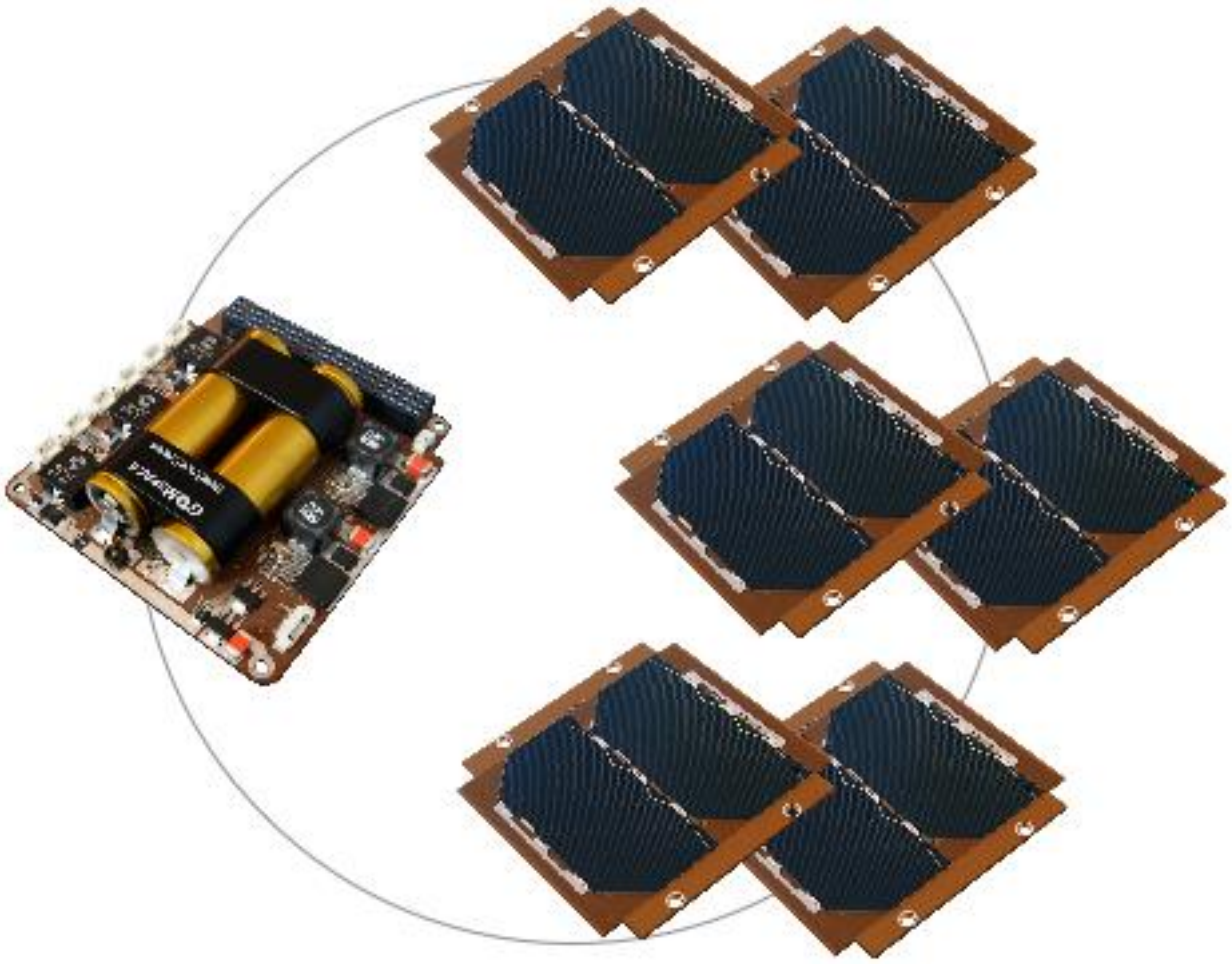


NanoPower
Power Packs

Document
Descriptions of GomSpaces Power Packs for 1U, 2U and 3U

GomSpace A/S | Langagervej 6 | DK-9220 Aalborg East | Denmark
gomspace.com | sales@gomspace.com | T: +45 71 741 741

1 Table of Contents

2 Introduction

GomSpace NanoPower Power Packs systems provides a full power solution for any Cubesat mission in a compact space including maximum power point tracking, charging management, managed power distribution and batteries on a single board.

