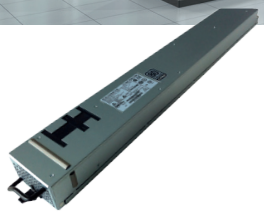
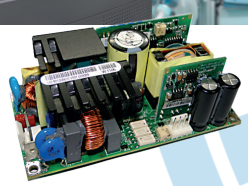
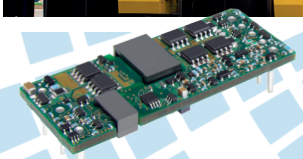





Product Highlights Catalog

bel POWER SOLUTIONS & PROTECTION

a bel group

belpowersolutions.com

About Bel

Bel is a publicly traded company that has been operated by the same family for over 65 years. Our history of organic growth and acquisitions have broadened our product portfolio. This has established Bel as a world leader with a diverse offering of power, protection and interconnect products. We design and manufacture these products which are primarily used in the networking, telecommunications, computing, military, aerospace, transportation and broadcasting industries. Bel's portfolio of products also finds application in the automotive, medical and consumer electronics markets.

About Bel Power Solutions

Bel Power Solutions provides intelligent, efficient and reliable power conversion devices. We support global customers and local markets with strategically located manufacturing and R&D facilities. We continue to focus on the growth of our business with strategic customers and distributors. Applications of our power conversion devices range from board-mount power to system-level architectures for servers, storage, networking, industrial and telecommunications industries.

Table of Contents

Platinum Efficiency Series

Product Highlights

- Platinum Efficiency
- Output power 600 to 3000 Watts
- 12 and 48 VDC Output
- AC and DC Inputs
- High power density (up to 43 W/in^3)
- 1U Form Factor
- Forward & Reverse Airflow
- Digital Current Share
- PMBus™ for control, programming and monitoring

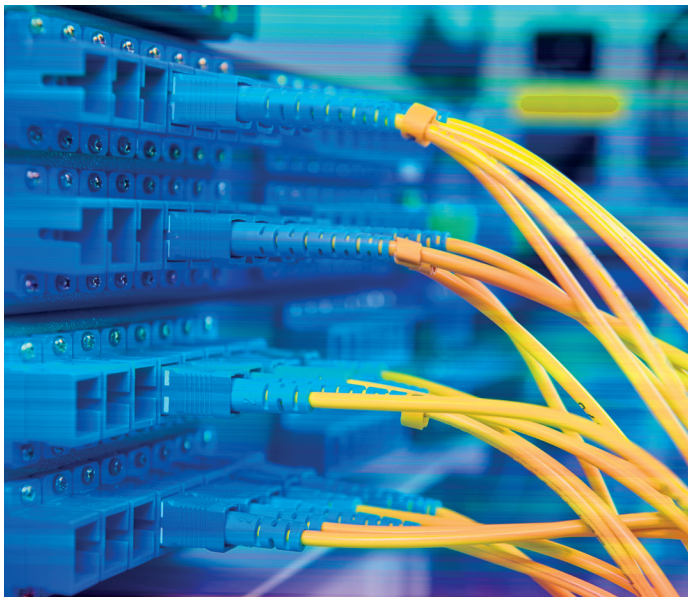
Model	V_{OUT}	Output Power	Dimensions (mm) w/o connector (L x W x H)
AC Input			
PFE600-12-054xA	12 V	600 W	321.5 x 54.5 x 40
PET750-12-050xA	12 V	750 W	300 x 50.5 x 40
PET800-12-074xA	12 V	800 W	185 x 73.5 x 39
PFE850-12-054xA	12 V	850 W	321.5 x 54.5 x 40
PFE1100-12-054xA	12 V	1100 W	321.5 x 54.5 x 40
PET1300-12-054xA	12 V	1300 W	321.5 x 54.5 x 40
PFE1300-48-054NA	48 V	1300 W	321.5 x 54.5 x 40
PFE1500-12-054xA	12 V	1500 W	321.5 x 54.5 x 40
PET1600-12-074NA	12 V	1600 W	265 x 73.5 x 40
PET2000-12-074NA	12 V	2000 W	265 x 73.5 x 40
PFE3000-12-069RA	12 V	3000 W	555 x 69 x 42
DC Input			
PFE1100-12-054xD	12 V	1100 W	321.5 x 54.5 x 40
PET2000-12-074ND	12 V	2000 W	265 x 73.5 x 40
PFE3000-12-079RD	12 V	3000 W	555 x 79 x 42

Titanium Efficiency Series

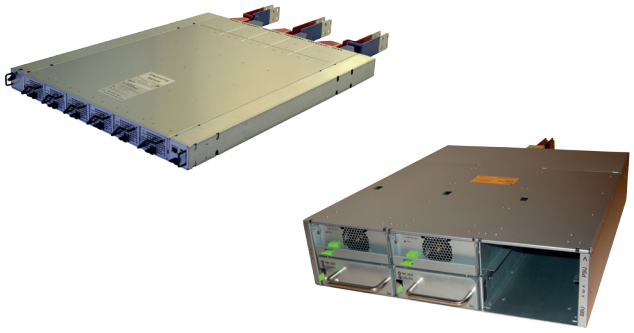
Product Highlights

- Best-in-class, Certified “Titanium” efficiency
- Wide input voltage range
- AC input with active PFC
- Hot-plug capable
- Parallel operation with active current sharing
- Full digital control for improved performance
- High power density design
- PMBus™ for control, programming and monitoring
- Overtemperature, overvoltage and overcurrent protection

Model	V_{OUT}	Output Power	Dimensions (mm) w/o connector (L x W x H)
TET2000-12-086NA	12 V	2000 W	185 x 86 x 40
TET3000-12-069RA	12 V	3000 W	555 x 69 x 40.5
TET4000-48-069RA	48 V	4000 W	530 x 69 x 40.5



Rack Power & Open Compute



Product Highlights

SPSPFE3-0XG Shelf

- Up to 18 kW per Shelf
- Shelves may be Paralleled
- Holds up to Six PFE3000-12-069RA PSU's
- Three-phase, 400/480 VAC Input (-02G, -04G, -05G, -06G)
  Three-phase 208 VAC Input (-03G)
- Triple (-02G, -03G, -05G,) or Single (-04G), -06G) Output Busbar
- Redundant Configurations (3+3 or 5+1)
- Built-in Controller (-05G, -06G)
- I²C PMBus, Optional Ethernet Capability

