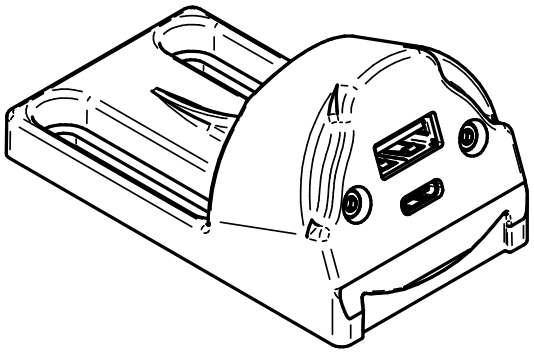
IntegraBus
PCS-ACH-xxx
Hybrid USB type-A and USB type-C Charger

Datasheet
Rev. 02



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1. Product Overview

The PCS-AAH-xxx double USB type-A charger module intended for use in buses/coaches. It allows two connected and charged device in same time.
The charger has two high-power USB type-A port. These ports can be used with most of the popular mobile devices.

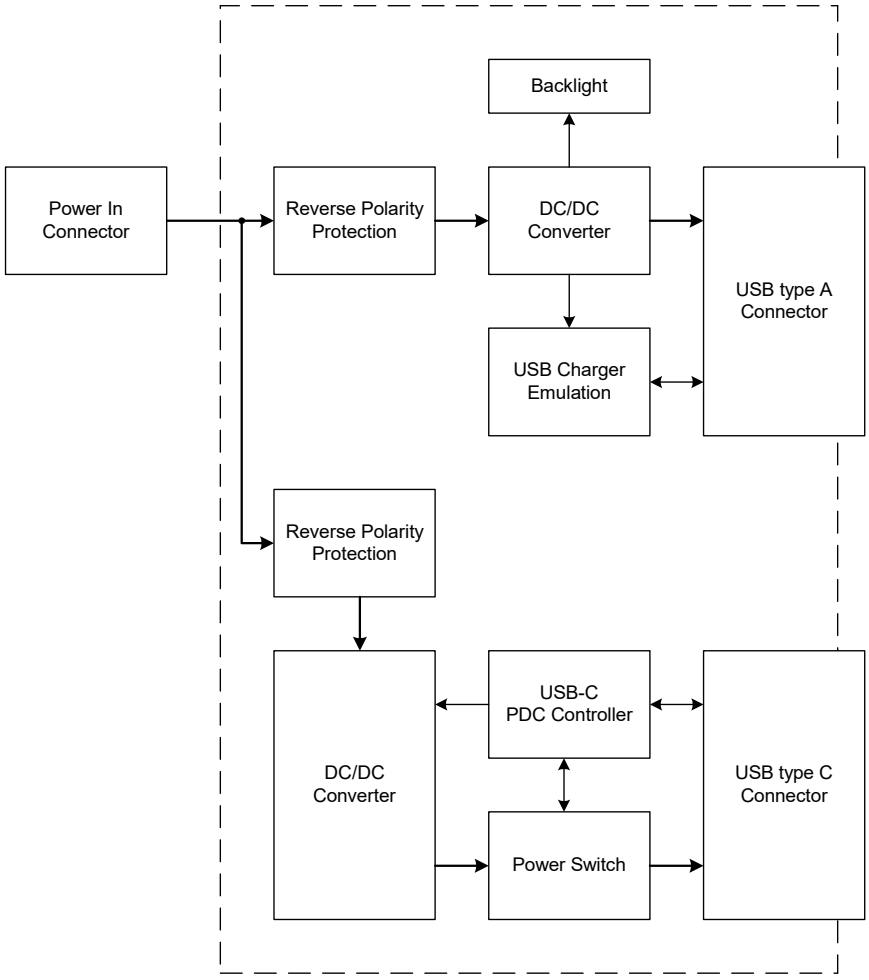
The USB type-C port is designed especially for charging high power mobile devices like new generation notebooks.

The mechanical construction of PCS-AAH charger is perfectly fit for most of seat frame systems used in caches.