The Power Packs includes a full configuration of the basic NanoPower boards with solar panels and harnesses. Each pack includes, 6x coarse sun sensors and 3x magnetorquers for attitude determination and control.

The Power Packs does not include Interstages, which can be useful when assembling satellite. They are used to tie the external part of the satellite to the internal, e.g. magnetorquers to the data bus.

Power Packs are compatible with the ISIS and Pumpkin structures and integrate seamlessly with other GomSpace products, e.g. the NanoMind On-Board Computer and related software products for mission management and attitude determination and control.

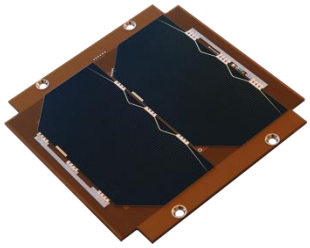
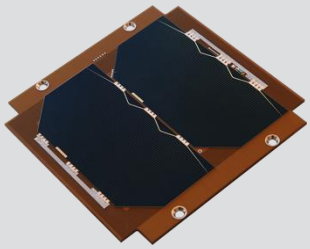
2.1 Related Datasheets

Datasheets can be found on the GomSpace webpage www.gomspace.com or by contacting GomSpace be email: sales@gomspace.com.

Product	Document name
NanoPower P31u	gs-ds-nanopower-p31u-<version>
NanoPower P110	gs-ds-nanopower-p110-<version>
NanoPower BP4	gs-ds-nanopower-bp4-<version>