V2 Shelf (SPAFCBK-12G)

- Holds Three SPAFCBK-11G PSU's
- Three-phase 200/277 VAC Input
- Single Bus Bar System (530 A)
- Redundant Configuration (2+1)
- Power Modules and Batteries in the Same Shelf
- High Efficiency PSU Exceeds Titanium Efficiency Levels at Most Load Points

TCR-4-48G Shelf

- 19" Rack with water-cooling Base Plate
- Holds up to four TCP3500 models (14 kW)
- Parallel operation capability up to 4 racks (50.4 kW)
- Auxiliary output 24 V / 120 W
- Input and Output water temperature measurement

Shelf	PSU Series	Max # of PSUs	V_{OUT}	V_{SB}	Power
SPAFCBK-08G	SPAFCBK-07G	7	12 V	NA	4900 W
SPAFCBK-12G	SPAFCBK-11G	3	12 V	NA	9900 W
TCR-4-48G	TCP3500	4	48 V	24 V	14000 W
SPSPFE3-02G	PFE3000	6	12 V	12 V	18000 W
SPSPFE3-03G	PFE3000	6	12 V	12 V	18000 W
SPSPFE3-04G	PFE3000	6	12 V	12 V	18000 W
SPSPFE3-05G	PFE3000	6	12 V	12 V	18000 W
SPSPFE3-06G	PFE3000	6	12 V	12 V	18000 W

Enclosed Industrial Power

TCP / TXP Series

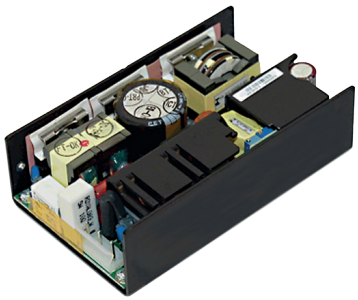
- Scalable Output Power up to 50.4 kW
- Three Phase AC Input Voltage Range (200 - 480 V)
- Adjustable Output Voltage Range
- Remote Output Adjustment and Monitoring
- Parallel or Serial Operation
- High Efficency (93%) and Power Density (16 W/in³)

Series	V_{IN}	V_{OUT}	I_{OUT}	Power
TCP3500	180– 528 VAC, 3p	24 / 48 / 60 V (adj.)	145, 65, 73 A	3500 W
TXP3500	180– 528 V, 3p	48 V	73 A	3500 W
TXP4000	350 – 528 V, 3p	110 V	36.5 A	4000 W

LBC Series Battery Charger

- Custom solution for multiple railway and industrial applications
- Input voltage: 3x 400 / 480 VAC (350 - 528 VAC)
- Output power up to 12 kW
- 110 VDC output is decoupled with a diode for load separating
- Output voltage for 110 V NiCd battery (adjustable 85 – 137.5 VDC)
- Operating temperature -25 to 55°C without derating
- CAN bus / Ethernet Interface
- EN 50155, EN 50121-3-2 and EN 45545 compliant

Open Frame Products



BPEU Series

- Bulk power products
- Scalable Output Power (up to 21 kW)
- One or Three Phase Inputs
- Extra-wide Output Voltage Trim (20 - 57 VDC)
- Remote Output Adjustment and Monitoring
- High Efficency and Power Density

Series	V_{IN}	V_{OUT}	I_{OUT}	Power
BPEU2413	185 - 264 VAC, 1p 175 - 240 VAC, 3p	2x50, 50, 4, 5 V	12, 2, 1.5, 1 A	1400 W
BPEU2003	185 - 264 VAC, 1p	40 – 50, 12 V	40 A, 0.5 A	2000 W
BPEU2452	185 - 264 VAC, 1p	48, 12.5 V	40, 1 A	2000 W
BPEU2451	185 - 264 VAC, 1p	2x 30–50, 24 V	40, 3.5 A	3000 W
BPEU3000	185 - 264 VAC, 1p 170 - 242 VAC, 3p	4x 50, 48, 5 V	23.5, 2.5, 0.5 A	3000 W
BPEU3304	185 - 264 VAC, 1p 175 - 242 VAC, 3p	48, 48, 24 V	60, 2.5, 1.2 A	3000 W
FXC7000	220 or 480 V, 3p	48 V	145 A	7000 W
FXP7000	220 or 480 V, 3p	48 V	145 A	7000 W

Product Highlights

- A Variety of Single and Multiple Output Models
- Adjustable Main Output
- Wide Universal AC Input 90 – 264 VAC
- ABC/MBC Low-Profile Series Offer High Power Density and Efficiency up to 94%
- Commercial to EN60950 (ABC Series)
- Medical to EN60601-1, 3rd Edition with 2 x Means of Patient Protection (MOPP) Isolation (MBC Series)
- High convection rating
- 600 W supplies offer I2C communication bus
- Fan Output, 12 VDC @ 0.5 A Standard
- Operation temperature range -20 to +70°C
- Cover Kits Optionally Available

Series	V_{OUT}	Size (in)	Power
ABC/MBC40	5, 12, 15, 24, 48 V	2 x 4 x 1.2	40 W
ABC/MBC60	5, 12, 15, 24, 48 V	2 x 4 x 1.2	60 W
ABC/MBC75*	12, 15, 24, 30, 48, 58 V	2 x 3 x 1	75 W
ABC/MBC120*	12, 15, 24, 30, 48, 58 V	2 x 3 x 1.18	120 W
ABC/MBC150	5, 12, 15, 24, 48 V	2 x 4 x 1.3	150 W
ABC/MBC180*	12, 15, 24, 30, 48, 58 V	2 x 4 x 0.75	180 W
ABC200	12, 15, 24, 48 V	2 x 4 x 1.5	200 W
ABC/MBC201	5, 12, 15, 24, 30, 48 V	3 x 5 x 1.5	200 W
ABC/MBC225*	12, 15, 24, 30, 48, 58 V	2 x 4 x 1	225 W
MBC250	12, 24, 48 V	3 x 5 x 1.5	250 W
ABC/MBC275*	12, 15, 24, 30, 48, 58 V	3 x 5 x 0.75	275 W
ABC/MBC300	5, 12, 15, 24, 30, 48 V	3 x 5 x 1.5	300 W
ABC/MBC350*	12, 15, 24, 30, 48, 58 V	3 x 5 x 1	350 W
ABC400	12, 24, 48 V	3 x 5 x 1.5	400 W
ABC/MBC450	5, 12, 15, 24, 30, 48 V	4 x 6.5 x 1.6	450 W
ABC/MBC550	12, 15, 24, 30, 48, 58 V	3 x 5 x 1.5	550 W
ABC/MBC600	12, 15, 24, 28, 48, 52 V	5 x 8 x 1.6	600 W

