

IntegraBus  
PCS-AAL-xxx  
Double USB type-A Charger

Datasheet  
Rev. 02

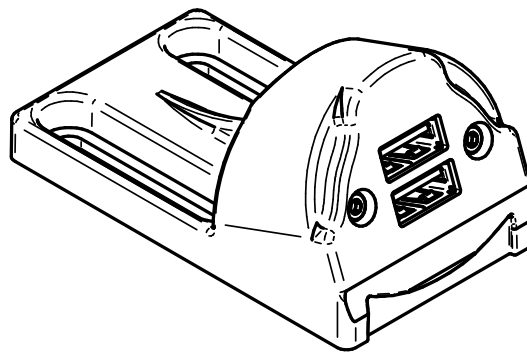


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## 1. Product Overview

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The PCS-AAL-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 low-power USB type-A port. These ports can be used with most of the popular mobile devices.

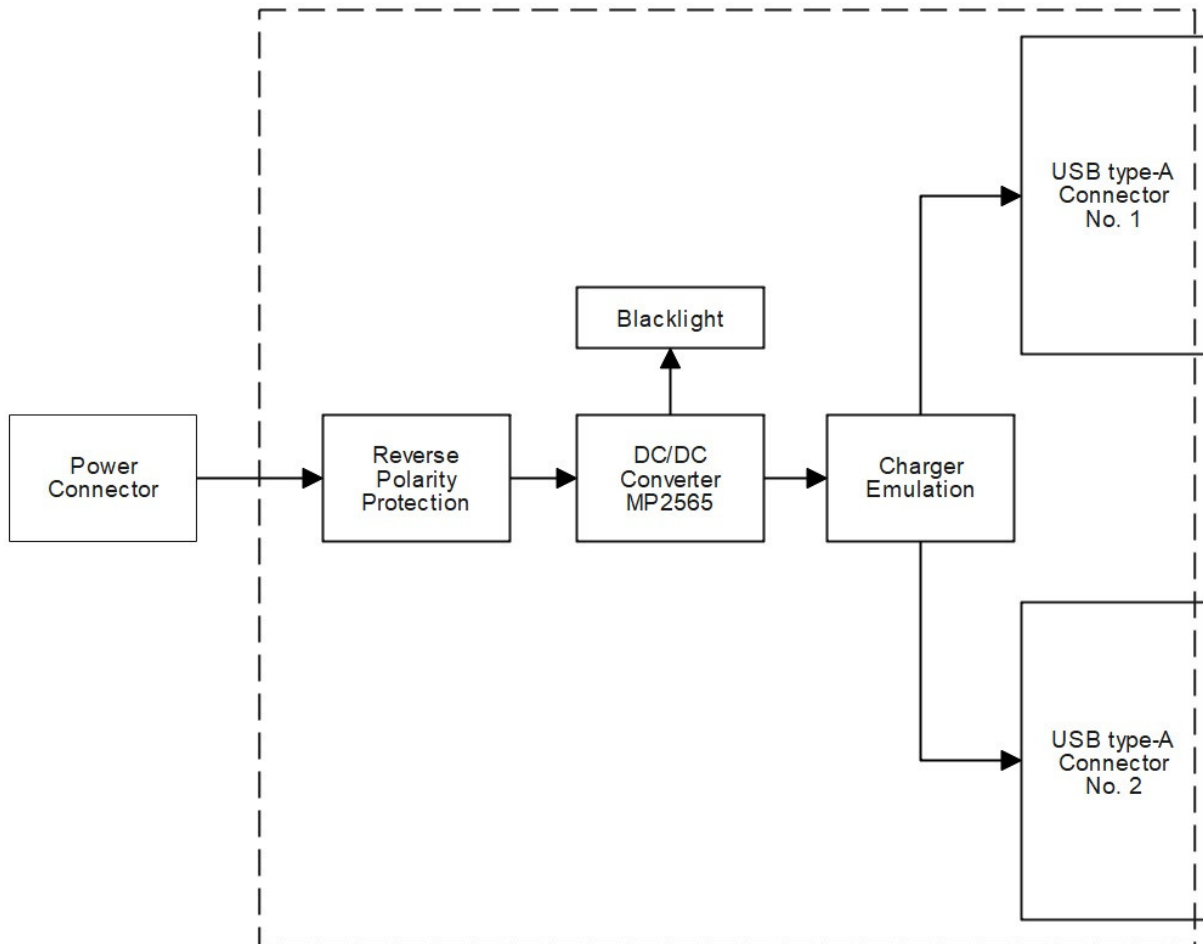
The mechanical construction of PCS-AAH charger is perfectly fit for most of seat frame systems used in caches.

