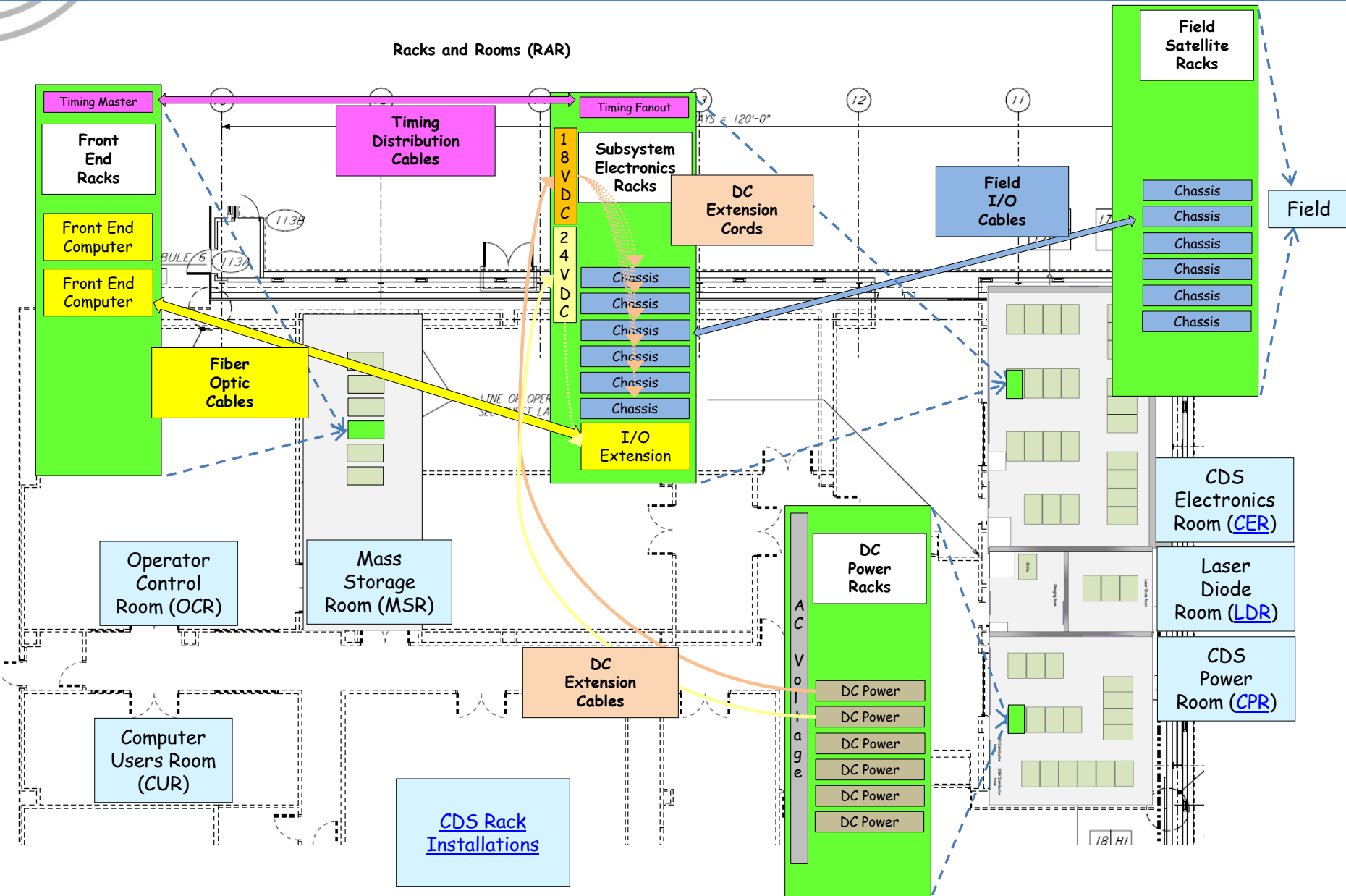


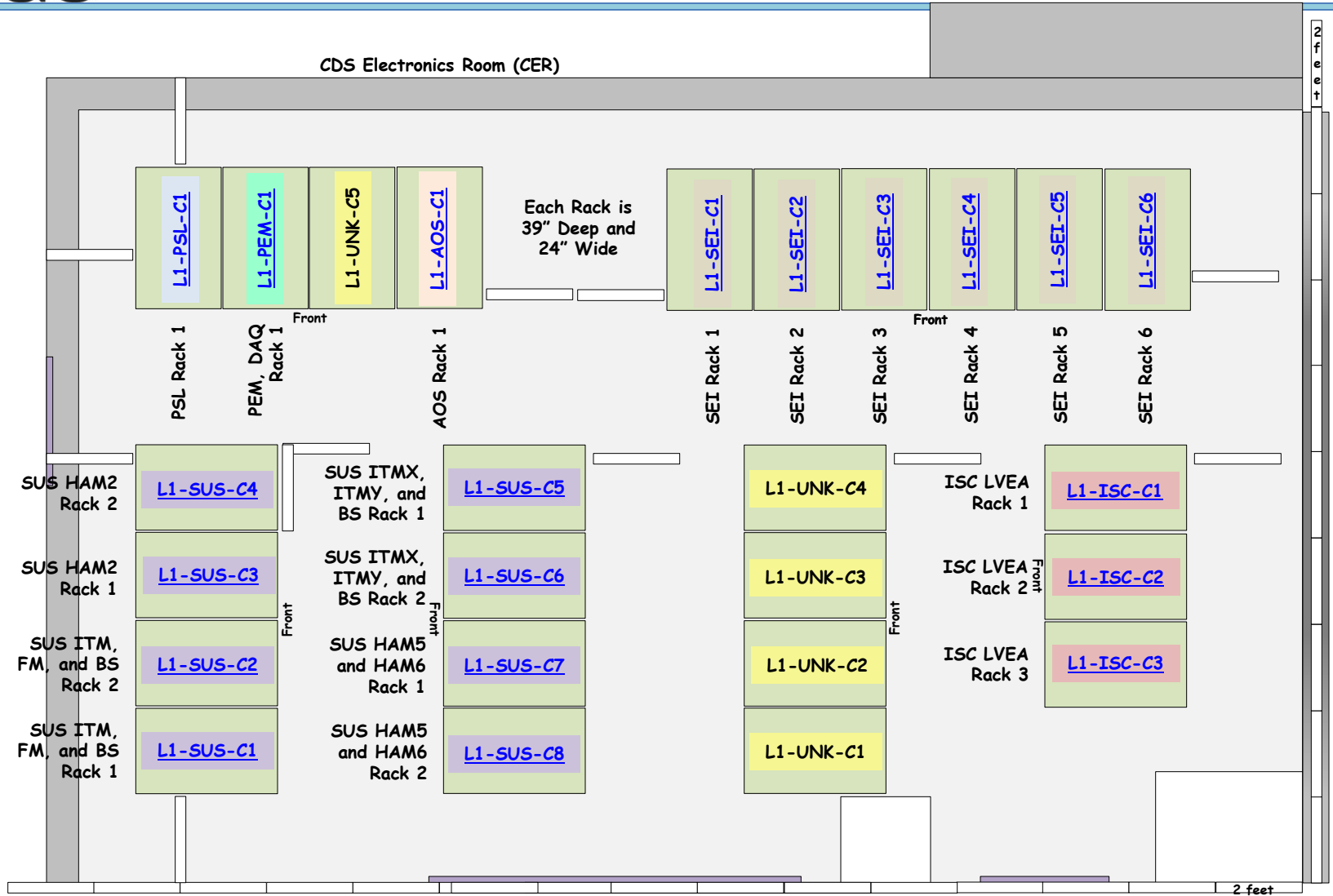
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