** Low Profile Series*

Modular Products

Product Highlights

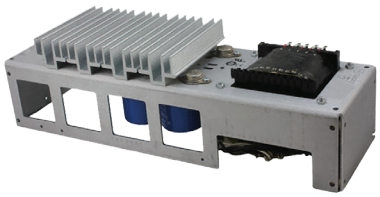
- LPM/LMM409 up to 900 W and 8 Outputs
- LPM/LMM616 up to 1600 W and 12 Outputs
- AC Input up to 440 Hz via Terminal Block
- LMM 2X MOPP and 3rd Edition Medical Approvals
- Radiated and Conducted Emissions - Class B
- Full Load Operation from -20˚C to 50˚C
- Extra-Low 1U Profile (1.6")
- Efficiencies up to 92%
- High power density up to 18 W/in³
- 1 to 4 or 6 isolated output slots, fully user configurable
- Auxiliary power 5 V (1 A)
- Power Factor Correction (PFC)

Modular Designator	# of Outputs	Voltage	Power V_{OUT1}	Current (max)
E	1	2.5 V to 5.3 V	265 W	53 A (61.2 A)
F	1	5.2 V to 15 V	265 W	22 A (25.5 A)
G	1	14 V to 30 V	265 W	11 A (12.7 A)
H	1	29 V to 44 V	265 W	7.4 A (8.5 A)
J	1	43 V to 54 V	265 W	5.5 A (6.4 A)
K	1	1.5 V to 15 V	90 W	6 A (7 A)
L	1	1.5 V to 32 V	90 W	3 A (3.6 A)
M	2	1.5 V to 15 V	90 W	6 A (7 A)
N	2	1.5 V to 32 V	90 W	3 A (3.6 A)

Visit our online configuration tool:
lpm.belpowersolutions.com

LPM Configurator

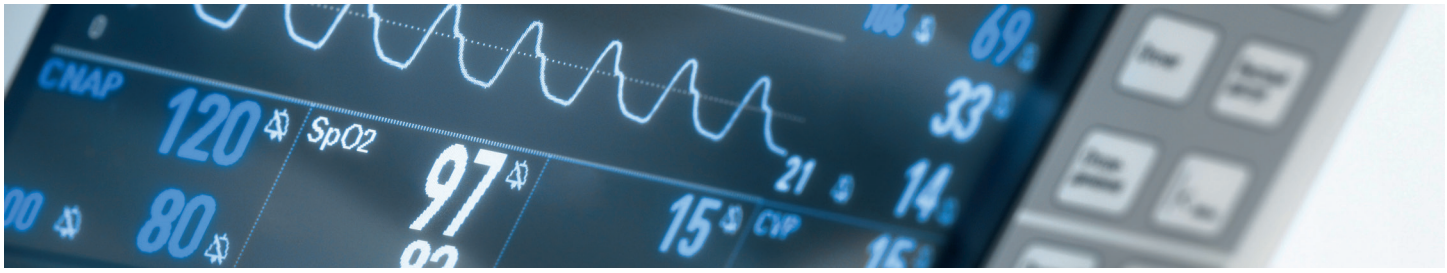
Linear Regulators



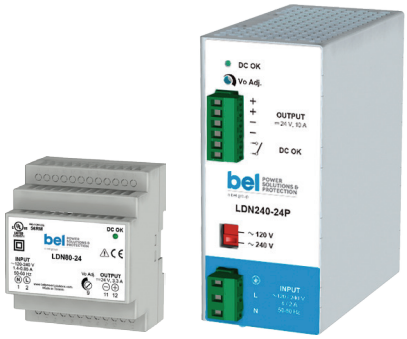
Product Highlights

- Worldwide AC Input Capabilities
- ±0.05% Output Regulation
- MTBF over 300 kH
- Low Output Ripple
- 100% Burn-In
- Overvoltage Protection (OVP) Standard on 5 V Single Outputs, Optional for Other Outputs under 48 V

Series	V_{IN}	V_{OUT}	Power
Single Output			
F	100 - 264 V	5 - 28 V	192 - 288 W
G	100 - 264 V	5 V	175 W
Hx	100 - 264 V	5 - 28 V	7.5 - 192 W
Dual Output			
Hxx	100 - 264 V	5 - 24 V	9.6 - 150 W
Triple Output			
Hxxx	100 - 264 V	5 - 15 V	16 - 150 W
CP131	100 - 264 V	5 - 15 V	51 - 85 W



DIN-Rail Switching Mode Power Supplies



Product Highlights

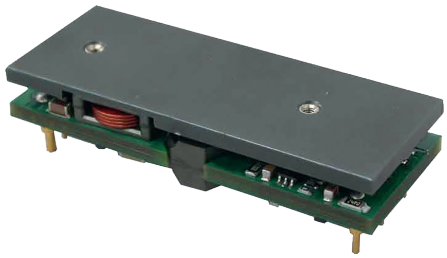
- Universal wide AC and DC Input voltage ranges
- Suitable for applications in SELV and PELV circuits Class I or Class II
- Adjustable output
- Easy parallelable for redundancy
- High reliability
- High oveload capability
- Compact size

Redundancy and Back-up Units

LDX-B20: 150J Buffer Module
LDX-C120 Series: Battery Charger / DC UPS Module
LDX-D20 / LDX-D50: Active ORing Controllers
LDX-L30: Sealed Lead-Acid Battery Pack
LDB120 Series: 120 W Integrated PS / Battery Charger / DC UPS
LDX-U20 Series: Battery Charger / DC UPS Unit

