

**Key data**

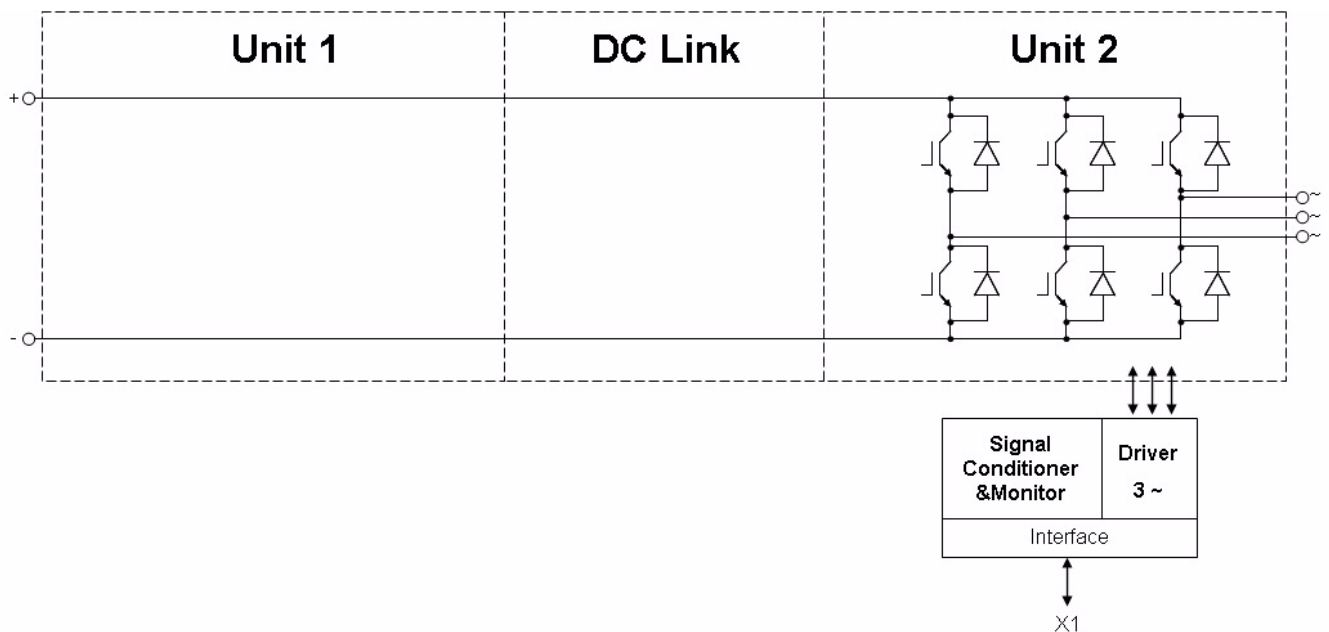
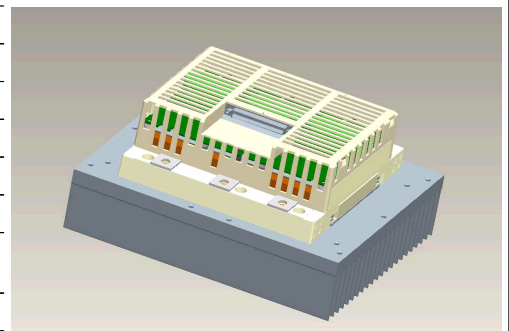
3x 134A AC at 400V AC, forced air (fan not implemented)

**General information for:**

Stacks for various inverter application. Semiconductors, heat sinks, drivers and sensors included. These are only technical data!

Please read carefully the complete documentation and maintain the proper design environment! Especially note the EMC environment and the controller's functionality.

Topology	B6I	
Application / Modulation	Inverter / Sine	
Load type	resistive, inductive	
Cooling	forced air (fan not implemented)	
Market	common industrial, drives, power supply	
Monitors	current, temperature	
Semicond. (Unit 1)	none	
DC Link	none	
Semicond. (Unit 2)	IGBT	3x FF150R12KE3G
Interface IGBT	electrical CMOS	
Standards	EN50178, UL94, prepared for UL508C	
Product ID (eupec)	30176	
Mechanical drawing number	38000030	
Electrical drawing number	6PS-C3-V-Rev03	



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# Technical Information

PrimeSTACK

# 6PS0150R12KE3-3G



## Zieldaten target data

### Notes

#### Overvoltage shutdown:

- It must be realized by the customer.