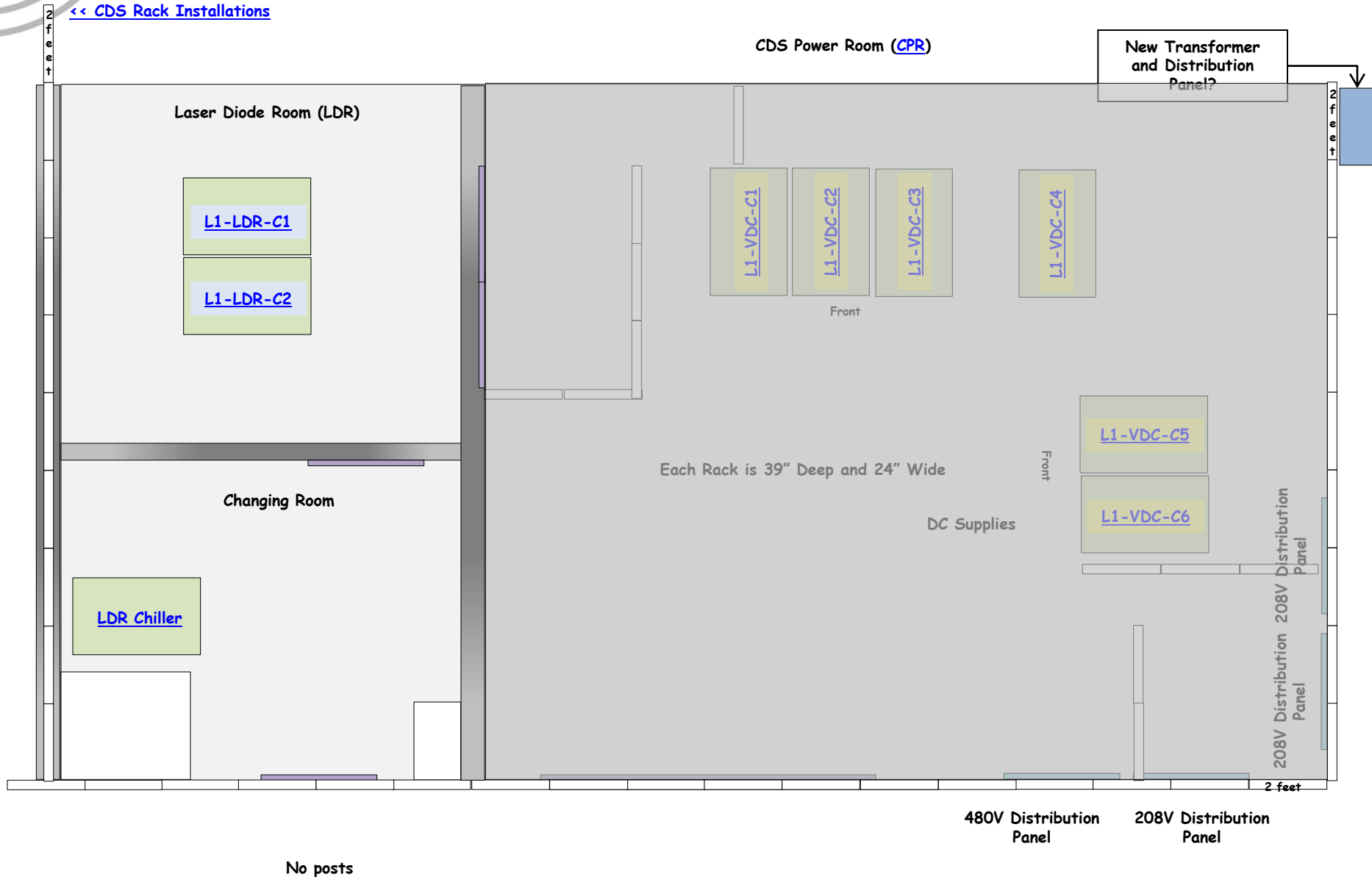
Racks and Rooms (RAR)



CDS Electronics Room (CER) Rack Layout



<< [CDS Rack Installations](#)



