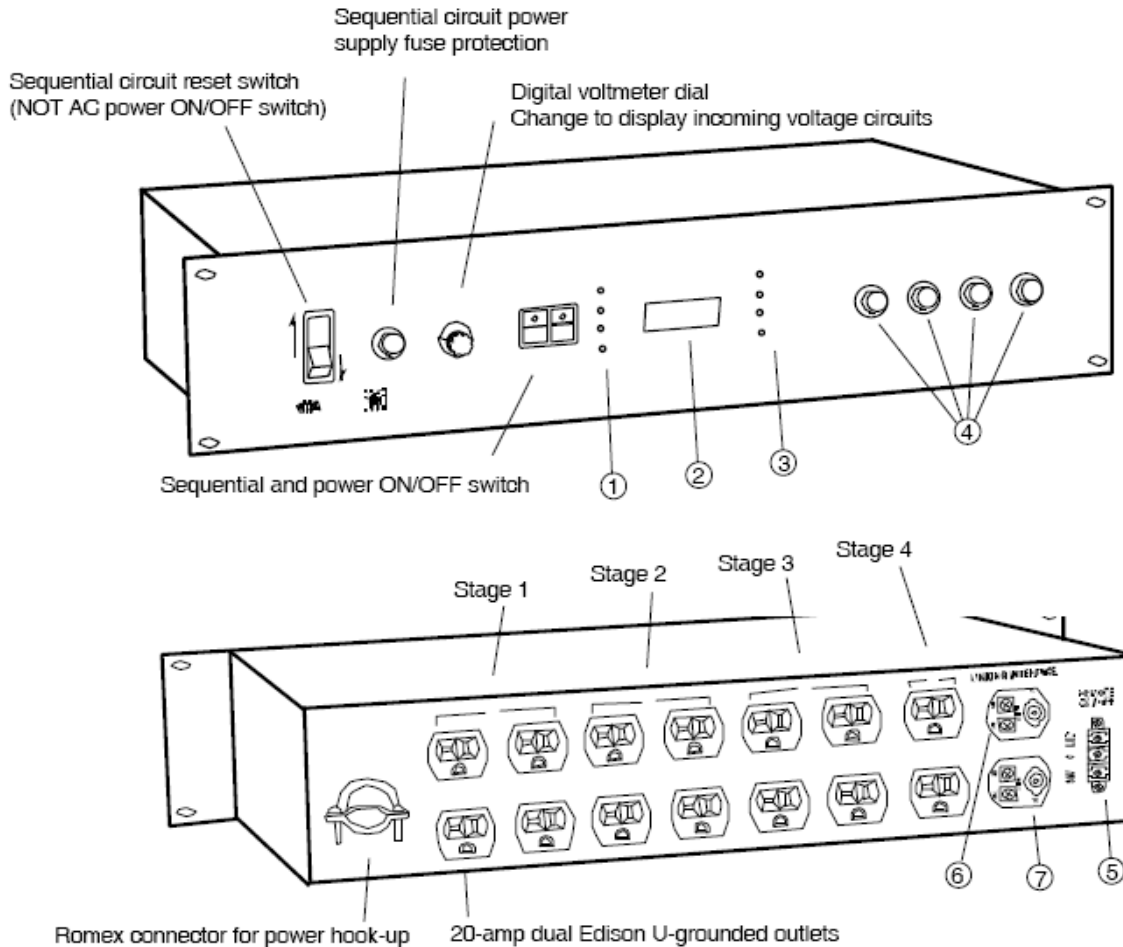


PD420VS OWNER'S MANUAL

(Insert to 6MAN-028)

CONDITIONED POWER DISTRIBUTION SEQUENTIAL POWER UP/POWER DOWN HIGH AMP OUTPUT



- ① 1-4 steps/stages sequential power up/down, and 1,5,10,30,second pre-sets and manual mode
- ② Digital voltmeter display of incoming line AC power
- ③ Protection "ON" indicator (Note: Protection L.E.D. indicators may produce a slight glow in power "OFF" mode when no load is present at corresponding outlets)
- ④ Circuit breakers—one per 20 amp circuit
- ⑤ 3-pin terminal block for remote sequential turn-on/off
- ⑥ Input linking connectors (RCA phono jack or screw terminals)
- ⑦ Output linking connectors (RCA phono jack or screw terminals)



1450 Lakeside Drive • Waukegan, Illinois 60085 USA
330-677-4424 • 800-321-6699 • Fax: 330-677-4471
<http://www.etasys.com> E-mail eta@etasys.com