#### Overvoltage and Overcurrent shutdown reaction time:

- This parameter refers to the customers controller.

### Electrical data

#### DC Link

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

#### Unit 2 AC

			min	typ	max	units
Voltage	depending on controller	V <sub>Unit2</sub>		400		V <sub>RMS</sub>
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>			134	A <sub>RMS</sub>
Continuous current overload cap.	T <sub>inlet</sub> = 40°C, for overload capability 150% for 60s			95		A <sub>RMS</sub>
Short time current	T <sub>inlet</sub> = 40°C, 10s, every 180s, initial load = 115A <sub>RMS</sub>	I <sub>Unit2</sub>			144	A <sub>RMS</sub>
DC current	no rotating field, T <sub>inlet</sub> = 40°C	I <sub>Unit2 DC</sub>			71,0	A <sub>av</sub>
Overcurrent shutdown	within 15µs			320		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> = 134A <sub>RMS</sub>	P <sub>loss2</sub>		1400		W
Power factor		cos(phi) <sub>Unit2</sub>	-1,00		1,00	

#### 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		$V_{aux}$	18	24	30	$V_{av}$
Auxiliary power requirement	$V_{aux} = 24V_{av}$	$P_{aux}$	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, high = on, min 15mA	$V_{in}$	0,0		15,0	V
Digital output level	open collector, low = ok, max 15mA	$V_{out}$	0,0		30,0	V
Analog current outputs Unit 2	load max 1mA; at 134A	$V_{ana out}$	4,18	4,27	4,36	V
Analog temperature output	load max 1mA; at $T_{NTC} = 72^{\circ}C$ correspond to $T_j = 125^{\circ}C$	$V_{T out}$	7,83	7,99	8,15	V
Overvoltage shutdown reaction time	after overvoltage message by PrimeSTACK interface				50	$\mu s$
Overcurrent shutdown reaction time	after overvoltage message by PrimeSTACK interface				10	$\mu s$

### 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		-25		40	$^{\circ}C$

### Environmental conditions

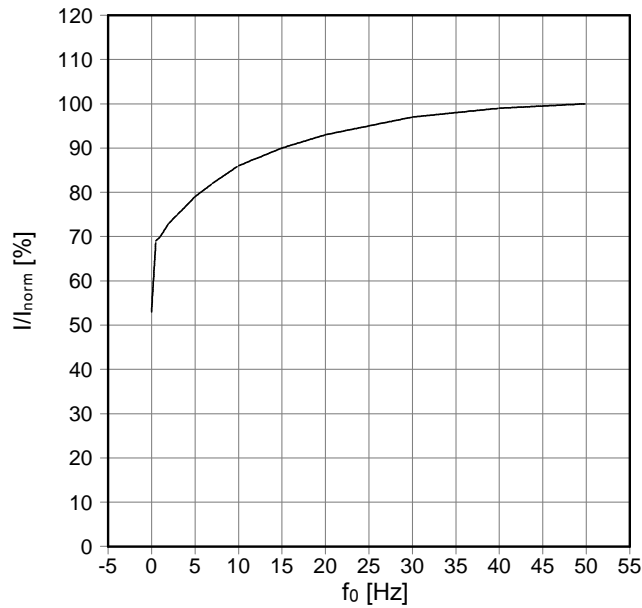
			min	typ	max	units
Storage temperature		$T_{stor}$	-40		85	$^{\circ}C$
Ambient temperature (PCB)		$T_{amp}$	-25		55	$^{\circ}C$
Operating temperature	see chapter Heat sink air cooled / Thermal data					
Cooling air velocity (PCB)		$V_{Air PCB}$	0,3			m/s
Air pressure	standard atmosphere	$p_{Air}$	900		1100	hPa
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 $\times$ depth $\times$ height		216	280	167	mm
Weight with heat sink	approximation			9,1		kg
Weight without heat sink	approximation			2,9		kg