No posts

480V Distribution Panel

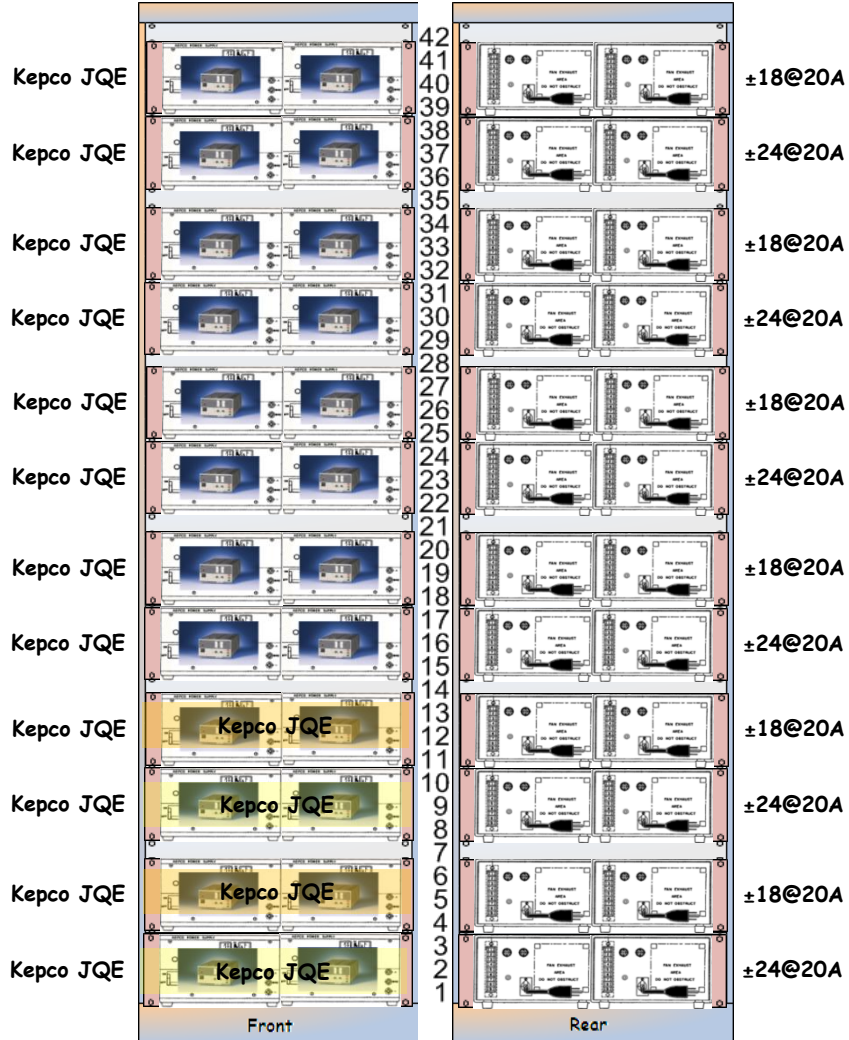
208V Distribution Panel

LLO CDS Power Room (CPR) - Rack Layout



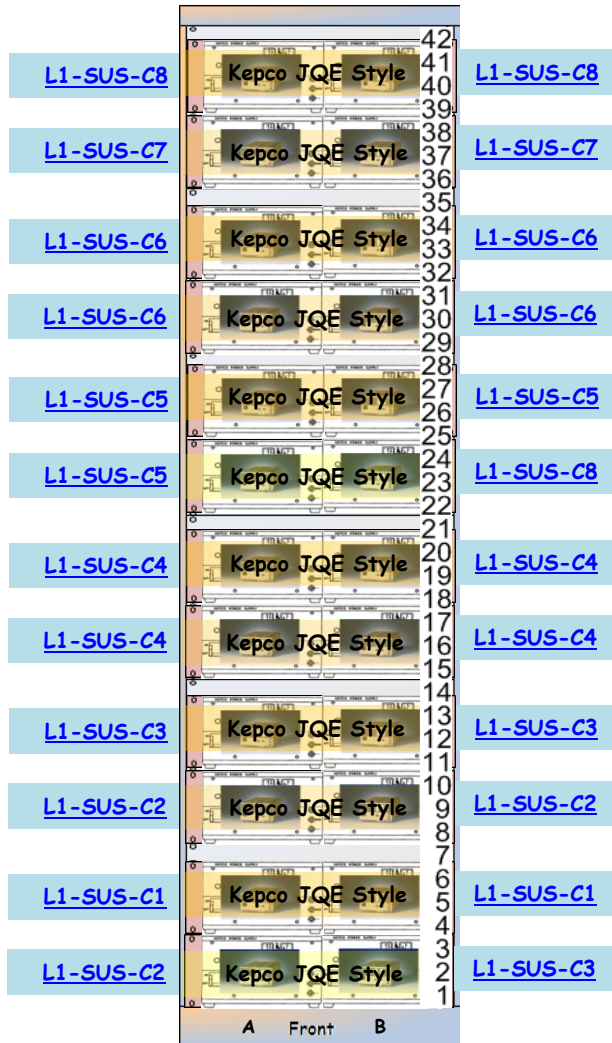
12 @ 125V, 20A Circuits per Rack

DC Power Rack



L1-VDC-C1 Power Racks - Required Supplies

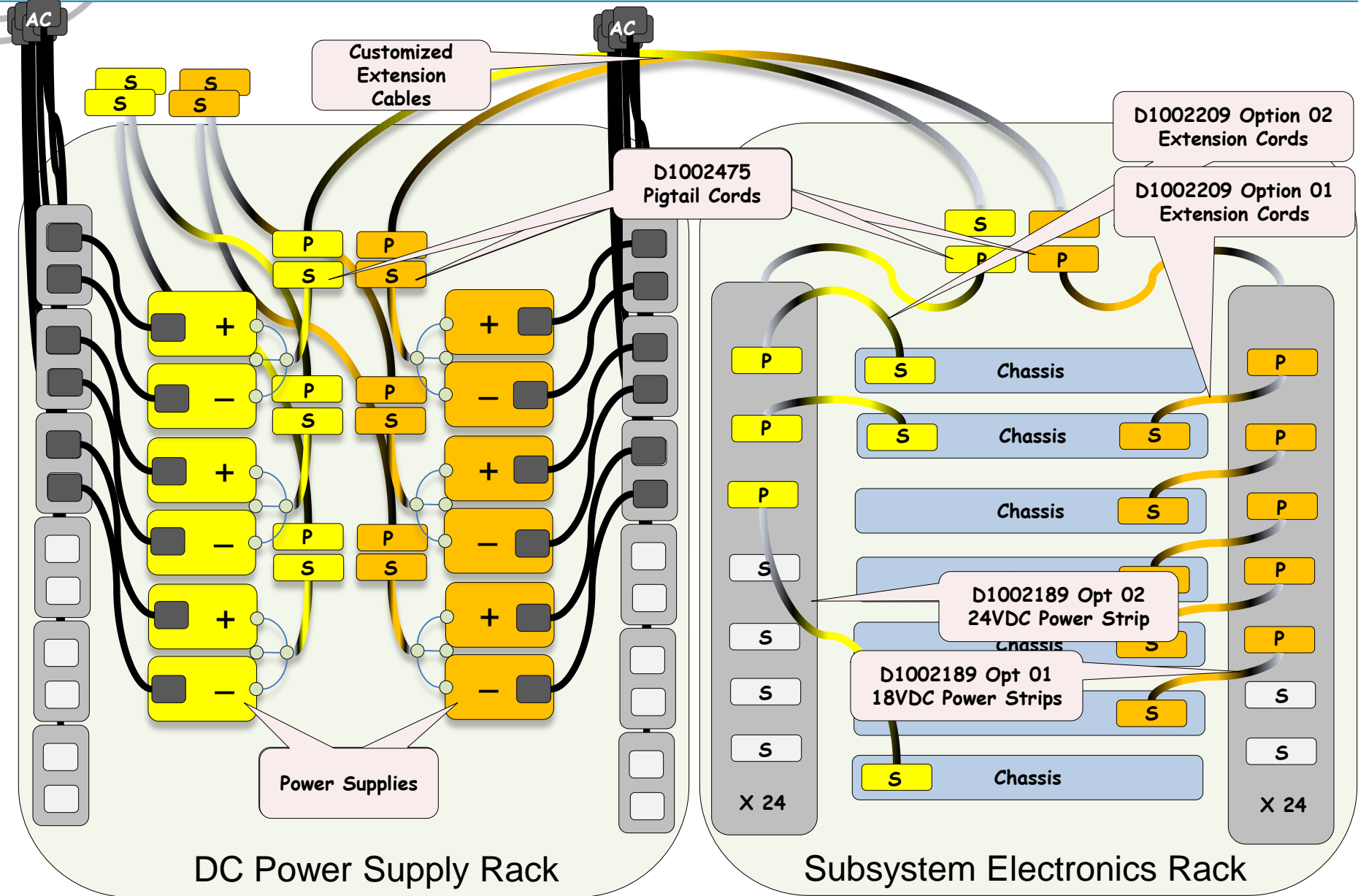
L1-VDC-C1 Power Rack

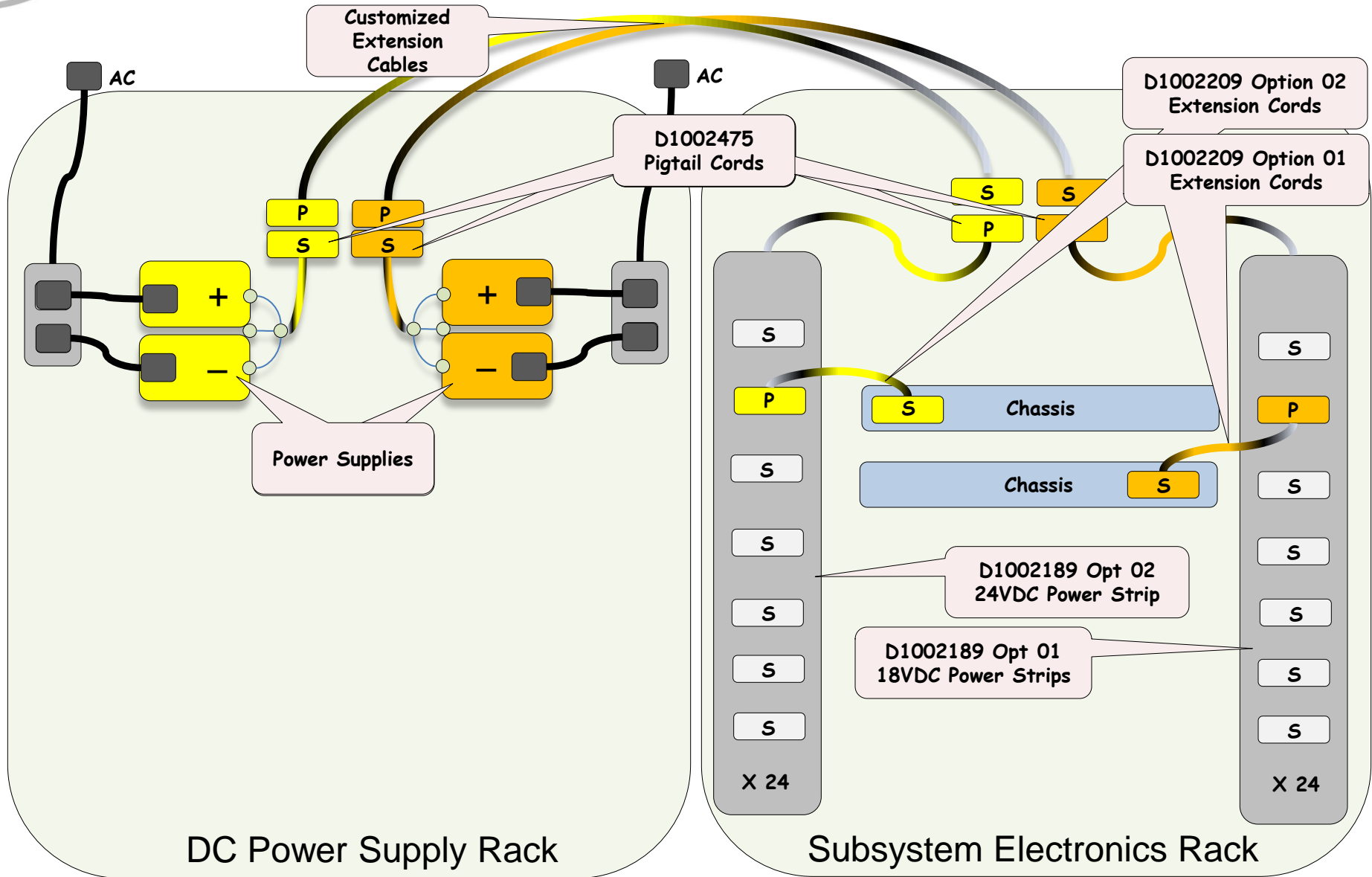


L1-VDC-C1 Power Rack

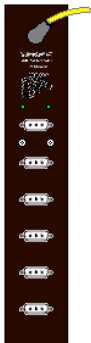


Standard DC Power Connecting Scheme