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SPECIFICATIONS:**PD420VS**

Dimensions	19" L x 12" D x 3 1/2" H (2 units high)
Weight	17 lbs.
Housing Quality	Black powder coated chassis, black anodized aluminum front panel
Electrical	120/208 three phase or 120/240 single phase 50/60 Hz
Max. amps	80/unit, 20/circuit
Max. watts	9600/unit, 2400/circuit
Spike/surge protection	Line to neutral, neutral to ground, line to ground
Clamping level	200V peak
Response time	1 nanosecond
Max. surge voltage	6000V per 20 amp circuit
Max. surge current	26,000 amps
Max. spike energy	630 joules total
Noise attenuation	Transverse > 35 dB, 1.5 kHz to 200 mHz
Certification	ETL Listing pending

PD420VS Features

- Microprocessor monitored sequential power distribution system
- Four power up/down steps or stages of distributed and conditioned power
- Four pre-set power up/down intervals of 1, 5, 10 or 30 seconds
- Optional manual setting for up to 240 seconds between intervals
- Four 20 amp circuits, 9600 watts, total input per unit - 80 total amps
- 2 or 4 AC outlets per 20 amp circuit, 14 outlets total, conditioned and protected
- Single or three-phase power up
- Each circuit, breaker protected on front panel
- "Always on" digital voltmeter readout for all 3 phases
- Spike and surge protected, each circuit
- EMI/RFI filtered, each circuit
- External 0.125 amp fuse protected transformer
- Three year limited warranty
- Linking Feature: PD420VS units are shipped with the ability to be linked or daisy chained.

All linked units function as slaves, however, slaves can be set to specific time delays. Any number of units can be linked together with a distance of up to 1000 feet between each location.

IMPORTANT NOTE: For operating instructions of sequential turn-on and linking features, 3-wire remote interface, and remote relay function, see pages 6-8 of the PD11 Pro Series Owners Manual.

REMOTE OPERATION:
External 3-pin screw terminal block for simple 3-wire hook-up is located on rear panel. Connection requires user provided ON/OFF switch and L.E.D. indicator.

Programming Manual Time Delays

- Step 1:* Follow above instruction to activate L.E.D. 4
Step 2: Depress the UP/ON switch one more time to activate manual programming time delay mode
Step 3: All 4 red L.E.D.s to the right will be lit to indicate manual mode
Step 4: The UP/ON switch green L.E.D. will be lit
Step 5: Depress the UP/ON switch to start manual delay programming—can program from 5 sec. to 240 sec. delay
Step 6: Depress the OFF/DOWN to stop the manual delay timing
Step 7: Depress both the OFF and ON switches to finish

PD420VS POWER HOOK-UP REQUIREMENTS:

WARNING: Do not remove cover. No user serviceable parts inside. Refer servicing and hook-up to qualified individuals only.

DANGER: Due to life threatening shock hazard, hook-up of this power distribution pack must be made by qualified electricians only.

DANGER: Shock hazard, disconnect power before removing lid, or for servicing.

The PD420VS is designed for use on Three Phase (3Ø) WYE 120/208V 4-pole 5-wire grounding electrical service. With the ability to operate on Single Phase (1Ø) 120/240V 3-pole 4-wire ground- ing electrical service, (easily configured internally).

DO NOT connect high voltage leg of DELTA type systems (the higher voltage will damage sensitive equipment connected this way) – see NOTE below.

Minimum recommended AWG (American Wire Gauge) for electrical hook-up
(90° C Copper Wire).

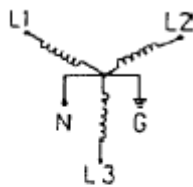
3Ø	1Ø	Position	Color
#8 AWG	#6 AWG	Ground	Green
#8 AWG	#6 AWG	Neutral	White
#8 AWG	#6 AWG	Line 1	Black
#8 AWG	#6 AWG	Line 2	Red
#8 AWG	N/C	Line 3	Blue

Follow National Electrical Code, or Local Electrical Code when sizing input electrical supply lines.

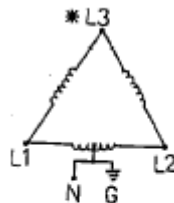
NOTE: Delta systems have one (1) leg at a higher potential (208 Volts) in reference to neutral, sometimes termed "Crazy Leg", or "High Leg" typically the orange color is reserved for designation of this line.

Do not connect this leg into the **PD420VS**.

