

# Technical Information

PrimeSTACK™

## 6PS0150R12DLC-3G

power electronics in motion



**Vorläufige Daten**  
preliminary data

### Key data

3x 150A AC at 400V AC, forced air (fan not implemented)

### General information for:

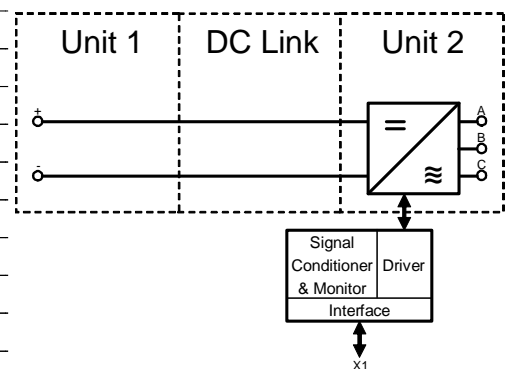
Stacks for various inverter application. IGBT's, heat sinks, drivers and sensors included.

These are only technical data!

Please read carefully the complete document and maintain the proper design environment!

Especially note the EMC environment and the controller's functionality.

Topology	B6I
Load type	resistive, inductive
Cooling	forced air (fan not implemented)
Application target	common industrial, drives, power supply
Monitors	current, temperature
Module (Unit 1)	none
DC Link	none
Module (Unit 2)	IGBT 3x BSM150GB120DLC
Interface	electrical CMOS
Standards	EN50178, UL94
Product ID (eupec)	27087
Mechanical drawing number	38000030
Electrical drawing number	6PS-C3-V



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#### Electrical data

DC Link			min	typ	max	units
Voltage		V <sub>DC</sub>		650	850	V

Unit 2 AC			min	typ	max	units
Continuous current	V <sub>Unit2</sub> = 400V <sub>RMS</sub> , V <sub>DC</sub> = 650V, T <sub>inlet</sub> = 40°C, T <sub>J</sub> ≤ 125°C, f <sub>Unit2</sub> = 50Hz, f <sub>sw2</sub> = 5000Hz, cos(phi) = 0,85	I <sub>Unit2</sub>			150	A <sub>RMS</sub>
Continuous current overload cap.	T <sub>inlet</sub> = 40°C, for overload capability 150% for 60s			100		A <sub>RMS</sub>
Short time current	10s, every 180s, initial load = 150A <sub>RMS</sub>	I <sub>Unit1</sub>			180	A <sub>RMS</sub>
DC current	no rotating field	I <sub>Unit2 DC</sub>			60,0	A <sub>av</sub>
Overcurrent shutdown				250		A <sub>peak</sub>
Switching frequency		f <sub>sw2</sub>			20000	Hz
Power losses	V <sub>Unit2</sub> = 400V, V <sub>DC</sub> = 650V, T <sub>inlet</sub> = 40°C, T <sub>J</sub> ≤ 125°C, f <sub>Unit2</sub> = 50Hz, f <sub>sw2</sub> = 5000Hz, cos(phi) = 0,85, I <sub>Unit2</sub> = 150A <sub>RMS</sub>	P <sub>loss2</sub>		1650		W

General data			min	typ	max	units
Power losses (PCB)		P <sub>loss aux</sub>			t.b.d.	W
EMC test	according to IEC61800-3 at named interfaces	power	V <sub>Burst</sub>	2		kV
		control	V <sub>Burst</sub>	1		kV
		aux (24V)	V <sub>Surge</sub>	1		kV
Insulation management is designed for		V <sub>Line</sub>		500		V <sub>RMS</sub>
Insulation test voltage	according to EN50178, f = 50Hz, t = 60s	V <sub>isol</sub>		1,8		kV <sub>RMS</sub>