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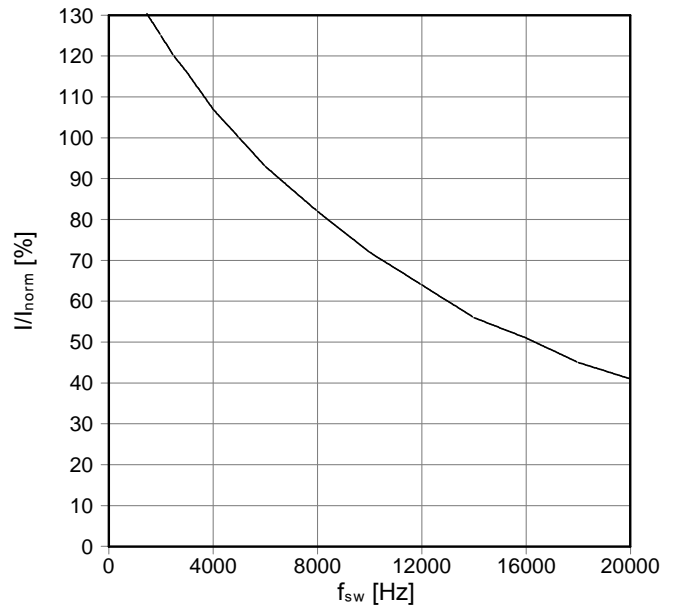


Zieldaten  
target data

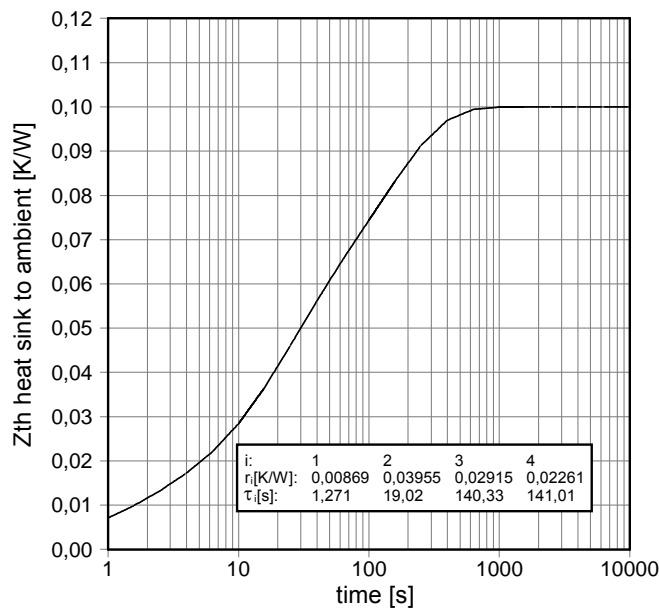
fo - derating curve IGBT (motor)  
cos(phi) = 0,85  
T<sub>cool medium</sub> = 40°C



fsw - derating curve IGBT (motor)  
cos(phi) = 0.85  
T<sub>cool medium</sub> = 40