## 2. Electrical Specification

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|    |                                      | Min. | Norm. | Max   |    |
|----|--------------------------------------|------|-------|-------|----|
| 1. | Supply Voltage                       | 10   | 24    | 48    | V  |
| 2. | Operating Temperature                | -40  |       | +85   | °C |
|    | <b>USB type-A Port</b>               |      |       |       |    |
| 3. | Output Voltage                       | 4.75 | 5     | 5.25  | V  |
| 4. | Output Current (@ 5V output voltage) |      |       | 1     | A  |
| 5. | Efficiency of USB-A port             | 87   |       |       | %  |
| 6. | Output Power                         |      |       | 2 x 5 | W  |
|    |                                      |      |       |       |    |
| 7. | Backlight                            |      | Blue  |       |    |
|    |                                      |      |       |       |    |

### 3. System Diagram



### 4. Functional Description

- Two mobile devices can be charged simultaneously.
- Standard USB type-A connector outputs,
- USB type-A output can supply 1A current maximum at 5V output voltage,
- Easy to install
- Supported mobile devices:
  - o iPod, iPhone, iPad,
  - o Android phones and tabs
- Supported Charge Profiles On USB type-A connector:
  - o Divider 1 DCP, (required to apply 2 V and 2.7 V on D+ Line on the D+ and D- Lines)
  - o Divider 2 DCP, required to apply 2.7 V and 2 V on the D+ and D- Lines
  - o Divider 3 DCP, required to apply 2.7 V and 2.7 V on the D+ and D- Lines

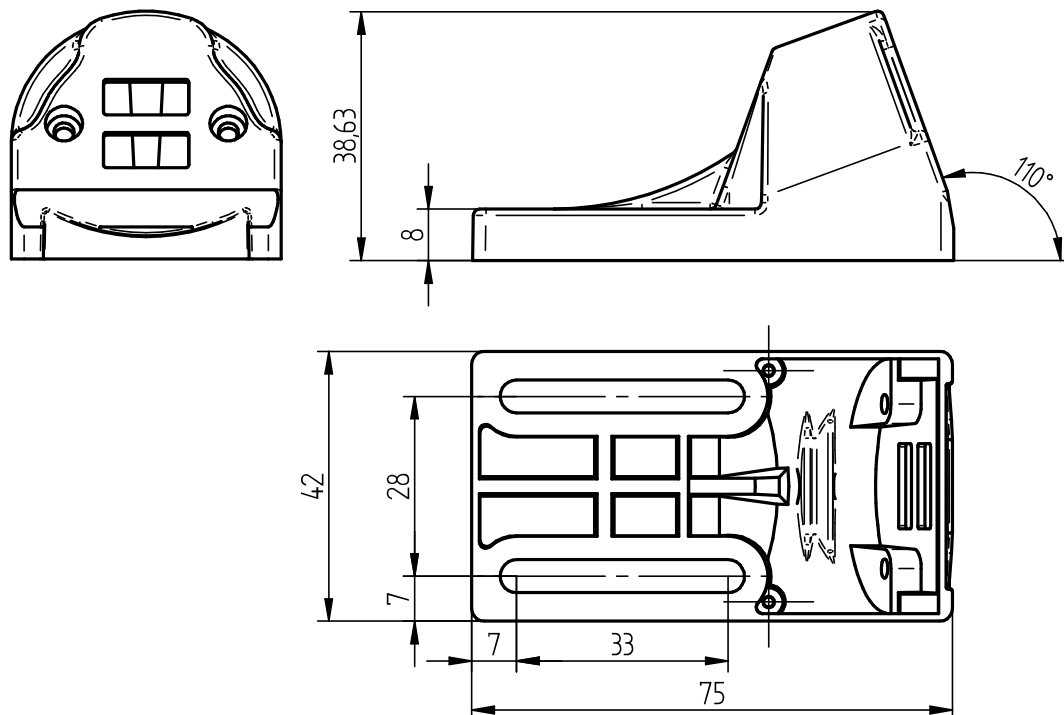
- BC1.2 DCP, required to short the D+ Line to the D- Line
- Chinese Telecom Standard YD/T 1591-2009 Shorted Mode, required to short the + Line to the D- Line
- 1.2 V on both D+ and D- Lines
- Automotive environment compatible design
- Overcurrent protection, overvoltage protection, thermal protection