SERVICE (SUPPLY) CONFIGURATIONS



3Ø WYE
120/208V



3Ø DELTA
120/240V

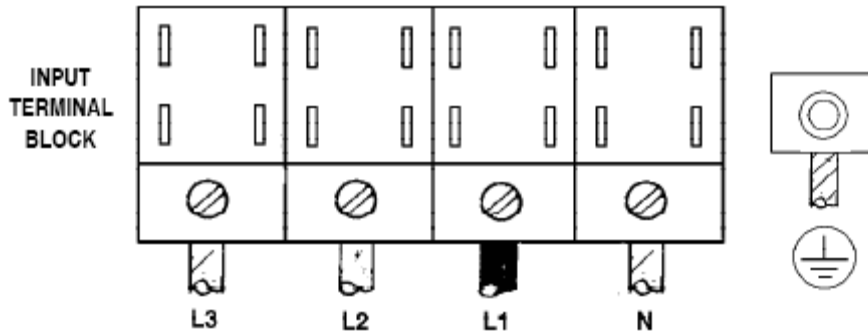
- L1-L2 = 208V
- L2-L3 = 208V
- L3-L1 = 208V
- L1-N = 120V
- L2-N = 120V
- L3-N = 120V

Ø = PHASE symbol

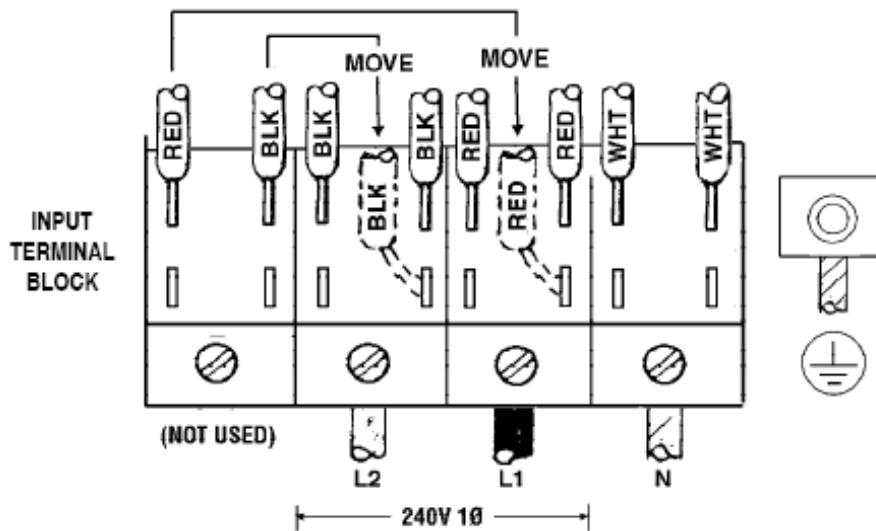
- L1-L2 = 240V
- L2-L3 = 240V
- L3-L1 = 240V
- L1-N = 120V
- L2-N = 120V
- *L3-N = 208V

* **DO NOT** connect this leg to the PD66 or the PD620

**INPUT POWER CONNECTION FOR 120/208V THREE-PHASE WIRING
(120/208V 3Ø WYE SYSTEM)**



**INPUT POWER CONNECTION FOR 120/240V SINGLE PHASE WIRING
(2 LEGS OF 120/240V 3Ø DELTA SYSTEM)**



120/240 1Ø WIRING

- Move unit red wire from terminal block L3 terminal to L1 terminal (L1 will now contain three red wires)
- Move unit black wire from terminal block L3 terminal to L2 terminal (L2 will now contain three black wires)
- Increase supply lines gauge size to accommodate the ADDITIONAL 20 amps (2400 VA) on each leg

PD420VS (80 Amp Total)	
Breaker	Outlets (Sequential State)
No. 1 20 amp	No. 1 (2) NEMA 5-20R (Duplex Receptacle) Sequential Stage 1
No. 2 20 amp	No. 2 (2) NEMA 5-20R (Duplex Receptacle) Sequential Stage 2
No. 3 20 amp	No. 3 (2) NEMA 5-20R (Duplex Receptacle) Sequential Stage 3
No. 4 20 amp	No. 4 (1) NEMA 5-20R (Duplex Receptacle) Sequential Stage 4



1450 Lakeside Drive • Waukegan, Illinois 60085 USA
330-677-4424 • 800-321-6699 • Fax: 330-677-4471
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Addendum

NOTE: The following pages are added as an addendum to the ETA manual. For most reliable performance of ETA Systems sequencing products, it is recommended that you use one of the cable types illustrated in the following pages. When installing any cabling in a plenum or return air space, it is the responsibility of the installer to ensure that Teflon jacketed cable is used where required by fire codes. ETA Systems assumes no responsibility for code violations or hazards that result from improper selection or installation of signaling cable.