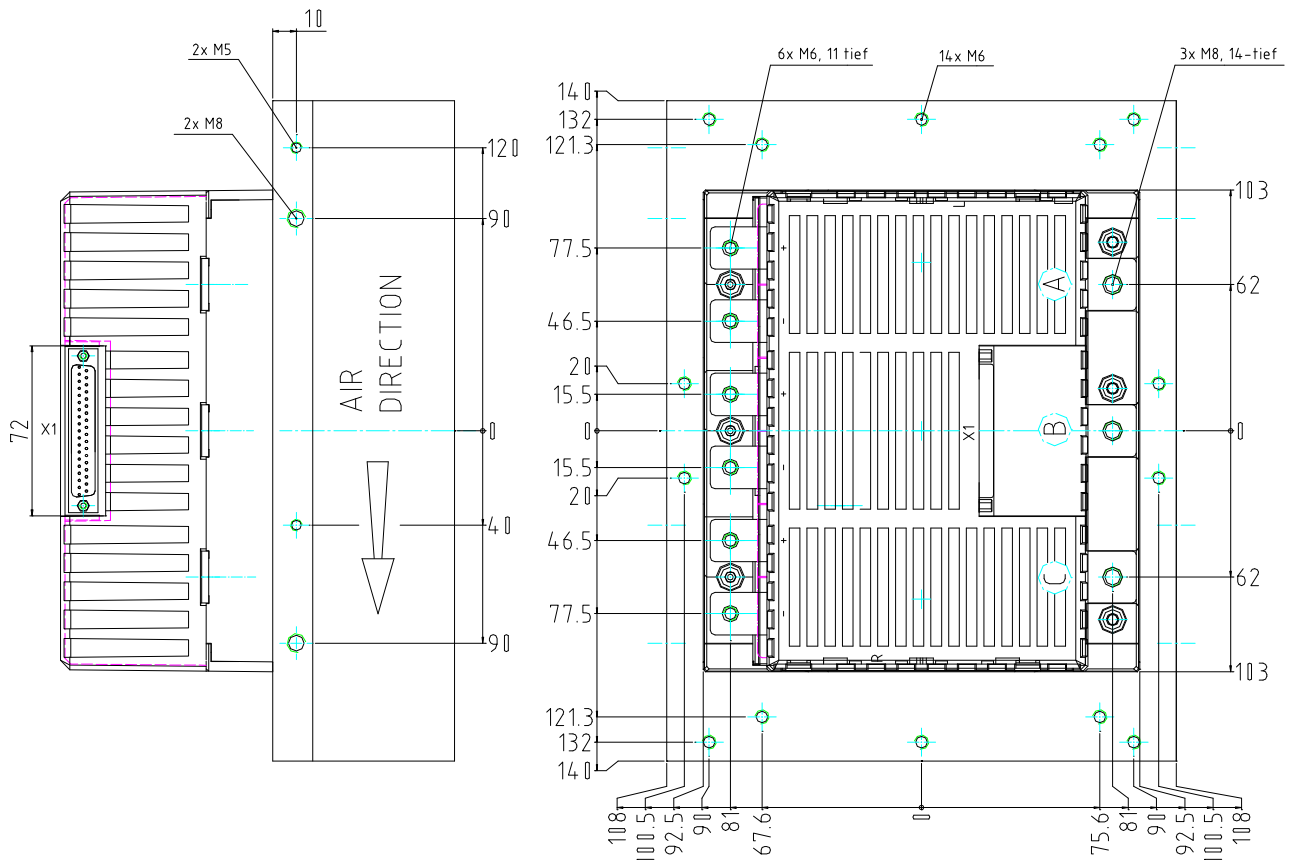
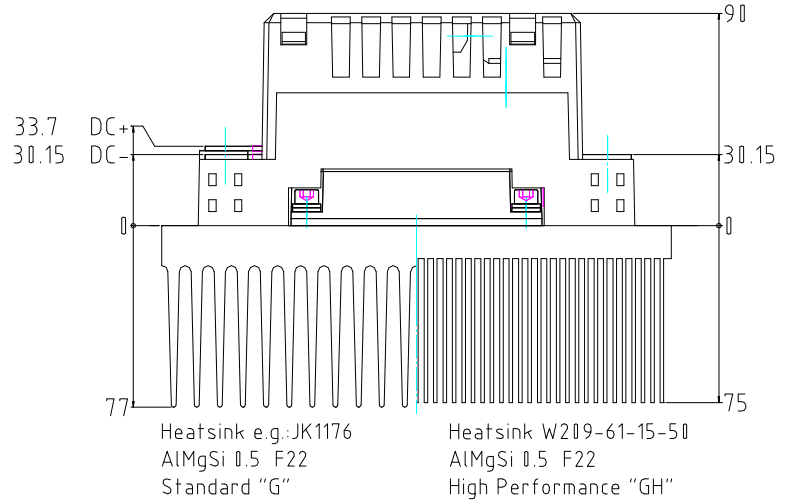
Transient thermal impedance per module  
T<sub>cool medium</sub> = 40°C