## 5. Certification

|                         |                                                                                                                   |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|
| 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

- Rigid plastic housing
- Material: PC ABS
- Easy and stable installation with attached special screw nuts
- Default housing colour: Black, optionally 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.

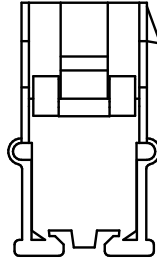
## 8. Ordering Codes

|                                  |                                        |                    |  |
|----------------------------------|----------------------------------------|--------------------|--|
|                                  |                                        | <b>PCS - AAL -</b> |  |
| <b>PCS</b>                       | Procharge Recessed Mount charger       | ←                  |  |
| <b>AAL</b>                       | Double USB type-A charger<br>Low power | ←                  |  |
| <b>Connector options:</b>        |                                        | ←                  |  |
| <b>T</b>                         | Tyco connector                         |                    |  |
| <b>M</b>                         | Molex Microfit 3.0(TM) connector       |                    |  |
| <b>F</b>                         | FF250 connector                        |                    |  |
| <b>X</b>                         | No connector                           |                    |  |
| <b>Wire length options:</b>      |                                        | ←                  |  |
| <b>03</b>                        | 300mm                                  |                    |  |
| <b>08</b>                        | 800mm                                  |                    |  |
| <b>10</b>                        | 1000mm                                 |                    |  |
| <b>16</b>                        | 1600mm                                 |                    |  |
| <b>Cable protection options:</b> |                                        | ←                  |  |
| <b>S</b>                         | Shrinking tube                         |                    |  |
| <b>N</b>                         | Plastic protector tube                 |                    |  |
| <b>X</b>                         | No additional cable protection         |                    |  |

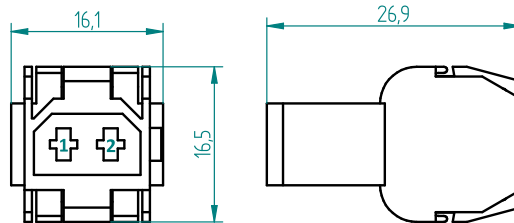
## 9. Connector Pinouts

### Connector option “ - T”:

Housing: Tyco 964586  
 Terminal: Tyco 964273-2

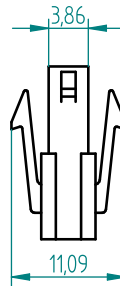


| Pin | Wire  | Function        |
|-----|-------|-----------------|
| 1   | RED   | +12 – 24V Input |
| 2   | BLACK | GND Input       |

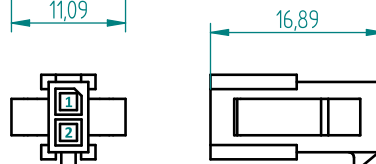


### Connector option “ - M”:

Housing: Molex 430200208  
 Terminal: Molex 43031

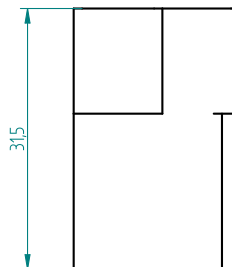


| Pin | Wire  | Function        |
|-----|-------|-----------------|
| 1   | RED   | +12 – 24V Input |
| 2   | BLACK | GND Input       |

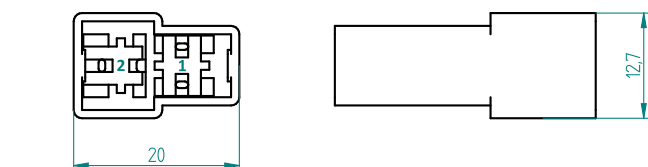


### Connector option “ - F”:

Housing: Tyco 180908  
 Terminal: Tyco 293041



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





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### 10.Document History

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