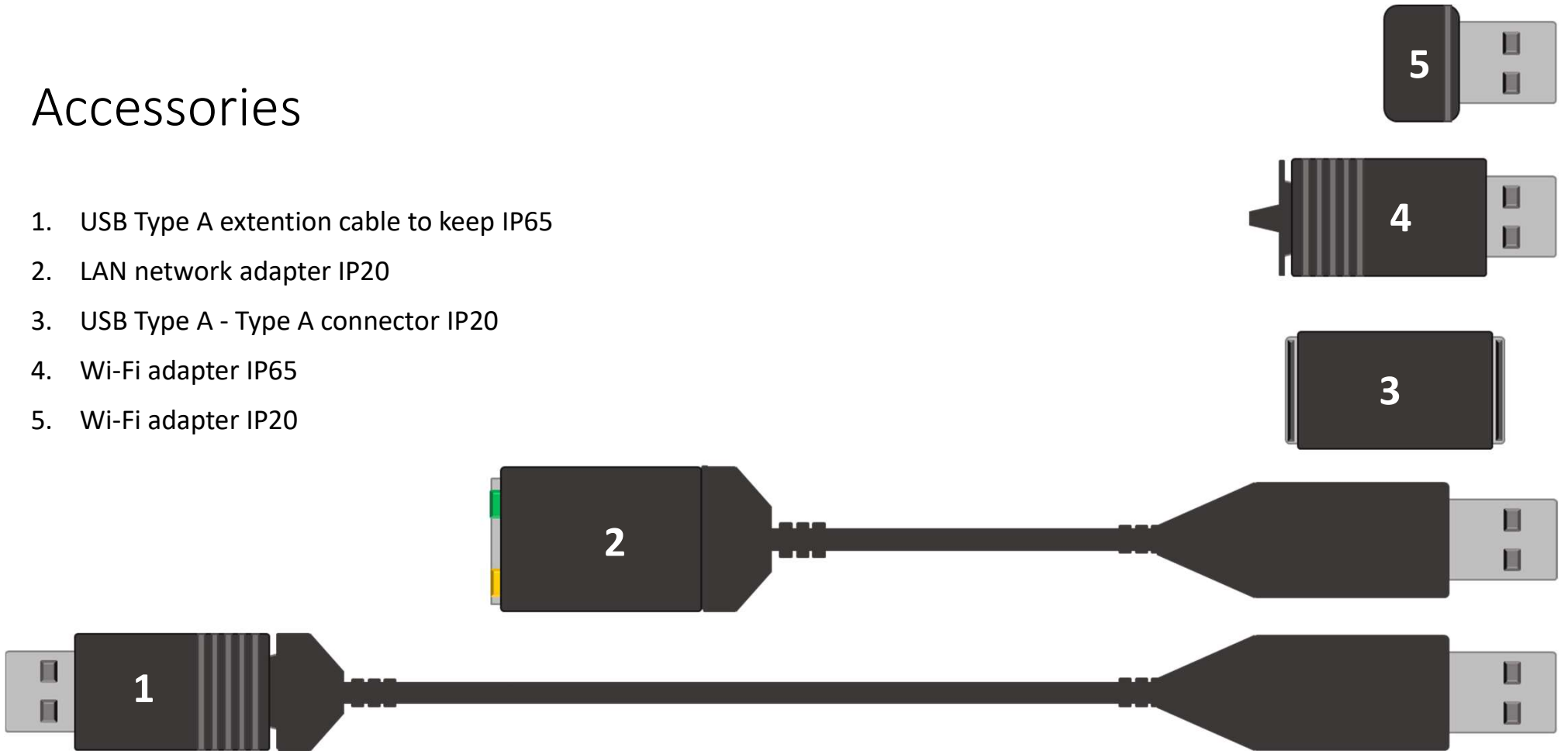
1. USB Type B for power supply
2. USB Type A for connectivity and accessories \*
3. OEM integration interface connector \*
4. IP65 connector plug
5. OEM integration interface cable 10 pins \*
6. USB Type A cable/extension \*
7. USB Type B power supply cable

\* Available only with Service Pack or OEM request



# Accessories

1. USB Type A extention cable to keep IP65
2. LAN network adapter IP20
3. USB Type A - Type A connector IP20
4. Wi-Fi adapter IP65
5. Wi-Fi adapter IP20