8489 Non-Paired - Audio, Control and Instrumentation Cable

	<p>For more information please call 1-800-Belden1</p> <p><u>See Put-ups and Colors</u></p> <p>Related Documents : No. 1.pdf</p>
--	--

Description:

18 AWG stranded (19x30) tinned copper conductors, conductors cabled, PVC insulation, PVC jacket.

PHYSICAL CHARACTERISTICS:

CONDUCTOR:

Number of Conductors	4
Total Number of Conductors	4
AWG	18
Stranding	19x30
Conductor Material	TC - Tinned Copper

INSULATION:

Insulation Material	PVC - Polyvinyl Chloride
Nom. Insulation Wall Thickness	.017 in.

OVERALL CABLING:

Overall Cabling Lay Length	3 in.
Overall Cabling Twists/ft.	4

Overall Cabling Color Code Chart :

Number	Color	Number	Color
1	Black	3	Red
2	White	4	Green

OUTER SHIELD:

Outer Shield Material	Unshielded
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OUTER JACKET:

Outer Jacket Material	PVC - Polyvinyl Chloride
Outer Jacket Nominal Wall Thickness	.032 in.

OVERALL NOMINAL DIAMETER:

Overall Nominal Diameter	.257 in.
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MECHANICAL CHARACTERISTICS:

8489 Non-Paired - Audio, Control and Instrumentation Cable

Operating Temperature Range	-20°C To +60°C
UL Temperature Rating	60°C (UL AWM Style 2598)
Bulk Cable Weight	44.1 lbs/1000 ft.
Max. Recommended Pulling Tension	83 lbs.
Min. Bend Radius (Install)	2.6 in.

APPLICABLE SPECIFICATIONS AND AGENCY COMPLIANCE:

APPLICABLE STANDARDS:

NEC/(UL) Specification	CMG
CEC/C(UL) Specification	CMG
AWM Specification	UL Style 2598 (300 V 60°C)
EU CE Mark (Y/N)	Yes
EU RoHS Compliant (Y/N)	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	04/01/2005

FLAME TEST:

C(UL) Flame Test	FT4
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PLENUM/NON-PLENUM:

Plenum (Y/N)	N
Plenum Number	88489, 82489

ELECTRICAL CHARACTERISTICS:

Nom. Capacitance Conductor to Conductor @ 1 KHz	26 pF/ft
Nom. Conductor DC Resistance @ 20 Deg. C	6.3 Ohms/1000 ft
Max. Operating Voltage - UL	300 V RMS (UL AWM Style 2598)
Max. Recommended Current	4 Amps per conductor @ 25°C

PUT-UPS AND COLORS:

Item	Description	Put-Up (ft.)	Ship Weight (lbs.)	Jacket Color	Notes
8489 060100	4 #18 PVC PVC	100	5.1	CHROME	
8489 0601000	4 #18 PVC PVC	1000	48	CHROME	C
8489 060250	4 #18 PVC PVC	250	12	CHROME	
8489 060500	4 #18 PVC PVC	500	24	CHROME	C
8489 060U1000	4 #18 PVC PVC	U1000	46	CHROME	
8489 060U500	4 #18 PVC PVC	U500	23.5	CHROME	

C = CRATE REEL PUT-UP.

Revision Number: 2 Revision Date: 05-16-2005

8489 Non-Paired - Audio, Control and Instrumentation Cable

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Belden believes this product to be in compliance with the following environmental regulations: California Proposition 65 Consent Judgment For Wire & Cable Mfgs. (San Francisco Superior Court Nos. 312962 And 320342); EU RoHS (Directive 2002/95/EC, 27-Jan-2003); Material manufactured prior to the compliance date may still be in stock at Belden facilities and in our Distributor's inventory. EU ELV (Directive 2000/53/EC, 18-Sept-2000); EU WEEE (Directive 2002/96/EC, 27-Jan-2003); And EU BFR (Directive 2003/11/EC, 6-Feb-2003). The information provided in this Product Disclosure, and the identification of materials listed as reportable or restricted within the Product Disclosure, is correct to the best of Belden's knowledge, information and belief at the date of its publication. The information provided in the Product Disclosure is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. This Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.

Belden declares this product to be in compliance with EU LVD (Low Voltage Directive 73/23/EEC), as amended by directive 93/68/EEC.