Series	V_{IN}	V_{OUT}	Power
LDN20	90 - 264 VAC (110 - 345 VDC)	12, 24 VDC	20 W
LDN40	90 - 264 VAC (110 - 345 VDC)	2x 12-16, 12-15, 24 VDC	40 W
LDN80	90 - 264 VAC (110 - 345 VDC)	12 -15, 24 VDC	80 W
LDN85	90 - 264 VAC (110 - 345 VDC)	5, 24 VDC	85 W
LDN120	90 - 264 VAC (110 - 345 VDC)	12, 24, 48 VDC	120 W
LDN240	90-132 / 187-264 VAC (270 - 345 VDC)	12, 24, 48, 72 VDC	240 W
LDN480	187 - 264 VAC (250 – 375 VDC)	24 VDC	480 W
LDN481	90-132 / 187-264 VAC (270 - 345 VDC)	24, 48, 72 VDC	480 W
LDC120	90 - 264 VAC (110 - 345 VDC)	24, 48 VDC	120 W
LDC240	90 - 264 VAC (110 - 345 VDC)	12, 24, 36, 48, 72 VDC	240 W
LDC480	90 - 264 VAC (110 - 345 VDC)	24, 36, 48, 72 VDC	480 W
LDW25	90 - 550 VAC (150 - 725 VDC), 1/2 ph	24 VDC	25 W
LDW120	187- 550 VAC (250 - 725 VDC), 1/2 ph	12, 24, 48 VDC	120 W
LDW240	187- 550 VAC (250 - 725 VDC), 1/2/3 ph	12, 24, 48, 72 VDC	240 W
LDW480	187- 550 VAC (250 - 725 VDC), 1/2/3 ph	24, 48, 72 VDC	480 W
LDT480	340 - 550 VAC (470 - 725 VDC)	24 VDC	480 W
LDT481	340 - 550 VAC (520 - 725 VDC)	12, 24, 48, 72 VDC	480 W
LDT720	340 - 550 VAC (520 - 725 VDC)	24, 48 VDC	720 W
LDT960	340 - 550 VAC (520 - 725 VDC)	24, 48, 72 VDC	960 W
LDT2400	340 - 550 VAC (520 - 725 VDC)	24, 48, 72,170 VDC	2400 W
LDP200-200	170- 550 VAC (250 - 725 VDC)	36 - 205 VDC	200 W
LDP200-120	170- 550 VAC (250 - 725 VDC)	24 - 120 VDC (User settable)	200 W
LDD120	12, 24, 48 VDC	12, 24 VDC	120 W
LDD240	110 VDC	24 VDC	240 W

Isolated DC-DC Converters and Filters



Product Highlights

- Sixteenth Brick to Half Brick Form Factors
- Wide (4:1) and Narrow (2:1) Input Ranges
- Through Hole (THT) and Surface Mount (SMT) Options
- Output Voltages from 0.5Vdc to 15Vdc
- High Power Density

Single Output Isolated Bricks

Model	Mount	V_{IN}	V_{OUT}	Power
1/16 Brick (0.9 x 1.3 in)				
0RSB / SRSB	SMT, THT	36-75 V	1.2, 1.5, 1.8, 2.5, 3.3, 5, 12 V	100 W
UIS	THT	18-75 V	3.3, 5, 12 V	72 W
1/8 Brick (0.896 x 2.3 in)				
0RCY	THT	18-36 V	1.8, 3.3, 12 V	120 W
0RCY	THT	36-75 V	1.2, 1.5, 1.8, 2.5, 3.3, 5, 12 V	300 W
UIE	THT	18-75 V	3.3, 5, 12 V	120 W
1/4 Brick (1.45 x 2.3 in)				
0RQB	THT	18-36 V	5, 12 V	240 W
0RQB	THT	36-75 V	1.2, 2.5, 3.3, 5, 12 V	600 W
UIQ	THT	18-75 V	3.3, 5, 12 V	240 W
1/2 Brick				
0RHB	THT	9-36 V	15 V	100 W
0RHB	THT	36-75 V	1.2, 1.5, 1.8, 2.5, 3.3, 5, 12 V	600 W

Dual Output Isolated Bricks

Two independently regulated outputs.

Model	Mount	V_{IN}	V_{OUT1}	V_{OUT2}	I_{OUT1}	I_{OUT2}
1/4 Brick (1.45 x 2.3 in)						
QD / ORQB	SMT, TH	36-75 V	1.0 V 1.2 V 1.6 V 1.8 V 2.0 V 2.5 V 3.3 V 12 V	1.5 V 1.8 V 2.5 V 3.3 V 3.4 V 5.0 V -12 V 28 V	2.7 A 10 A 12 A 13 A 15 A 18 A 25 A	1.5 A 5 A 7 A 8 A 10 A 12 A 15 A

Regulated Bus Converters (RBC)

- Industry Standard Pin-Outs
- Excellent Thermal Performance
- Direct Current Sharing

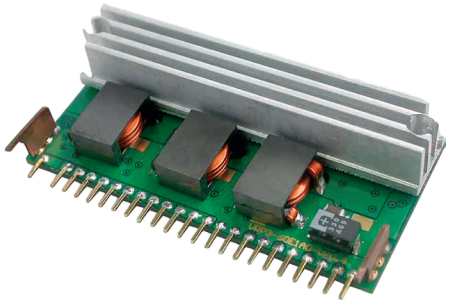
Model	V_{IN}	V_{OUT}	Max I_{OUT}	Power
1/16 Brick (0.9 x 1.3 in)				
ARSB-D5S10L	45 - 56 V	10.6 V	24 A	250 W
1/8 Brick (0.896 x 2.3 in)				
0RRE-32S10R	38 - 55 V	8.2 V	36 A	300 W
0RCY-Q0S10L	45 - 56 V	9.7 V	41 A	400 W
ARCY-F0S10L	45 - 56 V	10.4 V	48 A	500 W
1/4 Brick (1.45 x 2.3 in)				
0RRQ-45M11R	51 - 55 V	9.7 V	51 A	480 W
0RQB-S0S12L	45 - 56 V	10.4 V	60 A	600 W
0RQB-E0S10L	51 - 56 V	9.6 V	85 A	810 W
0RQB-S0M11L	48.6 - 60 V	11.2 V	62.5 A	700 W
0RQB-F5S11L	38 - 56 V	10.6 V	52 A	550 W
ARQB-X0S10L	45 - 56 V	10 V	100 A	1000 W

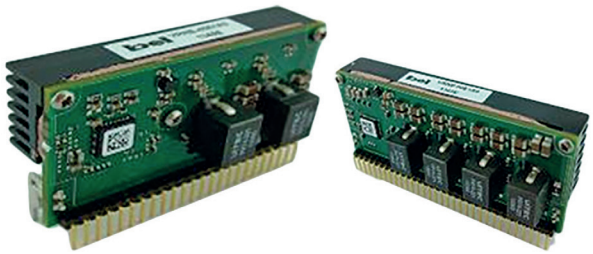
Input Filters

The F and FC Series of input filters minimize the conducted and radiated emissions generated by switch mode DC-DC converters and allow them to meet string cut FCC and EN5022 Class B conducted emissions requirements.