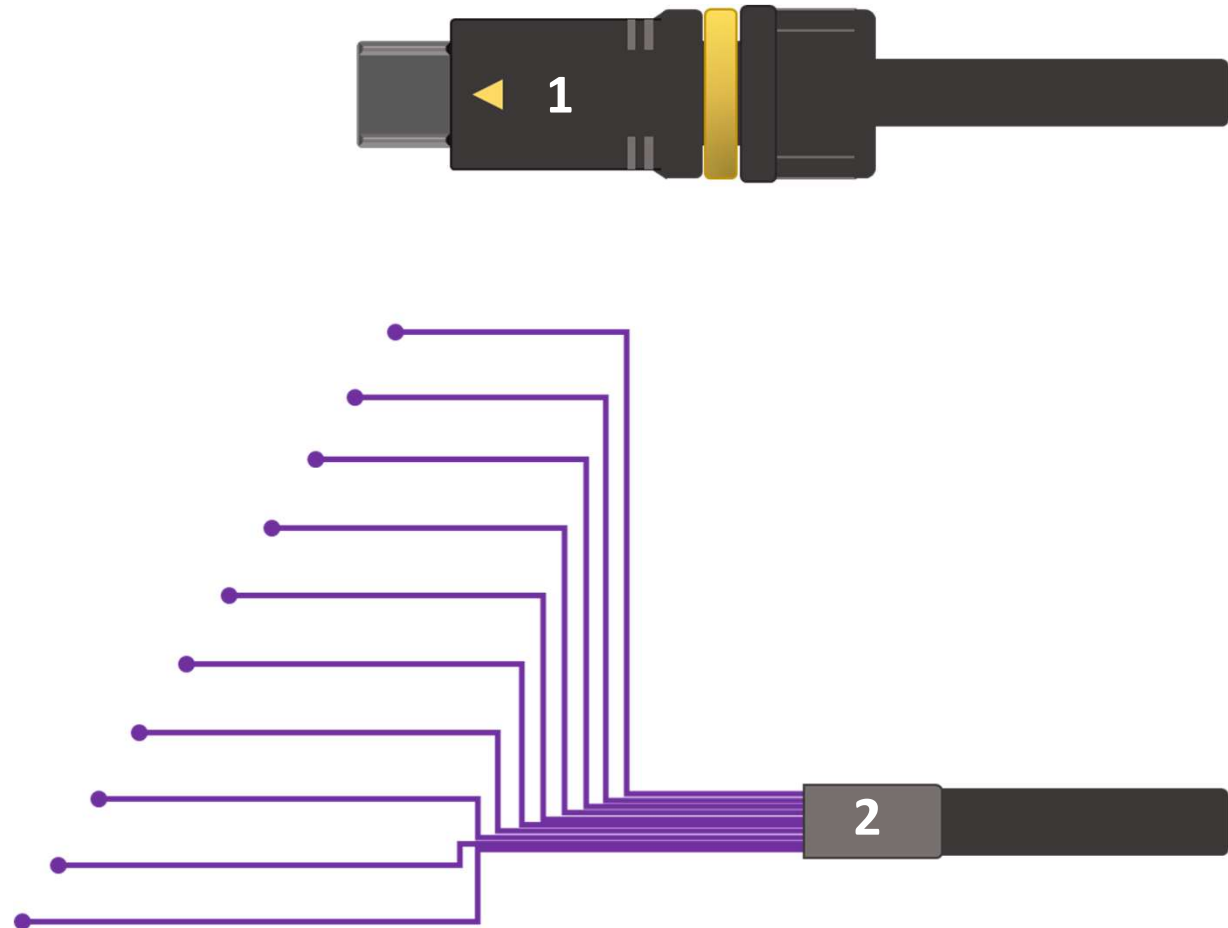


# OEM Integration

## 1. OEM integration interface 10PIN

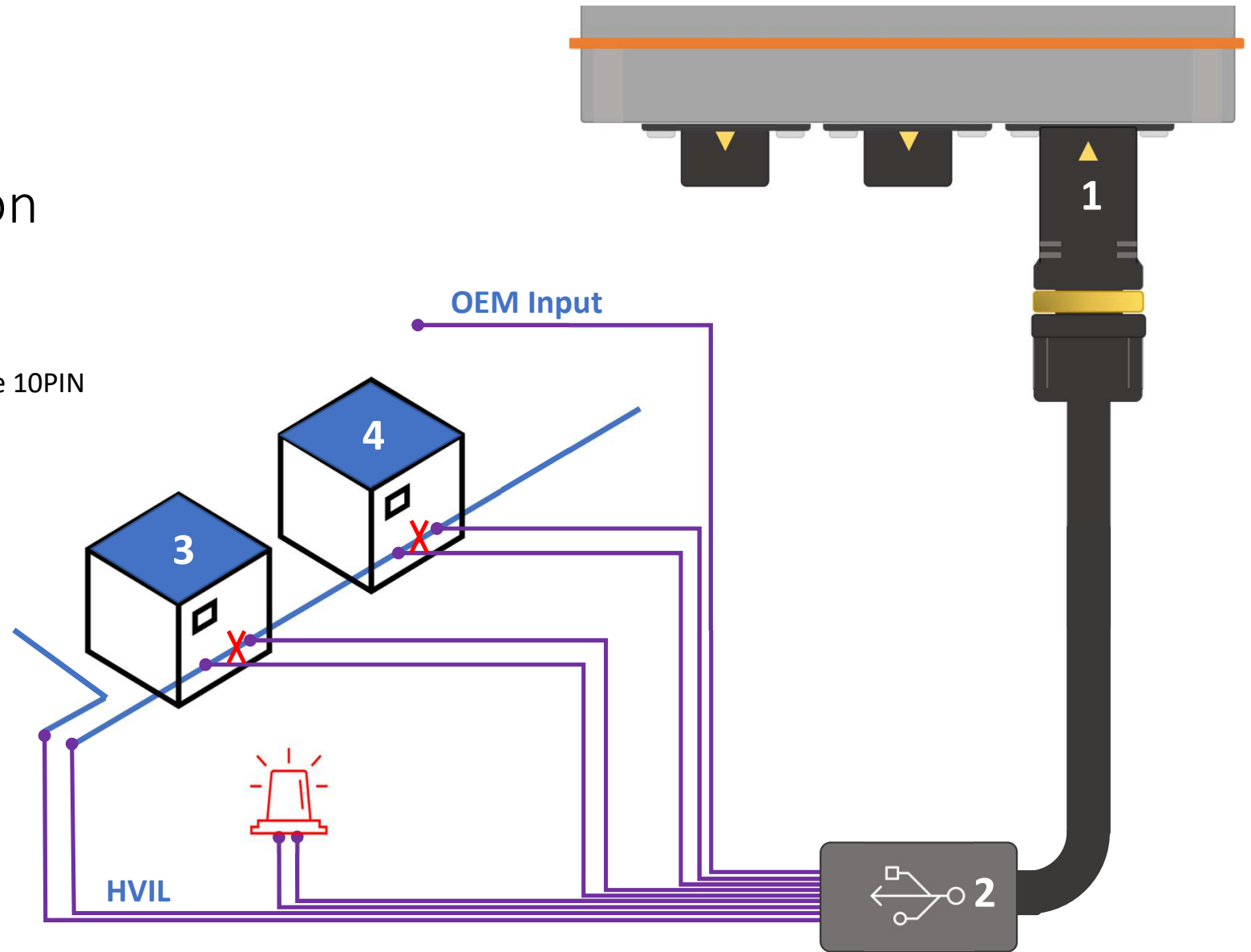
## 2. OEM Integration I/O wires:

- HVIL output 6V DC – 36V DC
- GND isolated ground
- LED red (output)
- LED blue (output)
- LED green (output)
- Emergency switch input
- GPIO 1 (conf. input or output)
- GPIO 2 (conf. input or output)
- GPIO 3 (conf. input or output)
- GPIO 4 (conf. input or output)