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### Controller interface data

			min	typ	max	units
Auxiliary voltage		$V_{aux}$	13	24	30	$V_{av}$
Auxiliary power requirement		$P_{aux}$	40			W
Driver and interface board	see separate technical information		DR210			
Driver core			EiceDRIVER 2ED300C17-S			
Digital input level	resistor to GND 10,0k $\Omega$ , capacitor to GND 1nF	$V_{in}$	0,0		15,3	V
Digital output level	open collector, low = ok, max 15mA	$V_{out}$	0,0		30,0	V
Analog current outputs Unit 2	load max 5mA; at 150A	$V_{ana out}$	5,88	6,00	6,12	V
Analog temperature output	load max 5mA; at $T_{NTC} = 80^{\circ}C$ correspond to $T_j = 125^{\circ}C$	$V_{T out}$	9,80	10,00	10,20	V

### Heat sink air cooled / Thermal data

			min	typ	max	units
Airflow	$T_{Air} = 20^{\circ}C$ , $P_{air} = 1013hPa$ , dry- and dust free, measured on side of heat sink. according to DIN 41882	$\Delta V / \Delta t_{Air}$	500			m <sup>3</sup> /h
Air pressure drop		$\Delta p_{Air}$		150		Pa
Cooling air inlet temperature	$T_{inlet} > 40^{\circ}C$ derating necessary		-40	40	70	$^{\circ}C$

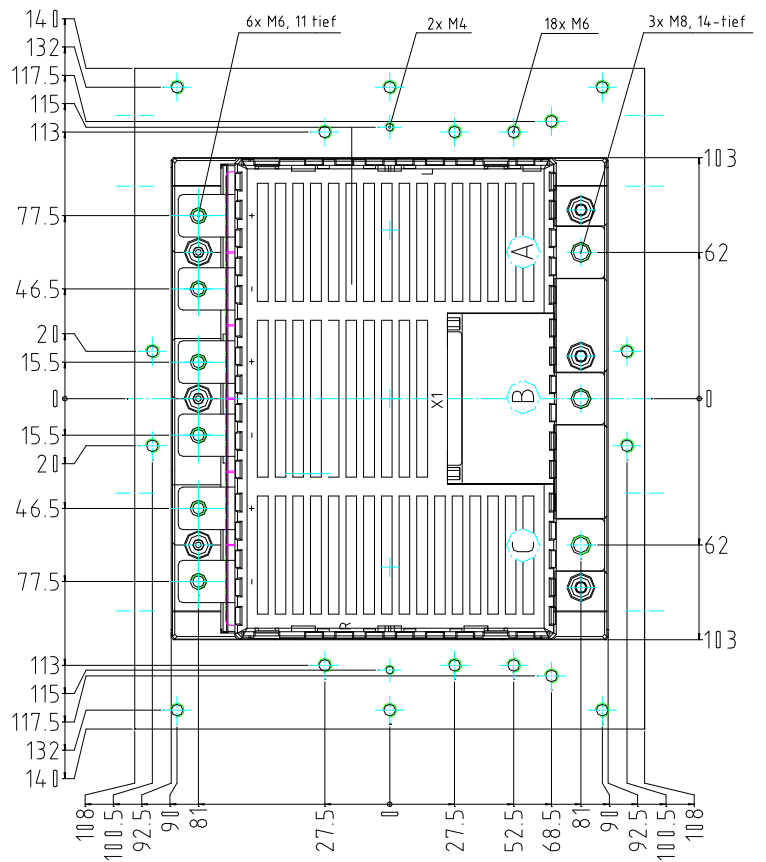
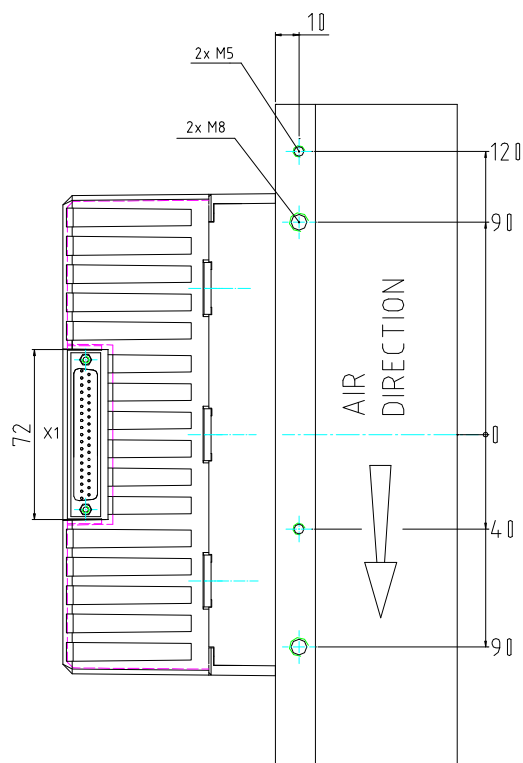
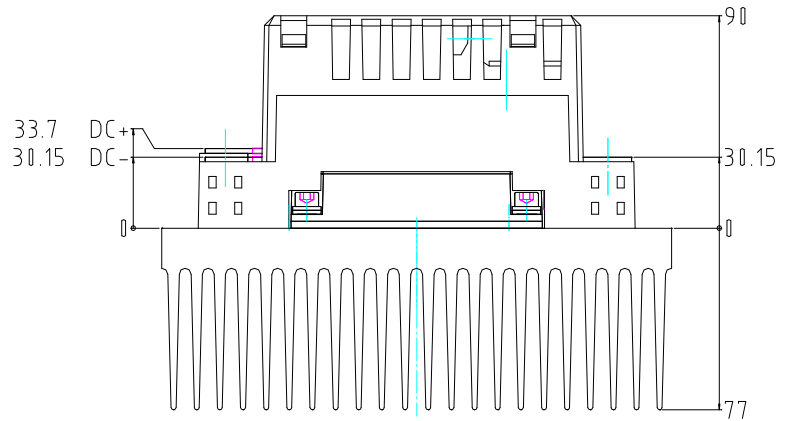
### Environmental conditions