2. Electrical Specification

		Min.	Norm.	Max	
1.	Supply Voltage	22	24	40	V
2.	Operating Temperature	-40		+85	°C
	USB type-A Port				
3.	Output Voltage	4.75	5	5.25	V
4.	Output Current (@ 5V output voltage)			2.5	A
5.	Efficiency of USB-A port	87			%
6.	Output Power			12.5	W
	USB type-C Port				
7.	Output Voltage	4.75 8.50 11.4 14.2 18.8	5 9 12 15 20	5.25 9.50 12.6 15.8 21.2	V
8.	Output Current at 5V output voltage at 9V output voltage at 12V output voltage at 15V output voltage at 20V output voltage			3.0 3.0 2.5 2.0 1.5	A
9.	Efficiency of USB-C port	92			%
10.	Output Power			30	W
11.	Backlight		Blue		

3. System Diagram



4. Functional Description

- Two mobile devices can be charged simultanously
- Standard USB type-A and USB type-C connector outputs
- USB type-A output can supply 2.5A current maximum at 5V output voltage
- USB type-C output can supply 30W power maximum at 20V output voltage
- Easy to install
- Supported mobile devices:
    - iPod, iPhone, iPad
    - Android phones and tabs
    - Notebooks with USB type-C charging capability
- Supported Charge Profiles On USB type-A connector:

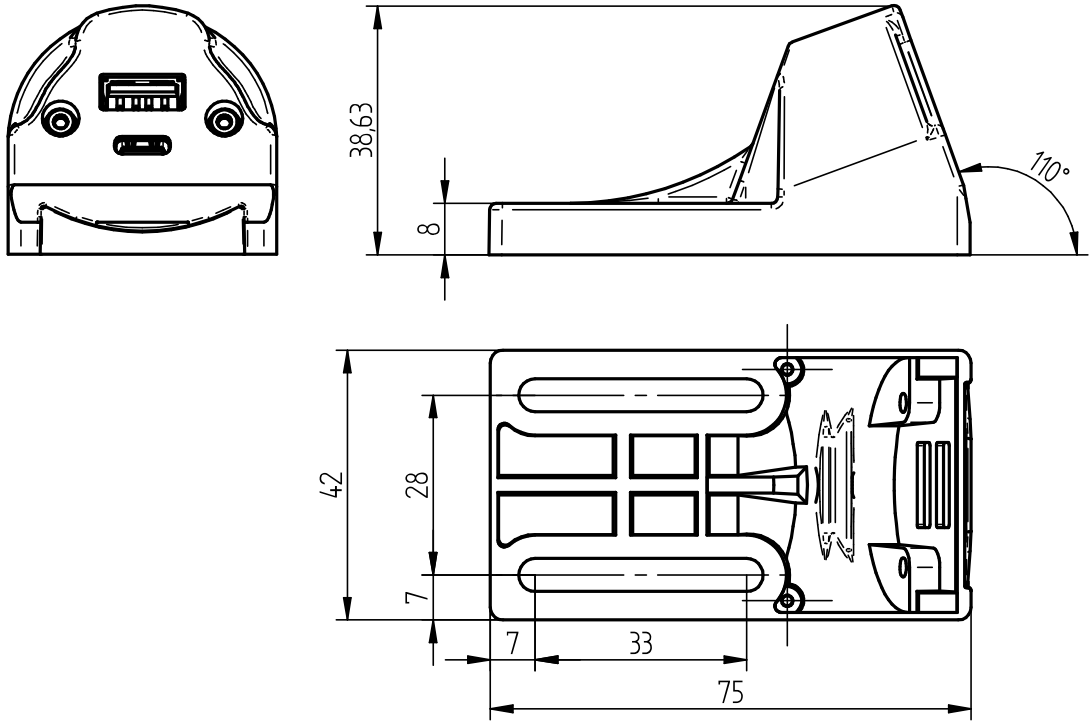
  - Divider 1 DCP, (required to apply 2 V and 2.7 V on D+ Line on the D+ and D– Lines)
  - Divider 2 DCP, required to apply 2.7 V and 2 V on the D+ and D– Lines
  - Divider 3 DCP, required to apply 2.7 V and 2.7 V on the D+ and D- Lines
  - BC1.2 DCP, required to short the D+ Line to the D– Line
  - Chinese Telecom Standard YD/T 1591-2009 Shorted Mode, required to short the + Line to the D– Line
  - 1.2 V on both D+ and D– Lines
- Standard USB type-C Power Delivery (PD) compatibility
- Available charging powers on USB type-C connector:
  - 15W at 5V output voltage
  - 27W at 9V output voltage
  - 30W at 12V output voltage
  - 30W at 15V output voltage
  - 30W at 20V output voltage
- Automotive environment compatible design
- Overcurrent protection, overvoltage protection, thermal protection