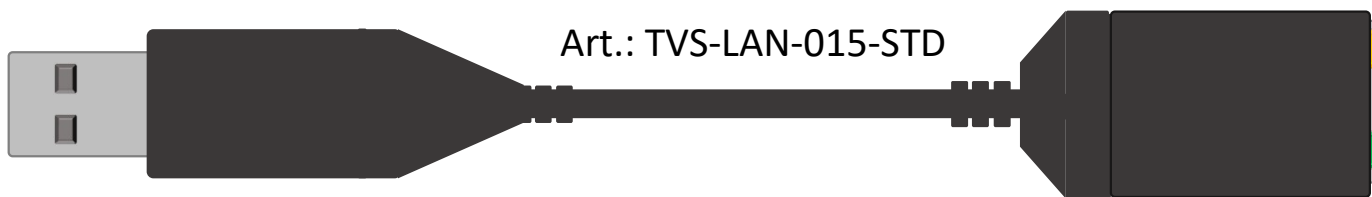
# OEM Integration Example

1. OEM integration interface 10PIN
2. OEM adaptation unit
3. OEM component A
4. OEM Component B

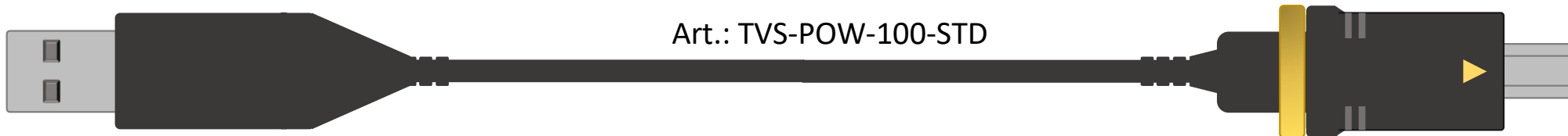


# TVS-IOT

Parts Catalog



Art.: TVS-LAN-015-STD



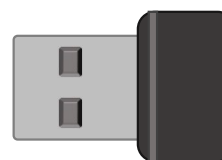
Art.: TVS-POW-100-STD



Art.: TVS-ACC-100-STD



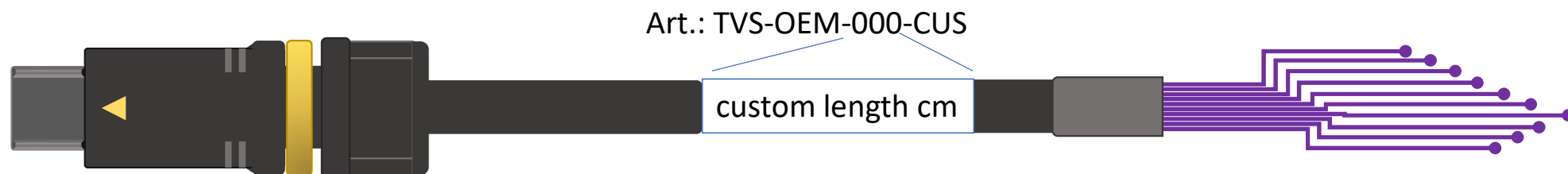
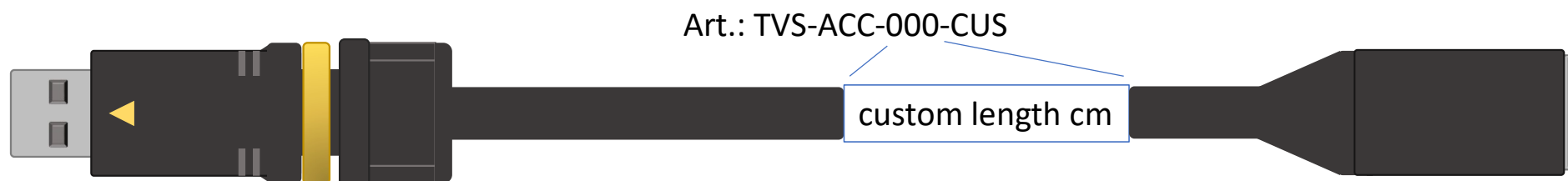
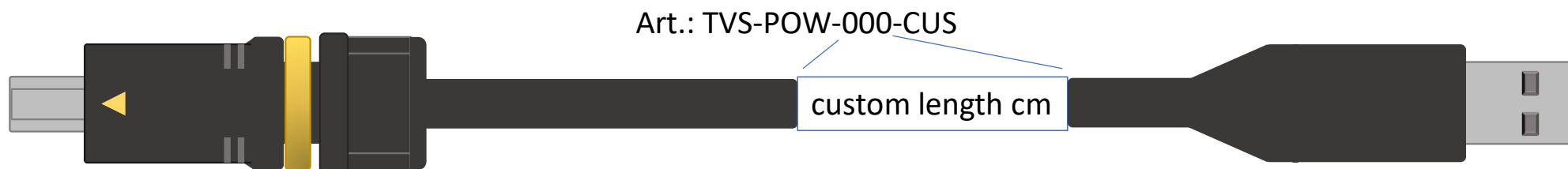
Art.: TVS-WIF-IP6-STD