COMMUNICATION & CONTROL

MULTICONDUCTOR, UNSHIELDED
PVC/PVC

UL TYPE CM
UL AWM 2509, CSA CMG FT 4
RoHS COMPLIANT, 300 VOLT

CHARACTERISTICS

OPERATING TEMPERATURE:

- -20°C to 80°C – AWM
- 75°C – CM

VOLTAGE RATING:

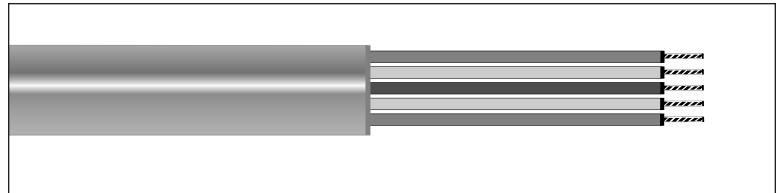
- 300 Volt – CM
- 150 Volt – CL2

COLOR DESCRIPTION:

- Color Code: Chart D Page 375
- Jacket Color: Gray

PRODUCT DESCRIPTION:

- Conductor: Stranded Tinned Copper
- Insulation: Color-Coded PVC
- Jacket: PVC



80°C 300V - UL 2509 - NEC TYPE CM

18 AWG (0,81mm²), 16/30 (16x0,25mm), Insulation Thickness: **0.016"** (0,41mm)

Alpha Part No.	No. of Cond.	Jacket Thickness		Diameter	
		Inches	mm	Inches	mm
1897C	2	0.020	0,50	0.20	5,0
1898C	3	0.020	0,50	0.21	5,3
1898/4C	4	0.020	0,50	0.24	6,1
1898/5C	5	0.020	0,50	0.26	6,6
1898/6C	6	0.020	0,50	0.29	7,4
1898/7C	7	0.020	0,50	0.29	7,4
1898/8C	8	0.025	0,63	0.31	8,0
1898/9C	9	0.025	0,63	0.34	8,8
1898/10C	10	0.025	0,63	0.37	9,4
1898/12C	12	0.025	0,63	0.38	9,8
1898/15C	15	0.030	0,76	0.44	11,3
1898/19C	19	0.030	0,76	0.47	11,9
1898/25C	25	0.035	0,88	0.56	14,1

80°C 300V - UL 2509 - TYPE CM

16 AWG (1,31mm²), 19/0.0117 (19x0,29mm), Insulation Thickness: **0.016"** (0,41mm)

Alpha Part No.	No. of Cond.	Jacket Thickness		Diameter	
		Inches	mm	Inches	mm
1899C	2	0.020	0,50	0.22	5,7
1899/3C	3	0.020	0,50	0.24	6,3
1899/4C	4	0.020	0,50	0.27	6,9

80°C 300V - UL TYPE CL2

14 AWG (2,08mm²), 41/30 (41x0,25mm), Insulation Thickness: **0.020"** (0,50mm)

Alpha Part No.	No. of Cond.	Jacket Thickness		Diameter	
		Inches	mm	Inches	mm
1891C	2	0.020	0,50	0.26	6,6
1891/3C	3	0.020	0,50	0.28	7,1

80°C 300V - UL TYPE CL2

12 AWG (3,31mm²), 65/30 (65x0,25mm), Insulation Thickness: **0.020"** (0,50mm)

Alpha Part No.	No. of Cond.	Jacket Thickness		Diameter	
		Inches	mm	Inches	mm
1892C	2	0.020	0,50	0.30	7,6
1892/3C	3	0.020	0,50	0.32	8,1

SPECIFICATIONS

- UL Type CM, AWM 2509 (18 & 16 AWG)
- UL Type CL2, (14 & 12 AWG)
- CSA CMG FT4 (18 & 16 AWG)
- CSA AWM I A/B, II A/B FT4 (14 & 12 AWG)
- Passes UL Vertical Tray Flame Test
- "C" Suffix Indicates CM or CL2 Rating as Applicable
- RoHS Compliant

UL LISTED Passes UL VW-1 Flame Test Underwriters Laboratories Inc. Certified Canadian Standards Association



AVAILABILITY

- 100 ft (30,5m), 500 ft (152m), 1000 ft (305m) put-ups



Toll Free: 1-800-52 ALPHA • Telephone: 908-925-8000 • Fax: 908-925-6923
Europe/UK Telephone: +44 (0) 1932 772422 • Europe/UK Fax: +44 (0) 1932 772433

Web Site: www.alphawire.com
Email: info@alphawire.com