Model	Rated Voltage	Current (max)	Board Mount	Dimensions
F2410-G	0 - 45 V	10 A	Mount SMT	1.00 x 0.750 x 0.26
F4804A-G	0 - 45 V	4 A	Mount SMT	1.20 x 0.815 x 0.38
F4810-G	0 - 80 V	10 A	Mount SMT	1.20 x 0.815 x 0.38
FC100V5A-G	0 - 100 V	5 A	Board THT	1.00 x 1.00 x 0.40
FC100V6A-G	0 - 100 V	6 A	Board THT	1.00 x 1.00 x 0.40
FC100V10A-G	0 - 100 V	10 A	Board THT	2.00 x 1.00 x 0.44
FC100V20A	0 - 100 V	20 A	Board THT	2.05 x 1.65 x 0.46

Non-Isolated DC-DC Converters





Point of Load Converters

- Low Voltage, High Density Systems with Intermediate Bus Architectures (IBA)
- Exceptional Thermal Performance in High Temperatures
- High Efficiency Synchronous Buck Topology
- Slim Profiles
- Highly-Regulated Programmable Output Voltages
- Industry-Standard Through-Hole SIP

Series	V_{IN}	V_{OUT}	Max I_{OUT}
YEV	4.25 - 13.8 V	0.59 - 5.1V	3 - 20 A
YH	5 - 13.8 V	0.6 - 3.63 V	40 A
YM	3 - 14 V	0.7525 - 5.5 V	5 A
YS	3 - 5.5 V or 9.6 - 14 V	0.7525 - 5.5 V	10 - 16 A
YNV	3 - 5.5 V or 9.6 - 14 V	0.7525 - 5.5 V	5, 10, 16 A
YV	5 - 13.8 V or 10 - 14 V	0.6 - 1.98 V	60 A
VRAx	4.5 - 13.8 V	0.59 - 5.1 V	10 A
0RPx	4.5 - 13.8 V	0.591 - 5 V	50 A
VRPx	4.5 - 13.8 V	0.591 - 5.1 V	90 A

Tunable Loop™

- Max Output Power 10 W – 100 W
- Remote On/Off
- Adjustable Output Voltage
- Output Voltage Sequencing Option
- PMBus Enabled Versions
- Over Current and Over Temperature Protection

Series	V_{IN}	V_{OUT}	I_{OUT}
SLIN	2.4 - 14 V	0.59 - 5.5 V	2 - 50 A
SLAN	3 - 14.4 V	0.6 - 5.5 V	3 - 40 A
SLDN	3 - 14.4 V	0.45 - 5.5 V	3 - 40 A
SLIM	3 - 14.4 V	0.45 - 5.5 V	6 - 12 A*
SLDM	3 - 14.4 V	0.45 - 5.5 V	6 - 12 A*

** Ultra thin modules with a maximum height of 0.11"*

Voltage Regulator Modules (VRM)

- Meet the Stringent Dynamic Response and High Current Requirements Posed by Today's Microprocessor Applications
- Compatible to Intel VRM Specification
- Wide Input Voltage Ranges
- Output Currents from 30 A to 165 A

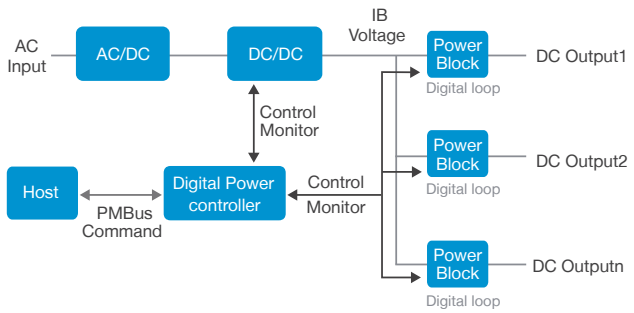
VRM Spec	V_{IN}	V_{OUT}	Max I_{OUT}
VRM8.5	10.3 - 13.2 V	1.05 - 1.825 V	30 A
VRM9.x	3 - 15 V	1.05 - 1.85 V	81 A
VRM10.x	10.3 - 13.2 V	0.8 - 2.5 V	150 A
VRM11.x	4.5 - 13.2 V	0.5 - 1.6 V	120 A
VRM12.x	6.5 - 13.8 V	0.6 - 1.52 V Dual	165 A / 25 A Dual
AMD	10.8 - 13.2 V	0.83 - 1.4 V	30 A

SRPE Power Modules

- Vertical Surface Mount Configuration
- Compensation-Less COT Control
- Under-Voltage Lockout
- Remote On/Off
- Over Current and Short Circuit Protection

Part Number Active High	V_{IN}	V_{OUT}	Max I_{OUT}	Power
SRPE-02E1A0	5.5 - 13.2 V	0.6 - 5.5 V	1.5 A	8 W
SRPE-03E1A0	5.5 - 13.2 V	0.6 - 5.5 V	3 A	16.5 W
SRPE-06E1A0	5.5 - 13.2 V	0.6 - 5.5 V	6 A	33 W
SRPE-12E1A0	5.5 - 13.2 V	0.6 - 5.5 V	12 A	66 W
SRPE-20E1A0	4.5 - 13.2 V	0.6 - 2.0 V	20 A	40 W
SRPE-30E1A0	4.5 - 13.2 V	0.6 - 2.0 V	30 A	60 W
SRPE-50E1A0	7.5 - 13.2 V	0.6 - 2.0 V	50 A	100 W

Digital Power System



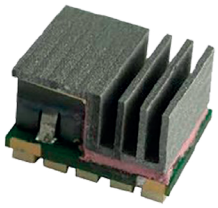
Digital Power System Controller

- DSP Engine with Bel's Firmware
- Digital PID Loop
- Sequencing and Timing Logic
- Fault Detection and Action
- Monitoring and Reporting
- PMBus Compatible

Part Number	Input Voltage	Control & Monitor Power Block Number	Monitor VRM Number	Monitor Analog Input Number
TRKB-80D62ER	3.3 V	6	2	1

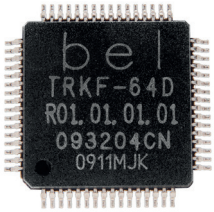
Power Block Series

- High Power in a Small Footprint
- Self-Contained Thermal Management
- Used with either Digital or Analog Controllers
- High Efficiency
- Superior Power Density
- Easily modified