5. Certifications

ECE R10 certification:	E-24 10R-041054
ECE R118 certification:	Housing weight is less then 15 g, application of R118 is not necessary on housing, Power cable is R118 certified.

6. Mechanical Specification

- Rigid plastic housing
- Material: PC ABS
- Easy and stable installation with attached special screw nuts
- Default hosing colour: Black, more colours are available upon request



7. Installation

The product can be installed between the seats, fixed on the seat-rail by hammerhead nuts.
The charger is fixed at the seat row in front of the passenger.

8. Ordering Codes

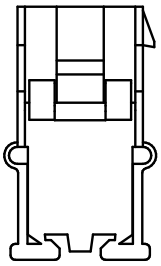
PCS - ACH - _ _ _ _

PCS	Procharger - Seat Mount charger
ACH	USB type-A and USB type-C charger High power
Connector options:	
T	Tyco JPT connector
M	Molex Microfit 3.0(TM) connector
F	FF250 connector
X	No connector
Wire length options:	
03	300mm
08	800mm
10	1000mm
16	1600mm
Cable protection options:	
S	Shrinking tube
N	Plastic protector tube
X	No additional cable protection

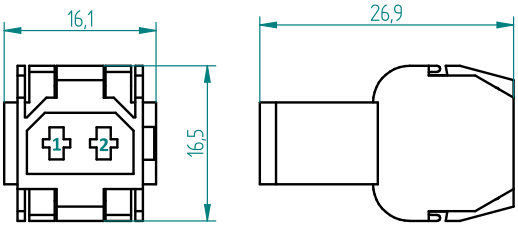
9. Connector Pinouts

Connector option " - T":

Housing: Tyco 964586
Terminal: Tyco 964273-2

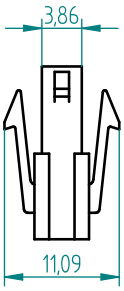


Pin	Wire	Function
1	RED	+12 – 24V Input
2	BLACK	GND Input



Connector option " - M":

Housing: Molex 430200208
Terminal: Molex 43031



Pin	Wire	Function
1	RED	+12 – 24V Input
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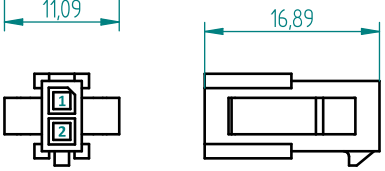
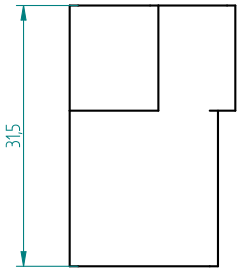
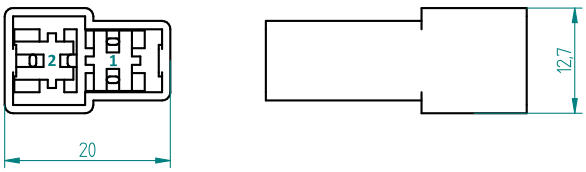


Connector option " - F":

Housing: Tyco 180908
Terminal: Tyco 293041



Pin	Wire	Function
1	RED	+12 – 24V Input
2	BLACK	GND Input



10. Document History

rev	History	Date	Author
R02	Updated drawings Bandaged tape cable option has been removed	2023.09.20.	epapp
R01	First release	2020.12.03.	epapp