			min	typ	max	units
Storage temperature		$T_{stor}$	-40		85	$^{\circ}C$
Operating temperature (PCB)		$T_{op}$	-25		55	$^{\circ}C$
Operating temperature	see chapter Heat sink air cooled / Thermal data					
Cooling air velocity (PCB)		$V_{Air PCB}$	0,3			m/s
Humidity	no condensation	Rel. F	5		85	%
Installation height			0		1000	m
Vibration	according to IEC60721				5	m/s <sup>2</sup>
Shock	according to IEC60721				40	m/s <sup>2</sup>
Protection degree			IP00			
Pollution degree			2			
Torque at DC Terminals		$M_{DC}$	6,0		10,0	Nm
Torque at AC Terminals		$M_{AC}$	16,0		20,0	Nm
Dimensions	width × depth × height		216	280	167	mm
Weight	approximation			9,2		kg
Weight without heat sink	approximation			2,7		kg

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**Mechanical drawing**

2PS...-3...  
6PS...-3...  
PrimeSTACK C3  
38000030

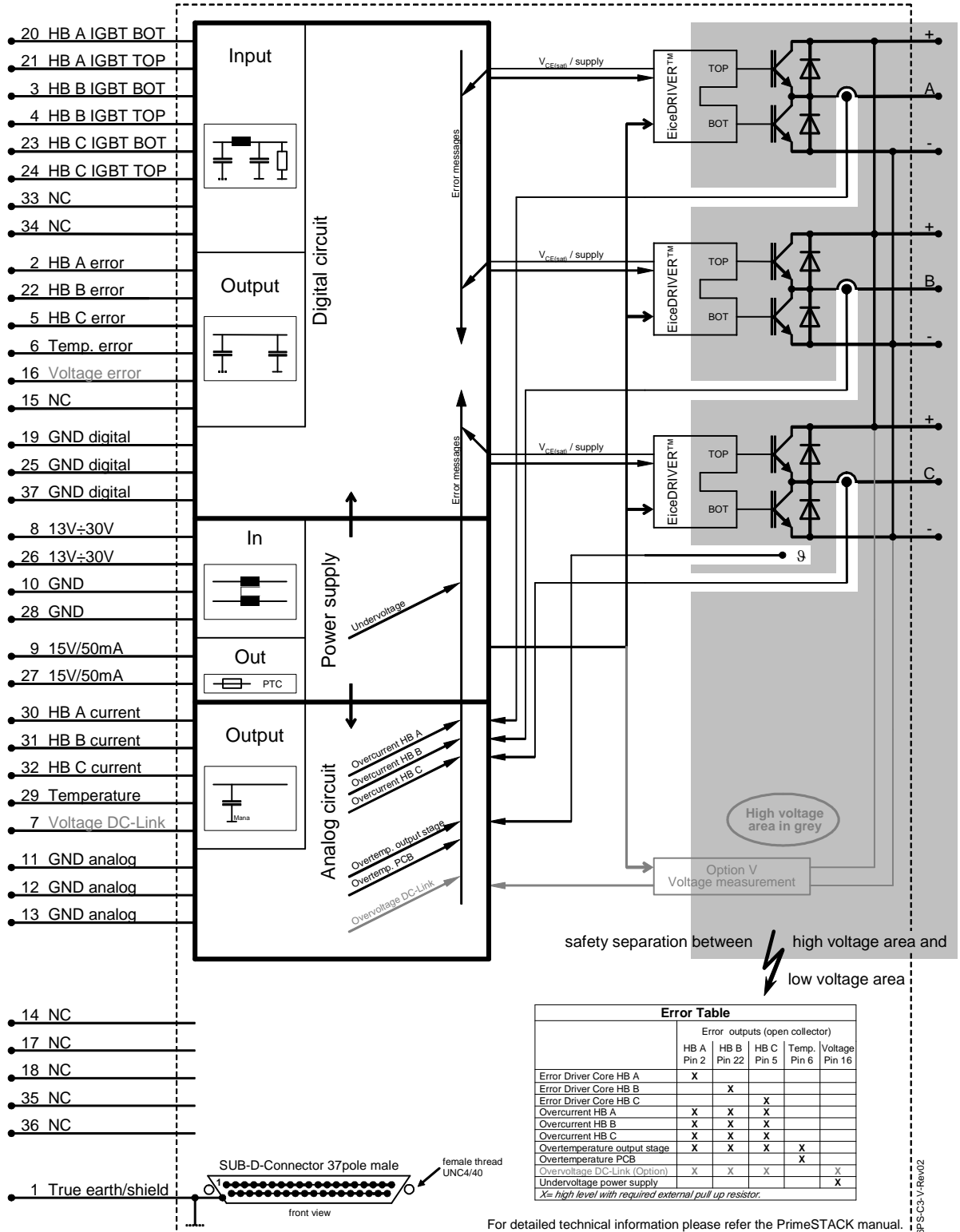


X1:  
2PS : SUB-D-Connector 25 pole, male  
6PS : SUB-D-Connector 37 pole, male

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## Circuit diagram



	Error outputs (open collector)				
	HB A Pin 2	HB B Pin 22	HB C Pin 5	Temp. Pin 6	Voltage Pin 16
Error Driver Core HB A	X				
Error Driver Core HB B		X			
Error Driver Core HB C			X		
Overcurrent HB A	X	X	X		
Overcurrent HB B	X	X	X		
Overcurrent HB C	X	X	X		
Overtemperature output stage	X	X	X	X	
Overtemperature PCB				X	
Overvoltage DC-Link (Option)	X	X	X		X
Undervoltage power supply					X

X= high level with required external pull up resistor.

For detailed technical information please refer the PrimeSTACK manual.

6PS-C3-V/Rev02

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Bevor Sie mit der Installation und dem Betrieb der Baugruppe beginnen, lesen Sie bitte sorgfältig alle Sicherheitshinweise, Warnungen und beachten Sie die angebrachten Warnschilder. Vergewissern Sie sich, dass alle Warnschilder in leserlichem Zustand verbleiben und fehlende oder beschädigte Schilder ersetzt werden.

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Prior to installation and operation, all safety notices and warnings and all warning signs attached to the equipment have to be carefully read. Make sure that all warning signs remain in a legible condition and that missing or damaged signs are replaced. To installation and operation, all safety notices and warnings and all warning signs attached to the equipment have to be carefully read. Make sure that all warning signs remain in a legible condition and that missing or damaged signs are replaced.

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