Part Number	V_{IN}	V_{OUT}	Max I_{OUT}	Power
VRPL-06G1A0	8 - 14 V	0.8 - 3.3 V	6 A	19.8 W
SRPL-06G1A0	8 - 14 V	0.8 - 3.3 V	6 A	19.8 W
SRBB-20A1A0	7 - 13.2 V	0.8 - 5.0 V	20 A	100 W
VRPL-20G1A0	8 - 14 V	0.8 - 3.3 V	20 A	66 W
SRPL-20G1A0	8 - 14 V	0.8 - 3.3 V	20 A	66 W
SRBL-30A1A0	7 - 13.2 V	0.8 - 5.0 V	30 A	150 W
VRPL-30G1A0	8 - 14 V	0.8 - 3.3 V	30 A	99 W
SRPL-30G1A0	8 - 14 V	0.8 - 3.3 V	30 A	99 W
SRBL-60A1AC	8 - 13.2 V	0.6 - 3.3 V	60 A	198 W
SRBL-C3A1AC	8 - 13.2 V	0.6 - 3.3 V	130 A	429 W

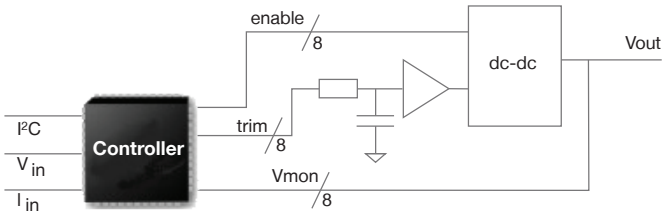
Power Management



On-Board Power System Controller

- Provides controlling, monitoring, and sequencing of multiple Point of Load (POL) converters on a system board
- Digital Signal Processor (DSP) with Bel's Firmware
- Power-down Data Log for Identifying Fault Conditions
- Configurable Through Serial Interface/PMBus
- Voltage Margining via Closed Loop Trim
- Sequencing Up and Down Logic Control
- Fault Detection and Reporting
- Analog Input Monitoring

Part Number	Input Voltage	Control & Monitor POL Number	Monitor VRM Number	Monitor Analog Input Number
TRKF-44D62ER	3.3 V	4	0	2
TRKF-64D82ER	3.3 V	8	2	2
TRKF-10DC4ER	3.3 V	12	4	3



Rugged 3U Cassettes

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Product Highlights

- Wide input for battery applications from 12 V to 220 V nominal
- Universal AC input with identical form factors
- High efficiency, up to 94.5% including input filter
- Ultra-wide output voltage adjustment
- Rugged aluminum case, conformally coated
- Convection Cooled for Ta -40°C to +71°C
- Self-cooling, no derating over the specified temperature range
- Tested and Approved for Railway
- Immune to Extreme Harsh Environmental Conditions
- Full I/O Protection and Filters

Accessories

- 19” Racks and backplanes
- Base plates or heat sinks for chassis mounting
- Mating female connectors for solder, cage clamp or faston connections
- Connector retention devices
- Front panels for 19” rack mount
- Chassis and DIN Rail mounting kits
- Temperature sensors for optimal battery charging

Model#	AC Input Voltage	DC Input Voltage	Output Voltages	# Of Outputs	Power
M Series (8 TE)	85 – 264 VAC*	8 – 385 VDC (6 ranges)	5 – 60; ±12, ±15; 5/±12, 5/±15 V	1, 2 or 3	50 W
S Series (12 TE)	85 – 264 VAC* (PFC)	8 – 385 VDC (6 ranges)	5, 12, 15, 24, 48; ±12, ±15, ±24 V	1 or 2	100 W
K Series (16 TE)	85 – 264 VAC* (PFC)	8 – 385 VDC (6 ranges)	5, 12, 15, 24, 48; ±12, ±15, ±24 V	1 or 2	150 W
LKP Series (16 TE)	187 – 255 VAC (PFC)	N/A	12, 24, 48; ±12, ±24 V	1 or 2	250 W
T Series (28 TE)	70 – 140; 85 – 255 VAC (PFC)	N/A	24 – 54.5 V	1	500 W
Q Series (4 TE)	N/A	14.4 – 154 VDC (5 ranges)	3.3 – 48; ±5, ±12, ±15, ±24 V	1 or 2	82 – 132 W
P Series (4 TE)	N/A	14.4 – 154 VDC (5 ranges)	3.3 – 96 V	1, 2, 3 or 4	100 – 192 W
HP Series (4 TE)	N/A	12.5 – 154 VDC (1 range)	5 – 96 V	1, 2, 3 or 4	120 – 192 W
HR Series (12, 16 TE)	N/A	12 – 168 VDC (1 range)	±12, ±15, ±48 V	1 or 2	144 – 288 W
ER Series (12, 16 TE)	N/A	66 – 168 VDC (1 range)	±12, ±15, ±48 V	1 or 2	144 – 288 W
LR Series (12, 16 TE)	90 – 264 VAC (PFC)	N/A	±12, ±15, ±48 V	1 or 2	210 – 300 W
* 47 – 440 Hz	# 1 TE = 0.2”				

Rail Chassis Mount

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Product Highlights

- Input voltage ranges for 24 - 110 V batteries
- Output voltages 12 or 24 V models
- Integrated enclosure for chassis mounting
- Extremely high efficiency and high power density
- Low inrush current
- 3 connectors: Input, output, auxiliary (150 W / 300 W models)
- Overtemperature, overvoltage, overcurrent, and overload protection
- Compliant to EN 50155 and EN 45545

Models	V_{IN}	V_{OUT}	I_{OUT}	Power
24RCM150-12	24 V (16.8 – 45 V)	12 V	12.5 A	150 W
24RCM150-24		24 V	6.25 A	
110RCM150-12	110 V (50.4 – 137.5 V)	12 V	12.5 A	150 W
110RCM150-24		24 V	6.25 A	
24RCM300-12	24 V (16.8 – 45 V)	12 V	25 A	300 W
24RCM300-24		24 V	12.5 A	
110RCM300-12	110 V (50.4 – 137.5 V)	12 V	25 A	300 W
110RCM300-24		24 V	12.5 A	
110RCM500-24	110 V (77 – 137.5 V)	24 V	21 A	500 W
110RCM1000-24	110 V (77 – 137.5 V)	24 V	42 A	1000 W

