

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

Datasheet
Rev. 03

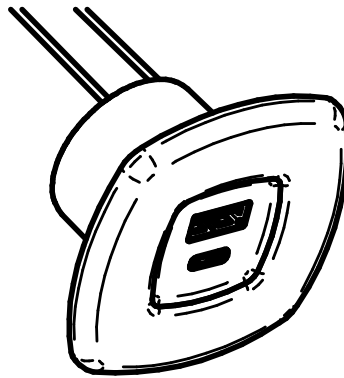


Table of contents:

1. Product Overview.....	2
2. Electrical Specification.....	2
3. System Diagram.....	3
4. Functional Description	3
5. Certification.....	4
6. Mechanical Specification.....	4
7. Installation.....	5
8. Ordering Codes	6
9. Connector Pinouts.....	7
10. Document History	8

1. Product Overview

The PCR-ACH-xxx hybrid USB type-A and USB type-C charger module intended for use in buses/coaches. It allows two connected and charged device in same time.

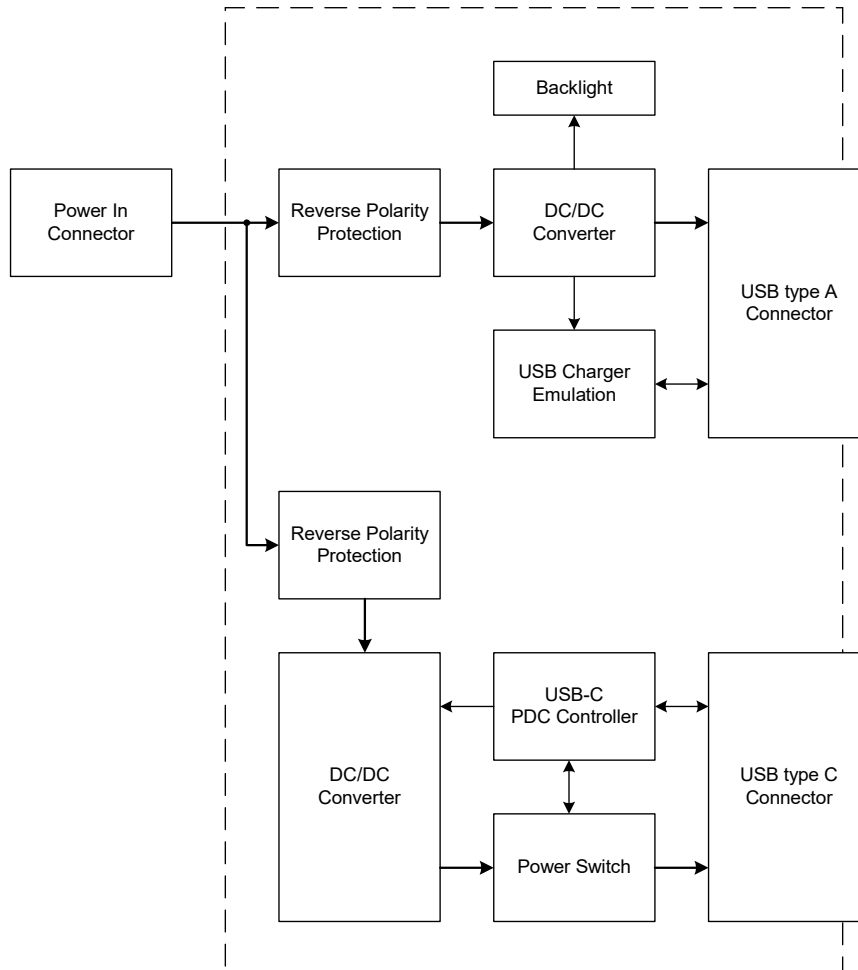
PCR-ACH charger has a USB type-A port and a high-power USB type-C port. These ports can be used with most of the popular mobile devices.

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

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	5	5.25	V
		8.50	9	9.50	
		11.4	12	12.6	
		14.2	15	15.8	
		18.8	20	21.2	
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	A
				3.0	
				2.5	
				2.0	
				1.5	
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 simultaneously
- 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:
 - o iPod, iPhone, iPad
 - o Android phones and tabs
 - o Notebooks with USB type-C charging capability
- Supported Charge Profiles On USB type-A connector:

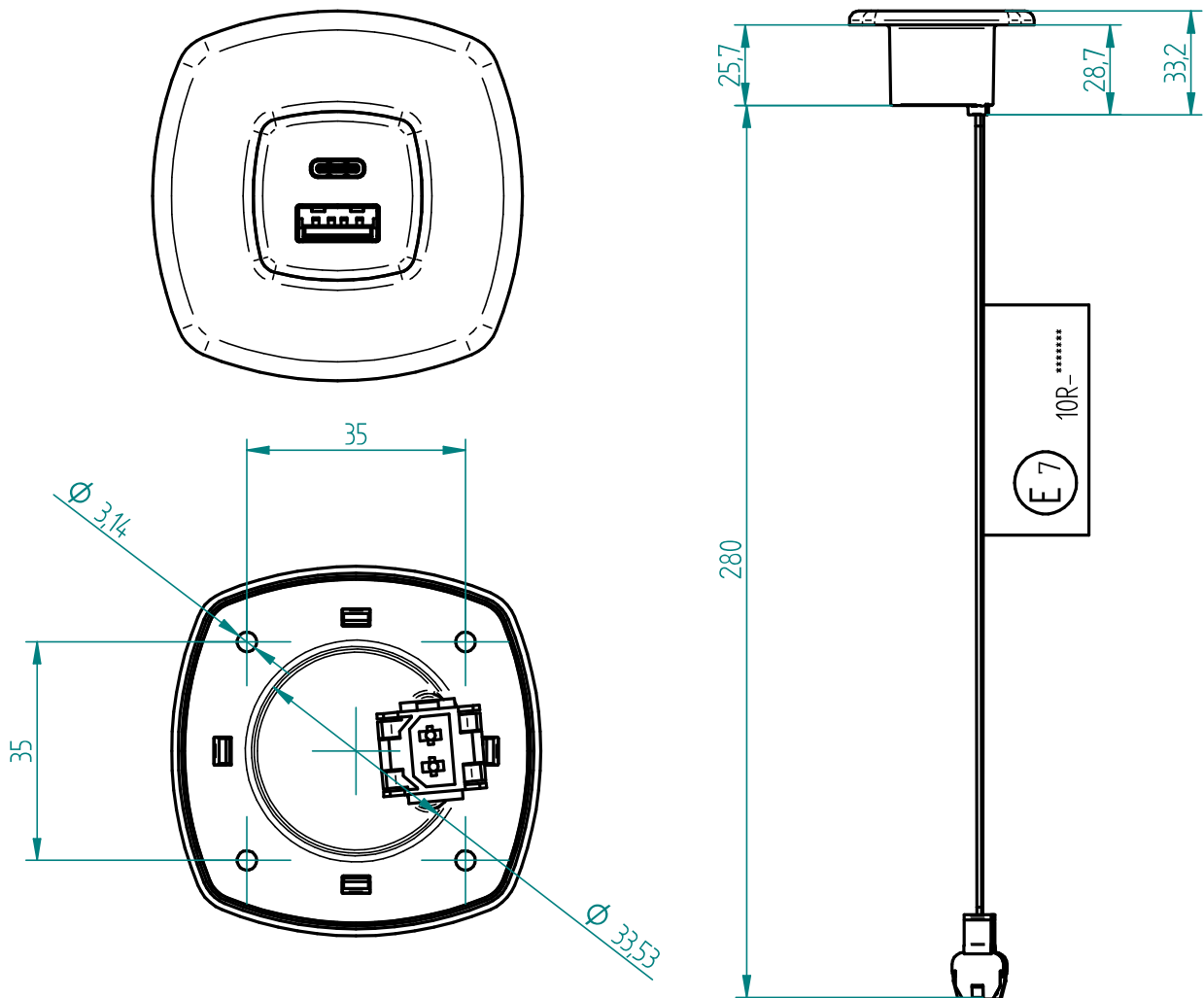
- Divider 1 DCP, (required to apply 2 V and 2.7 V on D+ Line on the D+ and D– Lines)
- Divider 2 DCP, required to apply 2.7 V and 2 V on the D+ and D– Lines
- Divider 3 DCP, required to apply 2.7 V and 2.7 V on the D+ and D- Lines
- BC1.2 DCP, required to short the D+ Line to the D– Line
- Chinese Telecom 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 than 15 g, application of R118 is not necessary on housing, Power cable is R118 certified.