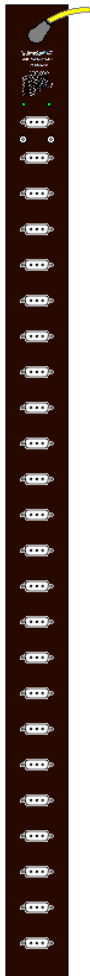




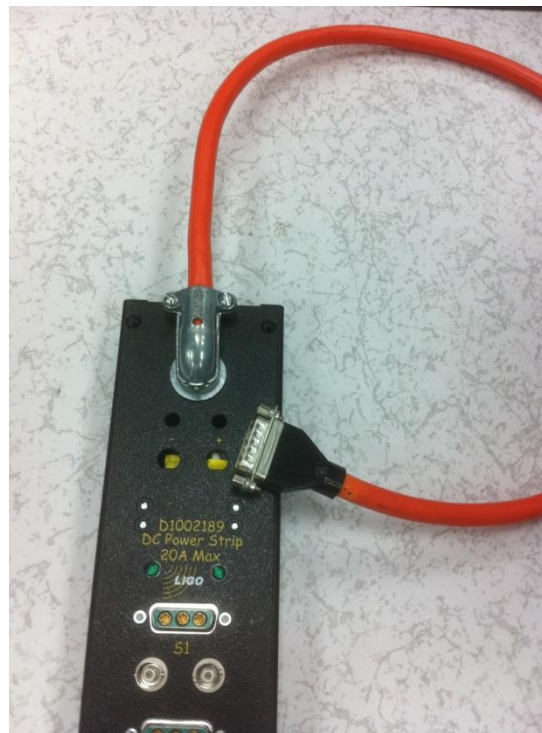
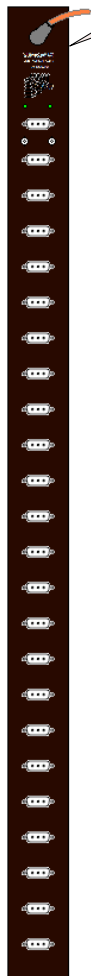
D1100034 Opt 02
24VDC Power Strip



D1002189 Opt 02
24VDC Power Strip



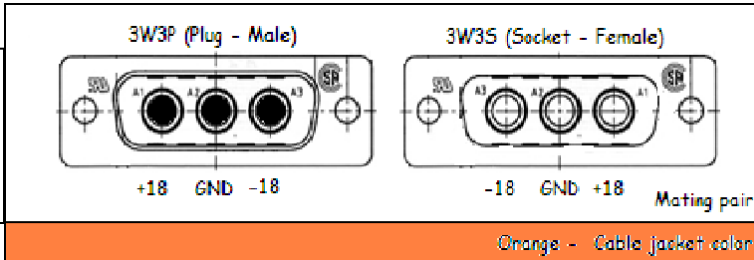
D1002189 Opt 01
18VDC Power Strips



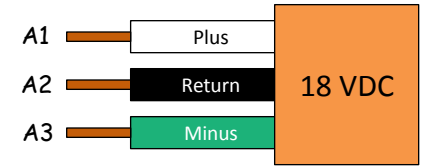
Custom length cables, metal backshells and screws on both connectors



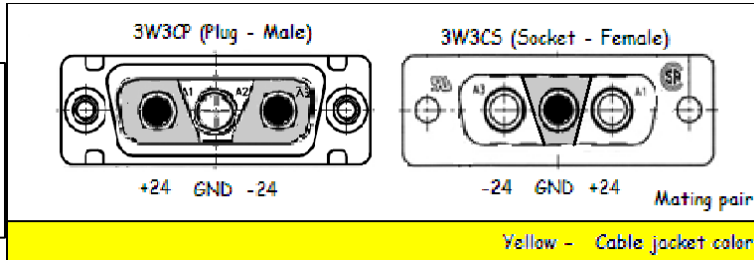
+/-18VDC 20A



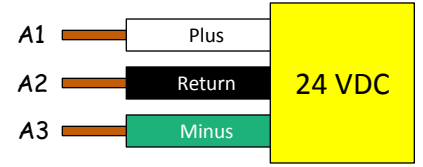
- Orange 12/3 25A McMaster-Carr 7394K13 Cable
- Conec 3003W3PXX99A10X Connector
- Conec 3003W3SXX99A10X Connector
- Conec 131C11029X Male Contacts
- Conec 132C11029X Female Contacts
- Digi-Key 17E-1657-15-ND Backshells



+/-24VDC 20A



- Yellow 12/3 25A McMaster-Carr 8046K16 Cable
- Conec 303W3CPXX99A10X Connector
- Conec 303W3CSXX99A10X Connector
- Conec 131C11029X Male Contacts
- Conec 132C11029X Female Contacts
- Digi-Key 17E-1657-15-ND Backshells