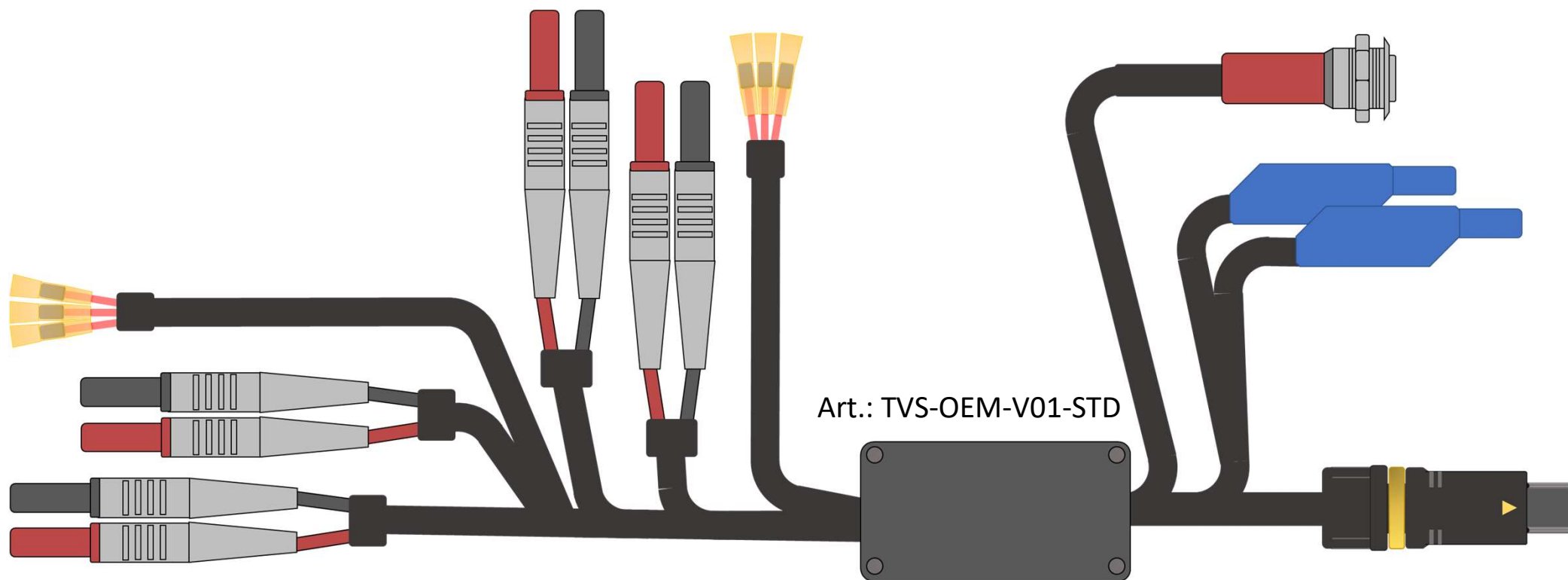


Art.: TVS-WIF-IP2-STD



Art.: TVS-ACC-A2A-STD







Traction Voltage NO (+/-)  
Stable contactor (Max 0.1A)  
GPIO-1 (same GPIO-4)

Extra Low Voltage NO/NC  
Bi-stable state (Max 1A)  
GPIO-2 (same GPIO-3)

Emergency Switch / LED

HVIL  
5-35V DC

Connector to TVS-IOT

GPIO-3

GPIO-4

GPIO-4