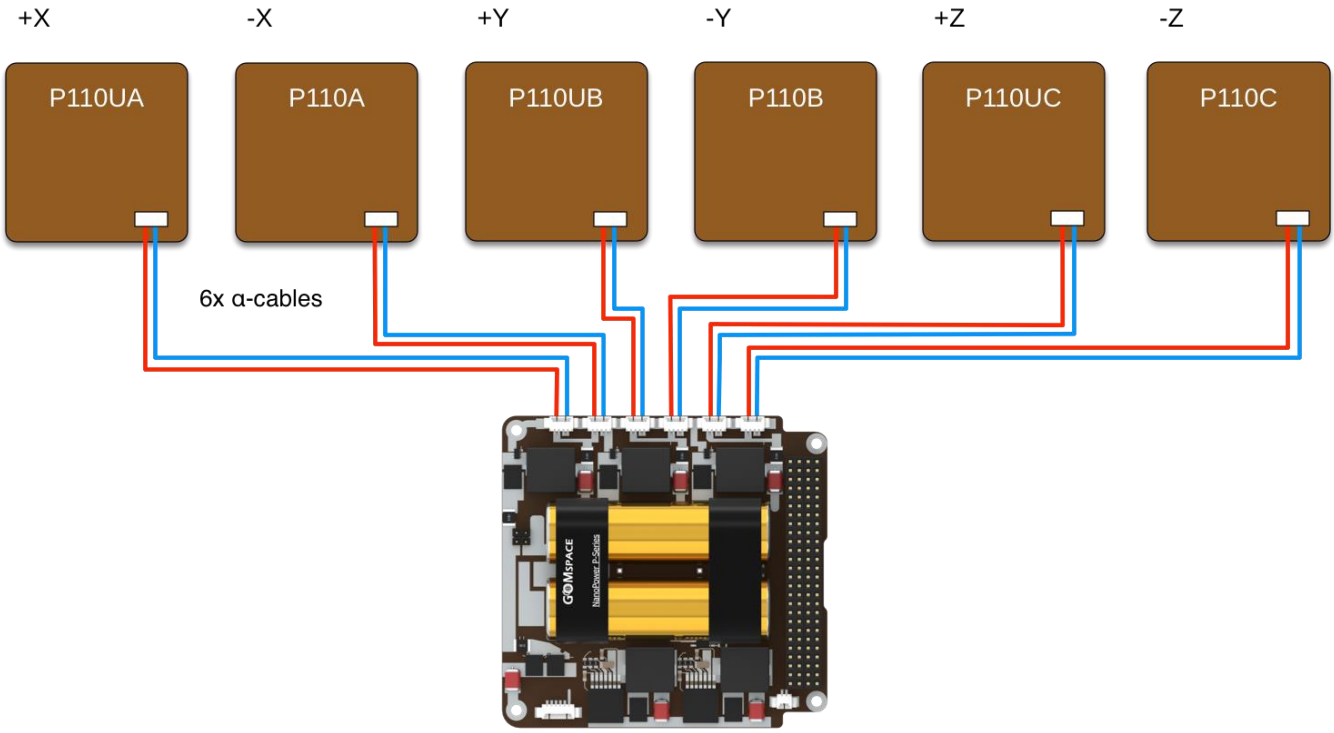
3 Power Pack 1U

The 1U Power Packs contain the GomSpace products listed in the table below.

Amount	GomSpace Name	Description	Picture
1	NanoPower P31u (8 V)	EPS and battery	
3	NanoPower P110 1x A model 1x B model 1x C model	Solar panel	
3	NanoPower P110U 1x A model 1x B model 1x C model	Solar panel	
1	Harness kit	6x α-cable 35 cm	

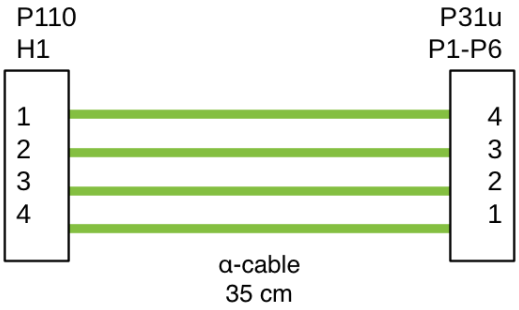
3.1 Connecting the Solar Panels to the EPS

Each of the P110 connector H1 (see datasheet), connects to the P31u connector P1 to P6 (see datasheet).



3.2 Harness Kit

All housings are Molex PicoBlade 4-way housing, 51021-0400.

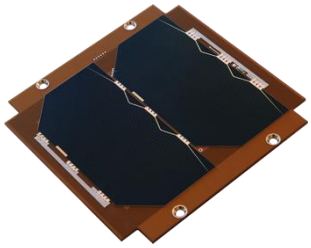
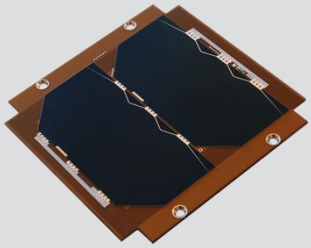
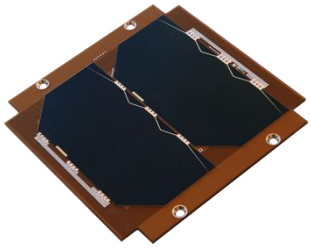


3.3 Electrical Specifications:

- Vbat: 8 V
- Photovoltaic power up to 30 W
- Two regulated power buses: 3.3V@5A and 5V@4A
  - Up to six 3.3V@3A outputs
  - Up to six 5V@3A outputs
- Battery capacity: 2600 mAh