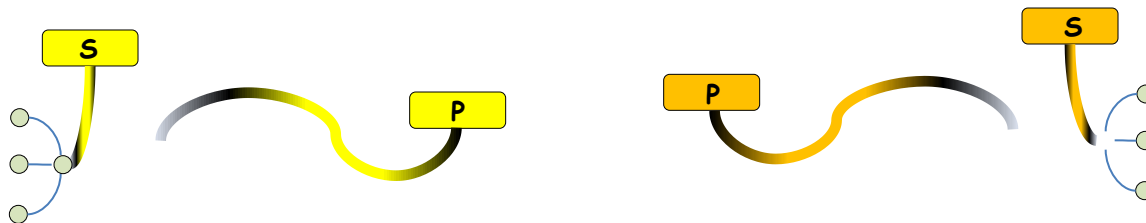
Standard DC Power Extension Cords

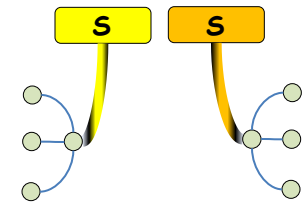
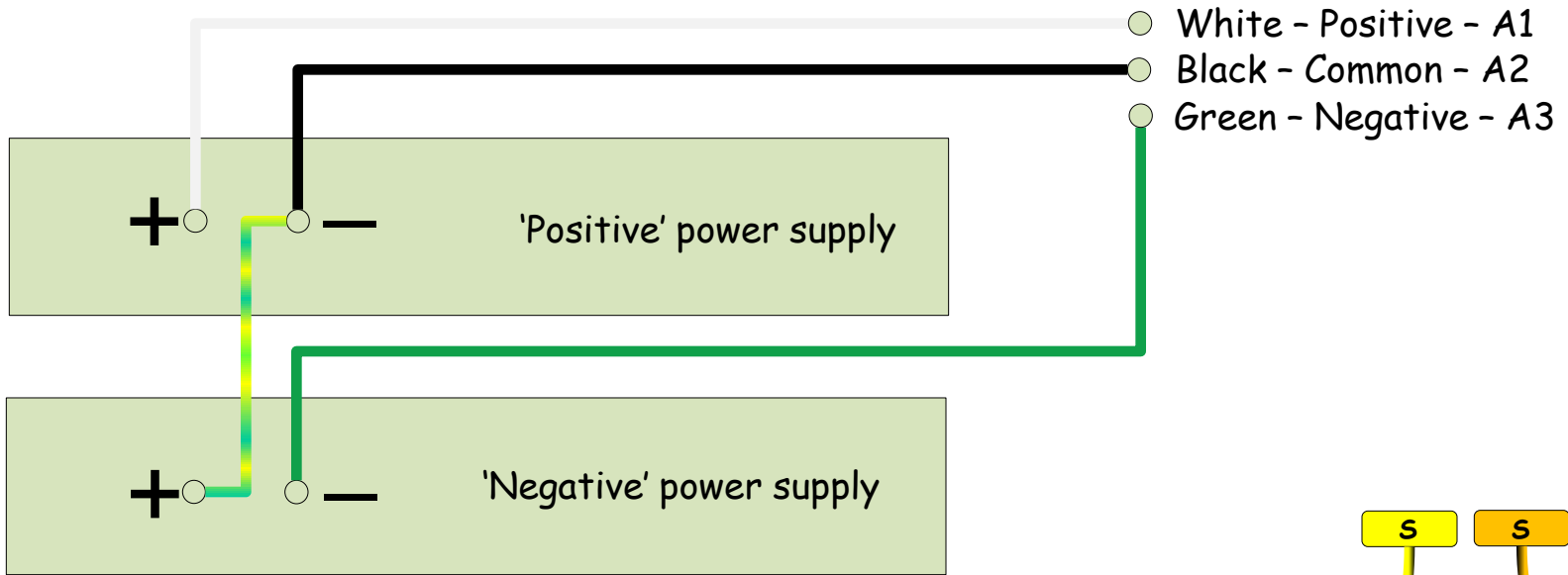
Standard 3-foot cords, backshells and screws on both connectors



Standard DC Power Pigtail Cords

Standard 3-foot length cables and backshells - Plug and Socket Options



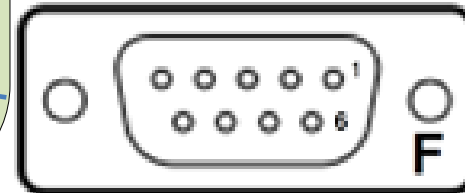


1. Only connect two power supplies that are sourcing the same voltages.
2. Use the correct **voltage** option of D1002475 DC Power Pigtail Socket Cord.

Power Supply

- * Provide a 0-10V full-scale Voltage signal
- * Provide a 0-10V full-scale Current signal
- * Present both signals on a DB9 female bulkhead connector mounted somewhere on the supply as follows:

| Pin | Signal |
|-----|-----------------|
| 1 | Voltage + |
| 6 | Voltage - (GND) |
| 2 | Current + |
| 7 | Current - (GND) |
| 3 | N/A |
| 8 | N/A |
| 4 | N/A |
| 9 | N/A |
| 5 | N/A |


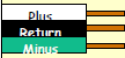





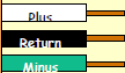


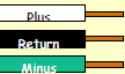


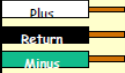

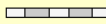






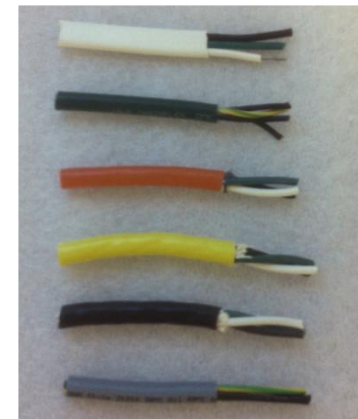
- I/O Extenders will be powered separately from Electronics Chasses. This will permit the electronics to be turned off and on without interference to the I/O Extenders.
- 3-conductor extension cables will be used between the DC Power Racks and the Electronics Racks. This will provide one return per set (+/-) of supplies.
- All DC Power Supply returns will be tied together (bonded) at the DC Power Rack to avoid ground loops.
- DC Power Racks will all be tied to technical ground.
- Shielding DC extension cables (from DC Power Racks to Electronics Racks) is not necessary.
- Non-standard (18/24) voltages should be a multi-conductor cable solution similar to this solution. See DC jacket colors for voltage conventions.
- Remote sensing will not be used. The length of cable is too great for effective control.