6. Mechanical Specification

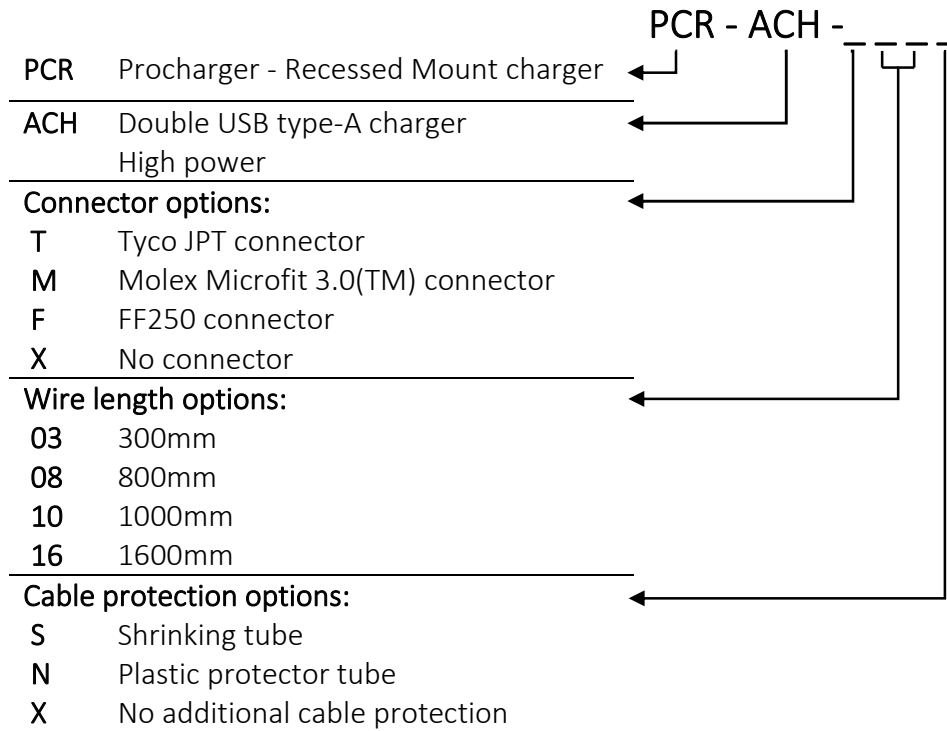
- Plastic housing for recessed mounting on surface
- 35 mm hole diameter for snap in installation
- >36 mm hole diameter for normal installation
- Material: PC ABS
- type of connector can be defined individual
- 4 mounting screw hole, mounting diameter 43 mm, screw diameter up to 3,1 mm
- Black housing with opal middle part for best light opacity. More colours are available upon request.



7. Installation

The installation requires a round hole of 35 mm (1.38") diameter.

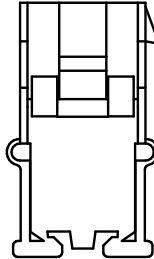
8. Ordering Codes



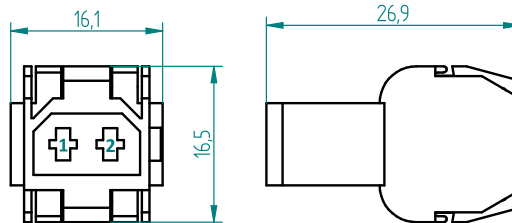
9. Connector Pinouts

Connector option “ - T”:

Housing: Tyco 964586
 Terminal: Tyco 964273-2

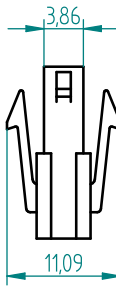


Pin	Wire	Function
1	RED	+12 – 24V Input
2	BLACK	GND Input

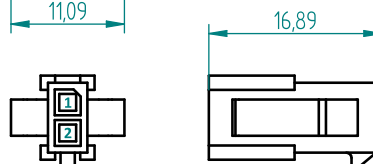


Connector option “ - M”:

Housing: Molex 430200208
 Terminal: Molex 43031

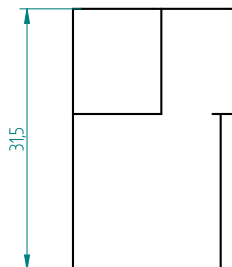


Pin	Wire	Function
1	RED	+12 – 24V Input
2	BLACK	GND Input

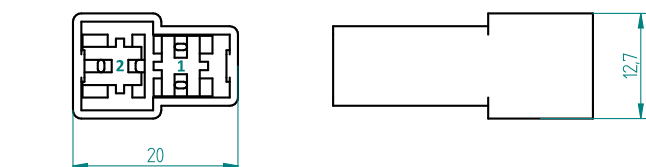


Connector option “ - F”:

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
R03	Updated drawings Bandaged tape cable option has been removed	2023.09.20.	epapp
R02	Updated electrical specification: 3.1 Supply voltage 3.7 USB-C output current	01.oct.2021.	epapp
R01	First release	03.dec.2020.	epapp