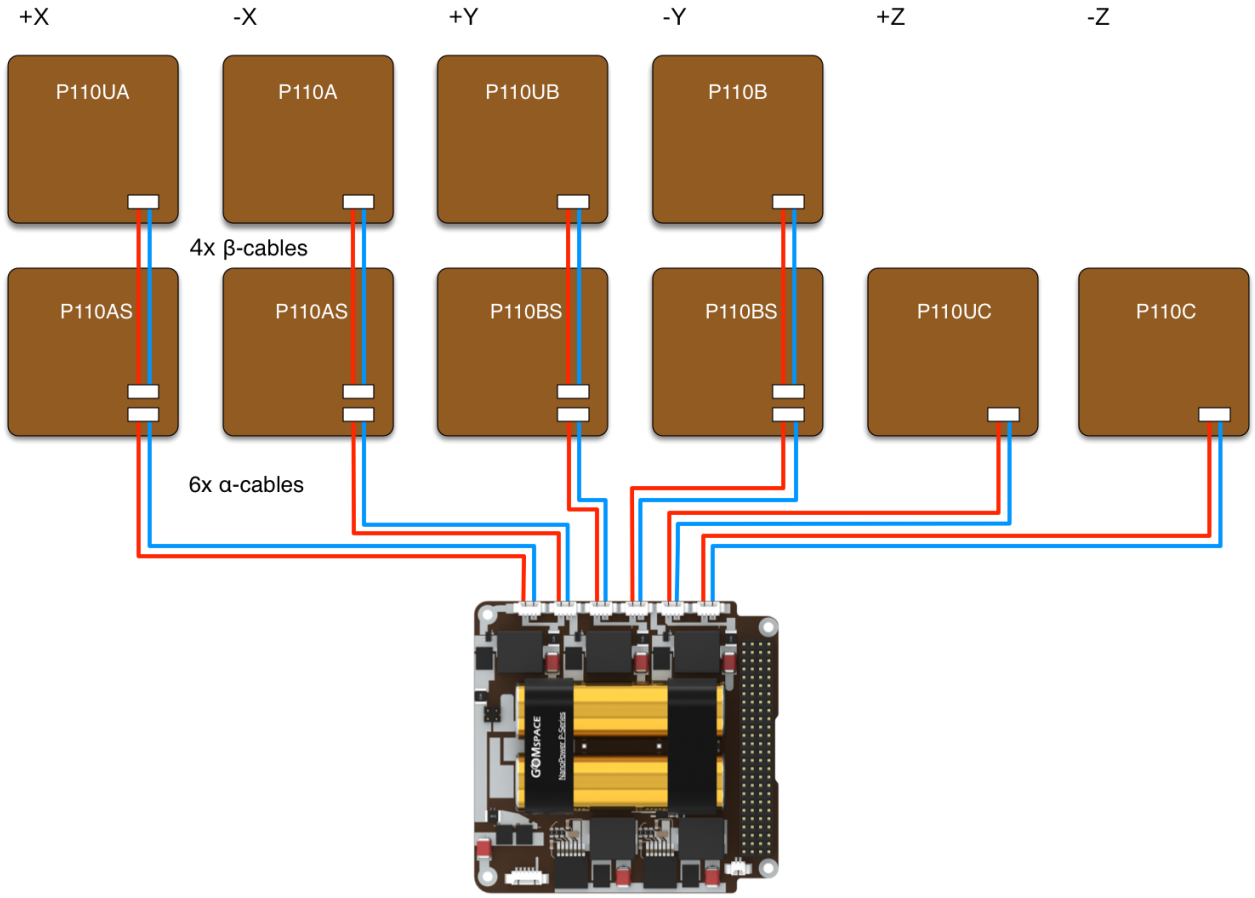
4 Power Pack 2U

The 2U Power Packs contain the GomSpace products listed in the table below.

Amount	GomSpace Name	Description	Picture
1	NanoPower P31u (8 V)	EPS and battery	
3	NanoPower P110 1x A model 1x B model 1x C model	Solar panel	
3	NanoPower P110U 1x A model 1x B model 1x C model	Solar panel	
4	NanoPower P110S 2x A model 2x B model	Solar panel	
1	Harness kit	6x α-cable 35 cm 4x β-cable 20 cm	

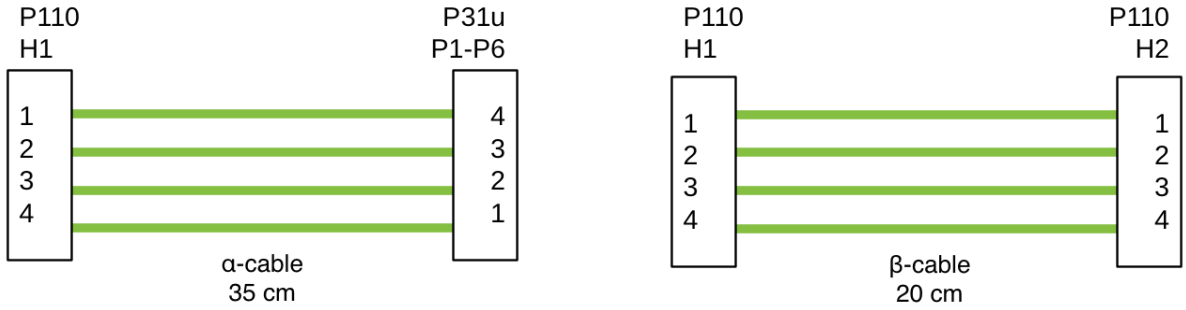
4.1 Connecting the Solar Panels to the EPS

Each of the P110 connector H1 (see datasheet), connects to the P31u connector P1 to P6 (see datasheet).