DC Wiring Color Convention

Either single conductor wiring or multi-conductor cabling may be called for. These charts show the DC color code for either the single conductor wiring or the multi-conductor cabling.

aLIGO Wiring Convention Color Code (LIGO-T1100048-V3)

| aLIGO DC Single Conductor Color Code | | | aLIGO DC Multi-conductor Jacket Color Code | | |
|---|------------------------|---------------|--|-------------|---|
| Graphic | Color | Voltage Range | | | |
|  | Brown | 0 to -5 | Jacket - White | 5 VDC |  |
|  | Yellow | 0 to +5 | | | |
|  | Black on White | -6 to -14 | Jacket - Green | 12 VDC |  |
|  | Yellow on White | +6 to +14 | | | |
|  | Blue | -15 to -23 | Jacket - Orange | 18 VDC |  |
|  | Orange | +15 to +23 | | | |
|  | Green | -24 to -47 | Jacket - Yellow | 24 VDC |  |
|  | White | +24 to +47 | | | |
|  | Purple | -48 to -100 | Jacket - Black | 48 VDC |  |
|  | Red | +48 to +100 | | | |
|  | Silver (Grey) on White | < -100 | Jacket - Gray Clearly marked | >100 VDC |  |
|  | Red on White | > +100 | | | |
|  | Yellow on Green | Common | | | |
|  | Black | Common | | | |

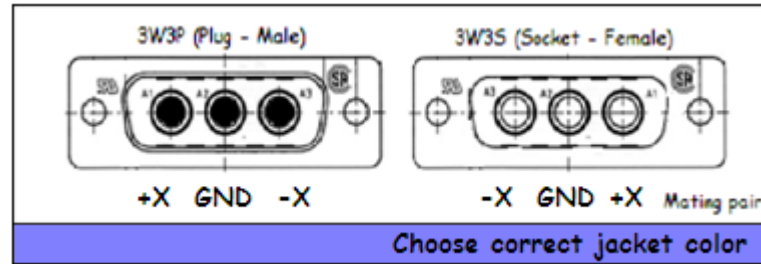


Custom length cables, metal backshells and screws on both connectors

Connectors

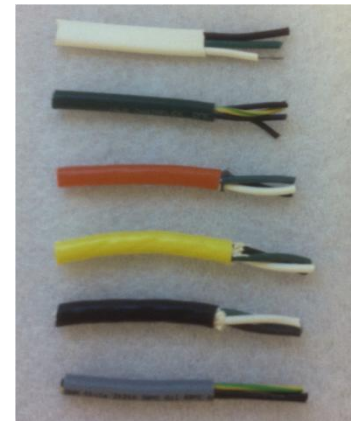
Plug Connector Conec 3003W3PXX99A10X
Conec 131C11029X Male Contacts

Socket Connector Conec 3003W3SXX99A10X
Conec 132C11029X Female Contacts



Cables

| | | | |
|--------------|--------------|------|-----------------------|
| 5VDC @13A | White | 16/3 | McMaster-Carr 7589K11 |
| 12VDC @13A | Green | 16/4 | McMaster-Carr 7673K63 |
| 18VDC @25A | Orange | 12/3 | McMaster-Carr 7394K13 |
| 18VDC @13A | Orange | 16/3 | McMaster-Carr 7394K33 |
| 24VDC @25A | Yellow | 12/3 | McMaster-Carr 8046K16 |
| 24VDC @13A | Yellow | 16/3 | McMaster-Carr 8046K12 |
| 36VDC @13A | Black | 16/3 | McMaster-Carr 8157K64 |
| >100VDC @13A | Gray(Marked) | 16/4 | McMaster-Carr 9936K26 |



Backshells

All Plug and Socket Backshells Digi-Key 17E-1657-15ND



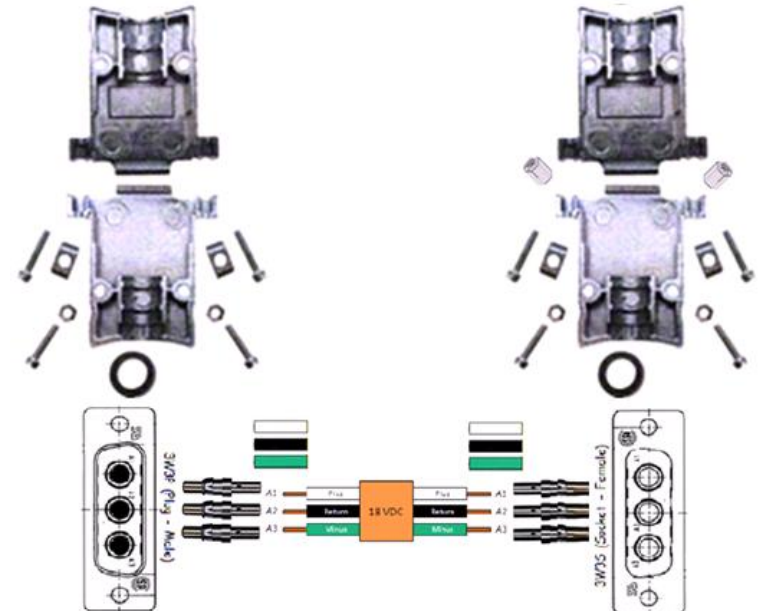
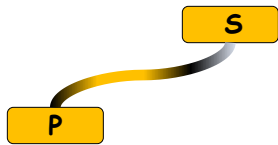
Custom DC Extension Cable - BOM

+/- 18VDC 20A (Used between DC Power Racks and Electronics Racks)

Custom length Cables, backshells and screws on both connectors, standoffs on socket

| 18V 20A Custom Extension Cables | | | | | | | | |
|---------------------------------|-------------------|--|--------------|--------------|---------------|----------------------|----------|------|
| Item | Part Type | Description | Designator | Manufacturer | Supplier | Supplier Part Number | Quantity | Unit |
| 1 | Cable | Orange SJTW AWG 12/3 25A Stranded | | | McMaster-Carr | 7394K13 | 100 | ft |
| 2 | Connector Shell | 3W3C Male Combo Shell - No Power | | Conec | Conec | 3003W3PXX99A10X | 1 | @ |
| 3 | Connector Contact | 20 AMP Male Power Contact | | Conec | Conec | 131C11029X | 3 | @ |
| 4 | Connector Shell | 3W3C Female Combo Shell - No Power | | Conec | Conec | 3003W3SXX99A10X | 1 | @ |
| 5 | Connector Contact | 20 AMP Female Power Contact | | Conec | Conec | 132C11029X | 3 | @ |
| 6 | Backshell | Connector Backshell DB15 DIE CAST ZINC | | Amphenol | Digi-Key | 17E-1657-15-ND | 2 | @ |
| 7 | Standoff | 4-40 D-Sub Hardware Hex Standoffs, .232 inch Hex | | | L-com | SDH | 2 | @ |
| 8 | Heat Shrink | Heat Shrink Insulation | Lab Supplies | | | | 1 | @ |