Rugged DC-DC Board-Mount

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Product Highlights

- Wide Input Voltage Ranges
- Efficiency up to 93.5%
- Wide Operating Temperature Ranges with ability to startup at -40°C or below and no derating to 70°C
- Isolated Converters with Magnetic Feedback
- I/O Test Voltages up to 3 kVAC
- Low Output Ripple and Excellent Dynamic Response
- Meet or Exceed National and International Railway Standards with Little or No External Components, in Compliance with EN50155 and EN50121
- Variety of Mounting Styles for Numerous Applications

Series	V_{IN}	V_{OUT}	I_{OUT}
IMX4	4.7 - 121 V	3.3 - 48 V	1.2 A
IMX7	8.4 - 150 V	3.3 - 48 V	2.1 A
IMX15/IMY15	8.4 - 150 V	3.3 - 48 V	4.5 A
IMX35	9 - 150 V	5 - 60 V	7 A
IMX70/IMY70	12 - 154 V	5 - 48 V	16 A
IBX15	15.4 - 154 V	50 - 160 V	N/A
ORQB	9 - 36 V	12 V	13 A
ORQB	14 - 154 V	5 V	3 A
ASQ24*	18 - 36 V	1.5 - 15 V	15 A
ASQ28*	18 - 36 V	1.5 - 5 V	15 A
ASQ48*	36 - 75 V	1.5 - 5 V	15 A

** Startup at -55°C Operating temperature up to 100°C baseplate*

CompactPCI®

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Product Highlights

- Wide Range DC or AC Input with PFC
- 4 High Current Outputs with Flexible Load Distribution
- Integrated Oring FETs/Diodes for True Redundancy
- Inhibit and Enable Inputs
- Single-Wire Current Share Function for 3 Outputs
- Hot-Swap Capability
- Compliant to PICMG® power interface specification for Compact PCI® systems

Model	V_{IN}	V_{OUT}	I_{OUT}	Power
CPA250-4530G	90 – 264 VAC	5, 3.3, ±12 VDC	40, 40, 5, 2 A	250 W
CPA500-4530G	90 – 264 VAC	5, 3.3, ±12 VDC	50, 60, 12, 4 A	500 W
CPD250-4530G	36 – 75 VDC	5, 3.3, ±12 VDC	40, 40, 5, 2 A	250 W
CPD500-4530G	36 – 75 VDC	5, 3.3, ±12 VDC	50, 60, 12, 4 A	500 W

PCI: Peripheral Component Interconnect
PICMG:PCI Industrial Computer Manufacturers Group

Switching Regulators

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Product Highlights

- Inputs up to 40 V, 80 V, or 144 V
- Buck Converter – No I/O Isolation
- Outputs 3.3 V up to 48 V (Vo > Vin min)
- Output Ratings from 50 W to 720 W
- Output Trim 0% to 108%
- Efficiency up to 96%
- -40˚C to +71°C, No Derating or Air Flow
- Full Metal Jacket, Rack / Chassis Mount

Series	V_{IN}	V_{OUT}	I_{OUT}
PSR Series*	7 – 40, 8 – 80 VDC	0 – 36 VDC	2 – 4 A
PSA Series*	7 – 35, 18 – 156 VDC	0 – 48 VDC	1 – 5 A
PSB Series*	7 – 40, 8 – 80, 15 – 156 VDC	0 – 48 VDC	4 – 8 A
PSC Series*	7 – 40, 8 – 80, 18 – 156 VDC	0 – 48 VDC	6 – 12 A
PSL Series**	7 – 40, 8 – 80, 18 – 156 VDC	0 – 48 VDC	6 – 12 A
PSS Series**	8 – 40, 8 – 80, 18 – 156 VDC	0 – 48 VDC	9 – 18 A
PSK Series**	8 – 40, 8 – 80, 18 – 156 VDC	0 – 48 VDC	12 – 25 A

** PCB or Chassis mounting*
***Rack or Chassis mounting*

DIN Rail

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Product Highlights

- Excellent Immunity to Environmental Conditions
- Wide Temperature Range
- Universal Input Range and Additional VDC Input
- Rectifier and Battery Charger Versions
- Class 1 Equipment
- DIN-Rail Mounting Kits Available

Series	V_{IN}	V_{OUT}	Power
LW-Series, single	85-264 VAC (90-350 VDC)	12, 24, 36, 48 VDC	125 W
LW-Series, dual	85-264 VAC (90-350 VDC)	2x 12, 2x 24, 2x 36, 2x 48 VDC	250 W
LX-Series, triple	85-264 VAC (90-350 VDC)	24, 36, 48 VDC	375 W
LX-Series, quad	85-264 VAC (90-350 VDC)	2x 24, 2x 36, 2x 48 VDC	500 W
EW- Series, single / dual	66-150 VDC	24 or 2x 24 VDC	120, 240 W

DC-DC Converter

DNC Series: Product Highlights

- Input Voltage Range 240-430 VDC / 400-850 VDC
- 93% Typical Efficiency
- Up to 4 kW Power (max. 16 kW)
- Full Galvanic Isolation between Input and Output
- CAN Bus Serial Interface
- Liquid or Convection Cooling
- Adaptable to Various HVIL Input Connectors
- Flexible Output Connectivity
- Wide Ambient Operational Temperature Range
- IP65 and IP67
- E-mark compliant

DC-AC Inverter

INV Series: Product Highlights

- Input Voltage Range 240-430 VDC/ 400-850 VDC
- 92 % Typical Efficiency
- Up to 6 kW Power (in parallel mode max. 36 kW)
- Full Galvanic Isolation between Input and Output
- CAN Bus Serial Interface
- Liquid or Convection Cooling
- Adaptable to Various HVIL Input Connectors
- Flexible Output Connectivity
- Wide Ambient Operational Temperature Range
- IP65 and IP67
- E-mark compliant
- Single phase and three phase configuration possible

Bi-Directional Inverter Charger

INVCH Series: Product Highlights

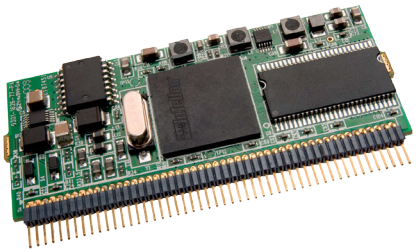
- Input Voltage Range 90 – 264 VAC / 47 – 63 Hz
- 90% Typical Efficiency
- Charge Mode Output 250-435 VDC
- Export Power Mode Output 120/240 VDC (50/60 Hz)
- Liquid Cooled only
- CAN Bus Serial Interface
- Wide Ambient Operational Temperature Range
- IP65 and IP67
- Available Grid-Tie model certified according UL1741