4.2 Harness Kit

All housings are Molex PicoBlade 4-way housing, 51021-0400.

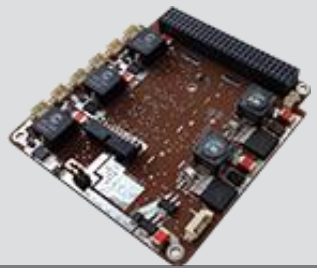
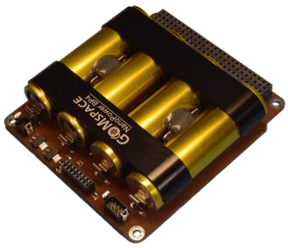
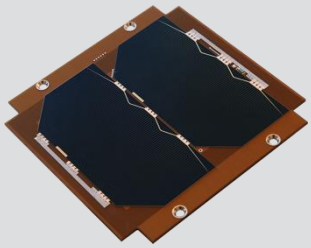
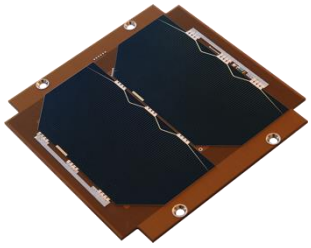
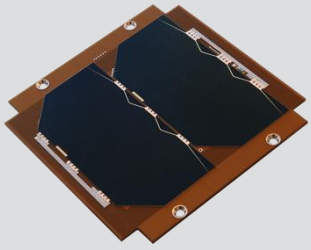


4.3 Electrical Specifications:

- Vbat: 8 V
- Photovoltaic power up to 30 W
- Two regulated power buses: 3.3V@5A and 5V@4A
  - Up to six 3.3V@3A outputs
  - Up to six 5V@3A outputs
- Battery capacity: 2600 mAh