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Mechanical drawing

2PS...-3...  
4PS...-3...  
6PS...-3...  
PrimeSTACK C3  
38000030



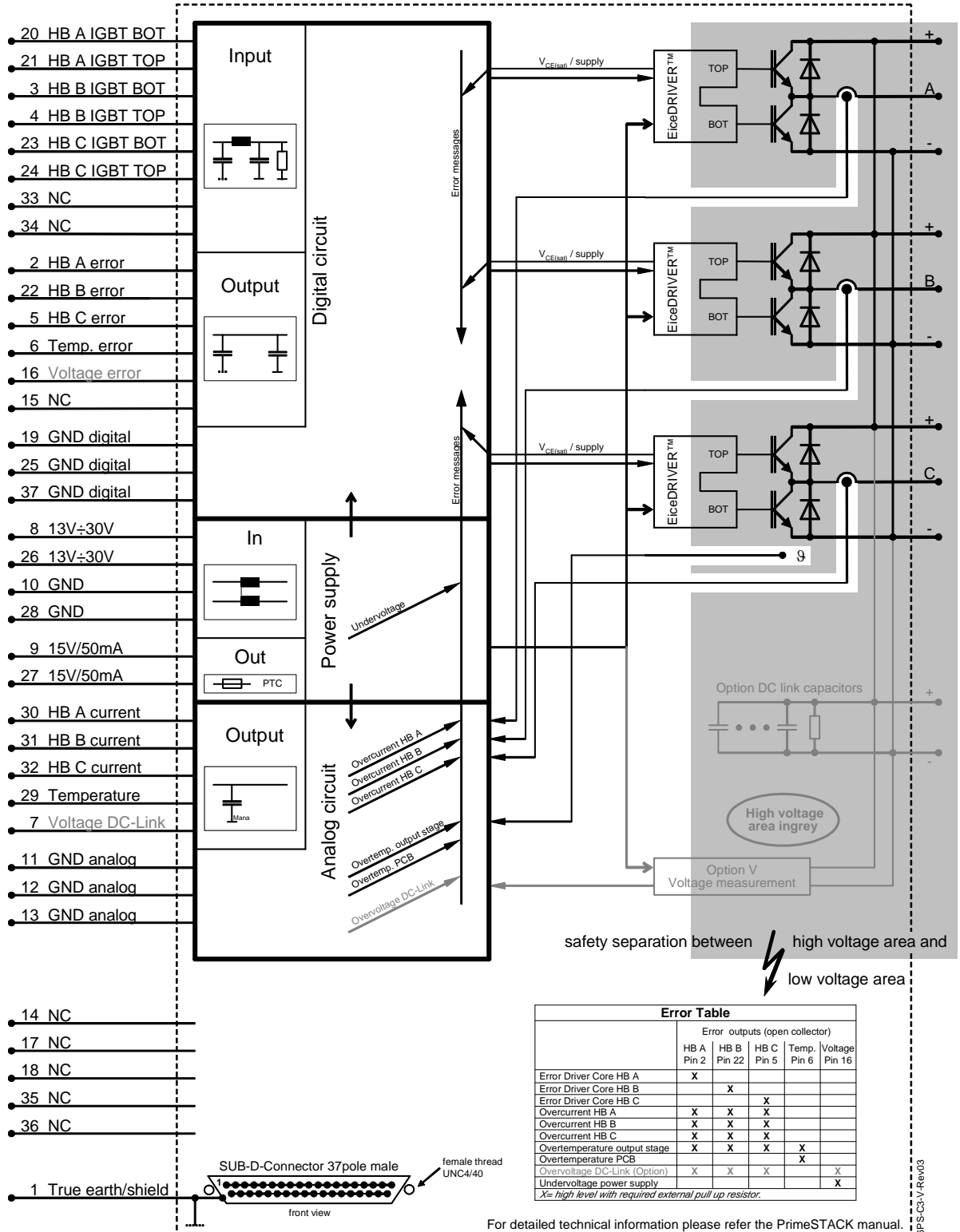
X1:

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

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Zieldaten  
target data

Circuit diagram



For detailed technical information please refer the PrimeSTACK manual.

6PS0150R12KE3-3G Rev03



**Zieldaten  
target data**

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- the conclusion of Quality Agreements;
- to establish joint measures of an ongoing product survey, and that we may make delivery depended on the realization of any such measures.

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**Safety Instructions**

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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