Custom Solutions

Examples of Custom Solutions

- Bi-Directional DC/DC Converters
  - Input Voltage Range 660 – 770 VDC
  - Efficiency > 96% at Vin = 700 VDC and Iout nominal
  - Up to 22.5 kW (max. 90 kW)
  - Convection or Liquid Cooling Available
- Motor Controllers for Bow Thrusters
- On-Board Battery Chargers for Hybrid-Electric Vehicles (single or three phase solutions available)
- Inverters for Marine Applications

Powerline Modules



Part Number	Description	Temp. Range	Data Rate
0804-5000-17	HomePlug®/Powerline Module	0 to 70°C	200 MB/s
0804-5000-18	HomePlug®/Powerline Module	0 to 70°C	200 MB/s
0804-5000-23	Module for Ethernet Over Coax	-40 to +85°C	200 MB/s
0804-5000-24	HomePlug®/Powerline Module	-40 to +85°C	200 MB/s
0804-5000-50	HomePlug®/Powerline Module	-40 to +85°C	500 MB/s
0804-5000-51	HomePlug®/Powerline Module	-40 to +85°C	500 MB/s

Product Highlights

- Based on Qualcomm Atheros AR6400/AR1400 or AR7410/AR1500 chipsets
- Comply with HomePlug® AV standards
- Temperature rated for industrial applications
- 128-bit AES Link Encryption with key management for secure power line communications
- Dynamic channel adaptation and channel estimation maximizes throughput in harsh channel conditions
- THT mounting configuration using standard 1.27 mm pin header

Custom & Value-Added Solutions

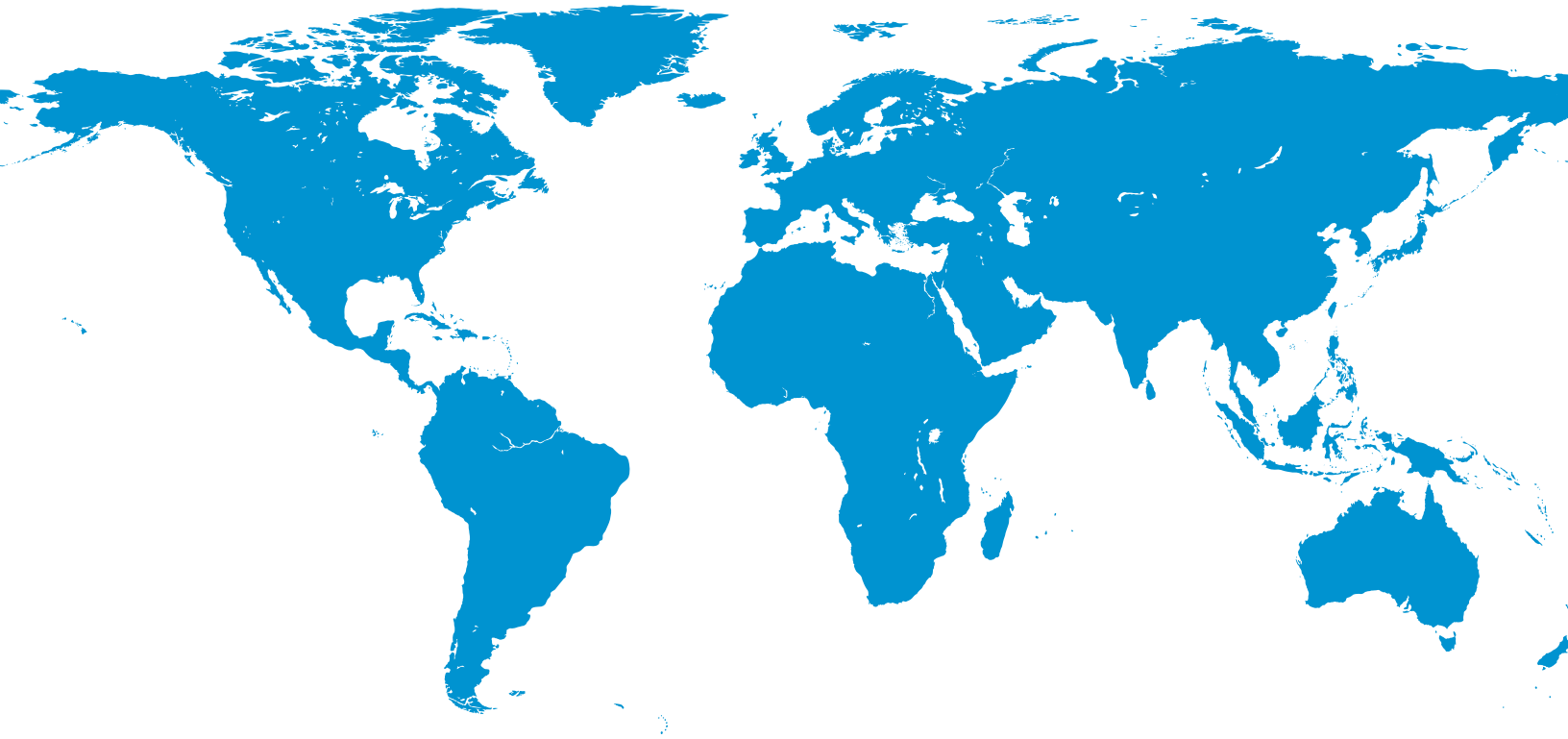
Bel Power Solutions designs and manufactures a wide range of standard products but we are able to manage design changes to provide the ideal solution for our customers through the modification of our standard products, value-added enhancements, or by developing fully customized designs.

We Offer:

- Changes in Packaging (modified cable lengths, form factors, custom connectors)
- Modified Performance (custom voltages, custom functions, cooling options, temperature ranges)
- Value-Add Enhancements
- Manufacturing Services
- Vertical Integrations
- Design and Development

About Bel Power Solutions

Bel Power Solutions & Protection offers world-class AC-DC and DC-DC power conversion products, value-add power solutions, complete box-build solutions and contract manufacturing services, along with a complete portfolio of Electronic Circuit Protection devices. Bel Power Solutions & Protection is a market leader in railway with Melcher brand products and technology leaders in the development of high-efficiency and high power-density front-end products.



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