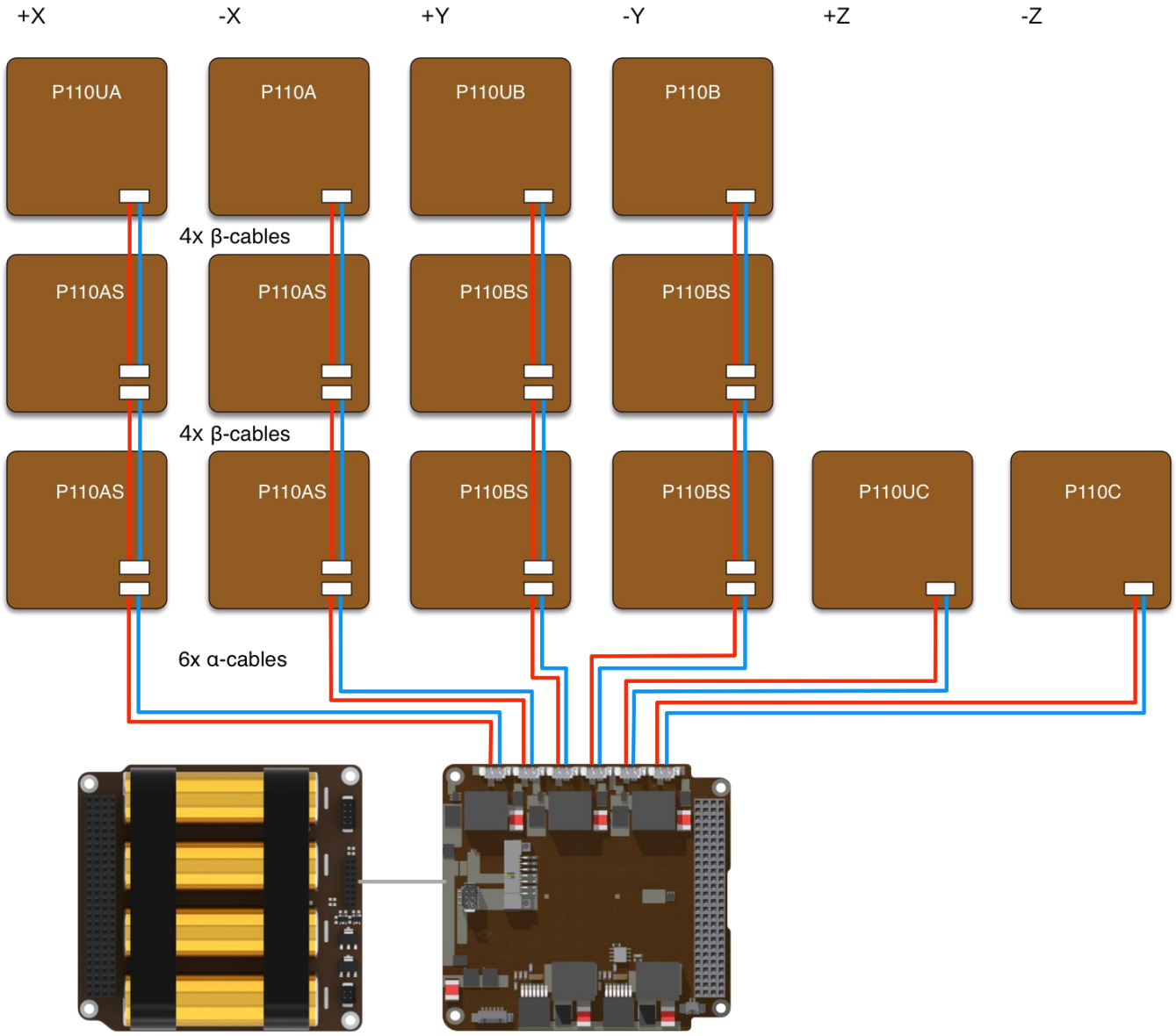
5 Power Pack 3U

The 3U Power Packs contain the GomSpace products listed in the table below.

Amount	GomSpace Name	Description	Picture
1	NanoPower P31u (16 V)	EPS	
1	NanoPower BP4 (16 V)	Battery	
3	NanoPower P110 1x A model 1x B model 1x C model	Solar panel	
3	NanoPower P110U 1x A model 1x B model 1x C model	Solar panel	
8	NanoPower P110S 4x A model 4x B model	Solar panel	
1	Harness kit	6x α-cable 35 cm 8x β-cable 20 cm	

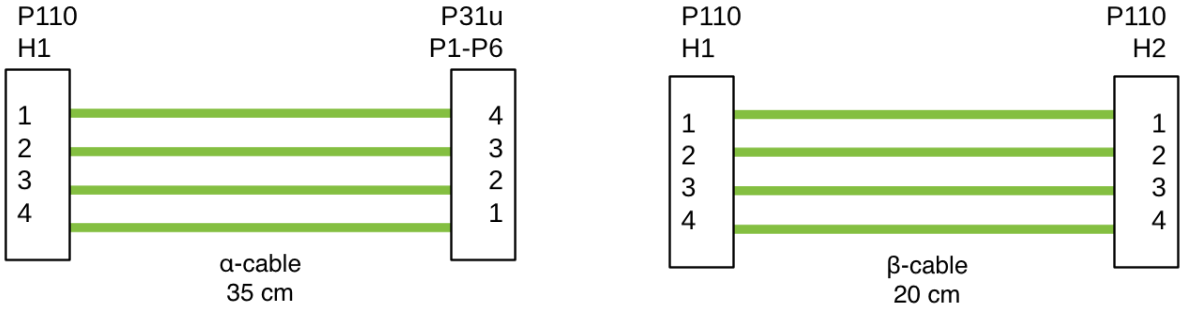
5.1 Connecting the Solar Panels to the EPS

Each of the P110 connector H1 (see datasheet), connects to the P31u connector P1 to P6 (see datasheet).



5.2 Harness Kit

All housings are Molex PicoBlade 4-way housing, 51021-0400.



5.3 Electrical Specifications:

- Choice of two configuration, BP4 option sheet choice
- Vbat: 8 - 16 V
- Photovoltaic power up to 60 W
- Two regulated power buses: 3.3V@5A and 5V@4A
  - Up to six 3.3V@3A outputs
  - Up to six 5V@3A outputs
- Battery capacity: 2600 - 5200 mAh

6 Disclaimer

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