Orange 12/3 25A McMaster-Carr 7394K13 Cable
 Conec 3003W3PXX99A10X Connector
 Conec 3003W3SXX99A10X Connector
 Conec 131C11029X Male Contacts
 Conec 132C11029X Female Contacts
 Digi-Key 17E-1657-15-ND Backshells
 L-Com SDH Standoff

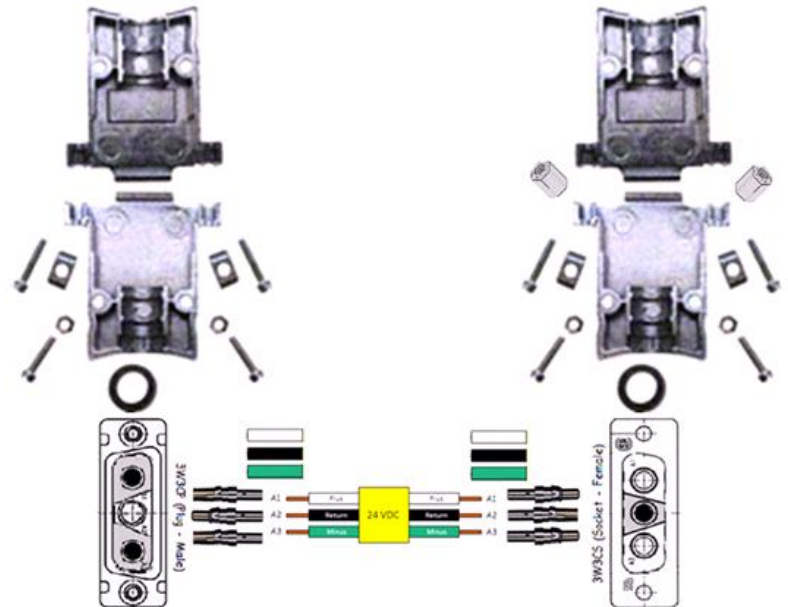


Custom DC Extension Cable - BOM

+/- 24VDC 20A (Used between DC Power Racks and Electronics Racks)
 Custom length Cables, backshells and screws on both connectors, standoffs on socket

| 24V 20A Custom Extension Cables | | | | | | | | |
|---------------------------------|-------------------|--|--------------|--------------|---------------|----------------------|----------|------|
| Item | Part Type | Description | Designator | Manufacturer | Supplier | Supplier Part Number | Quantity | Unit |
| 1 | Cable | Yellow SJEOOW AWG 12/3 25A Stranded | | | McMaster-Carr | 8046K16 | 100 | ft |
| 2 | Connector Shell | 3W3C Male Combo Shell - No Power | | Conec | Conec | 303W3CPXX99A10X | 1 | @ |
| 3 | Connector Contact | 20 AMP Male Power Contact | | Conec | Conec | 131C11029X | 3 | @ |
| 4 | Connector Shell | 3W3C Female Combo Shell - No Power | | Conec | Conec | 303W3CSXX99A10X | 1 | @ |
| 5 | Connector Contact | 20 AMP Female Power Contact | | Conec | Conec | 132C11029X | 3 | @ |
| 6 | Backshell | Connector Backshell DB15 DIE CAST ZINC | | Amphenol | Digi-Key | 17E-1657-15-ND | 2 | @ |
| 7 | Standoff | 4-40 D-Sub Hardware Hex Standoffs, .232 inch Hex | | | L-com | SDH | 2 | @ |
| 8 | Heat Shrink | Heat Shrink Insulation | Lab Supplies | | | | 1 | @ |

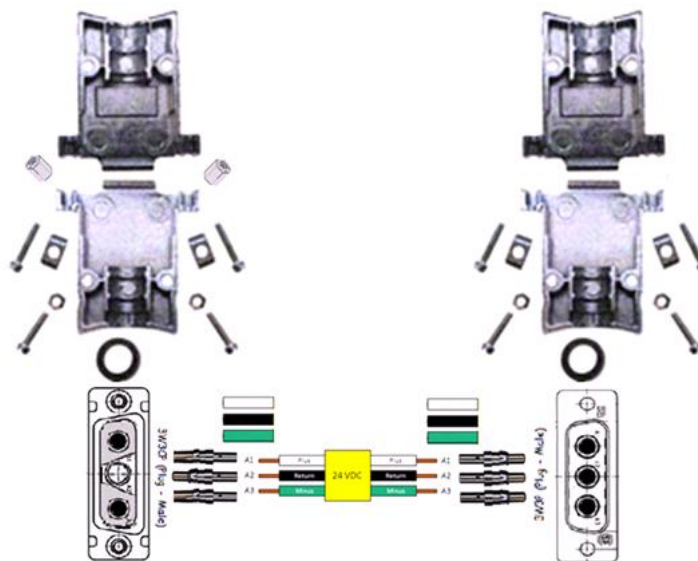
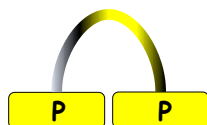
Yellow 12/3 25A McMaster-Carr 8046K16 Cable
 Conec 303WC3PXX99A10X Connector
 Conec 303WC3SXX99A10X Connector
 Conec 131C11029X Male Contacts
 Conec 132C11029X Female Contacts
 Digi-Key 17E-1657-15-ND Backshells
 L-Com SDH Standoff



Custom 24VDC Adapter

+/- 24VDC 10A (Used between Old eLIGO 24VDC Connector and New Standard)

This adapter is basically a 4" M-M cable that is intended to be attached to a chassis that does not conform to the new connector standard for 24VDC.



New 24VDC Standard

Old eLIGO 24VDC Standard

Custom Socket Pigtail Cables

Used between DC Power Supplies and Custom Extension Cables



This is a sample custom socket pigtail for use on a +/-12VDC set of power supplies. It really is a dark green cable jacket.



New 24VDC Power Supply

This adapter is basically a 3.5" +/- 24VDC 10A Plug Pigtail that is intended to be attached to the 24VDC input screws of IO Chasses. It will connect to a +/-24VDC Extension Cord.



24VDC Spades to Plug Adapter



Adapter construction