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## 4.2 emDrive150

Table 3: emDrive150 technical specifications

Input DC link voltage range	20 20 20 20 0 0 0	60 60	unit
Input DC link voltage range	20 20 0 0 0 0		
emDrive150 - 200_400/60	20 20 0 0 0 0		V
emDrive150 - 150   300/125   22   250/60   emDrive150 - 200   400/60   emDrive150 - 150   250/60   emDrive150 - 200   400/60   emDrive150 - 150   250/60   emDrive150 - 150   300/125   emDrive150 - 150   300/125   emDrive150 - 150   300/125   emDrive150 - 150   250/60   emDrive150 - 150   250/60   emDrive150 - 150   300/125   emDriv	20 0 0 0 0	60	V
Input DC link current range	0 0 0	125	V
emDrive150 - 200_400/60   emDrive150 - 150_300/125   emDrive150 - 150_250/60   emDrive150 - 200_400/60   emDrive150 - 200_400/60   emDrive150 - 150_250/60   emDrive150 - 15	0 0 0	250	A
emDrive150 - 150_300/125   emDrive150 - 150_250/60   emDrive150 - 200_400/60   emDrive150 - 200_400/60   emDrive150 - 150_250/60   emDrive150 - 150_250/60   emDrive150 - 150_300/125   emDrive150 - 150_250/60   emDrive150 - 150_300/125	0	300	Α
Output phase to phase voltage range  emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125  Output current range  emDrive150 - 150_250/60 emDrive150 - 150_250/60 emDrive150 - 150_300/125  Output continuous current  emDrive150 - 150_300/125  Output maximum one minute peak current  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Output maximum one minute peak power  emDrive150 - 150_300/125  Output maximum one minute peak emDrive150 - 150_250/60 emDrive150 - 150_300/125  Input DC link capacitance  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Number of output phases  Switching frequency Output frequency range EMI Y capacitor, DC + and DC - to heat sink Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3t  Control unit electrical data  Supply voltage range  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  emDrive150 - 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 - 150_200/400/60 emDrive150 - 150_250/60	0	200	Α
emDrive150 - 200_400/60   emDrive150 - 150_300/125   emDrive150 - 150_300/125   emDrive150 - 150_300/125   emDrive150 - 200_400/60   emDrive150 -		40	V <sub>RMS</sub>
emDrive150 - 150_300/125   emDrive150 - 150_250/60   emDrive150 - 200_400/60   emDrive150 - 150_250/60   emDrive150 - 150_300/125   emDrive150 - 150_300/1		40	V <sub>RMS</sub>
emDrive150 - 200_400/60	0	84	V <sub>RMS</sub>
emDrive150 - 200_400/60	0	250	A <sub>RMS</sub>
emDrive150 - 150_300/125   emDrive150 - 150_250/60   emDrive150 - 200_400/60   emDrive150 - 150_250/60   emDrive150 - 150_300/125   em	0	400	A <sub>RMS</sub>
Output continuous current    emDrive150 - 150_250/60     emDrive150 - 200_400/60     emDrive150 - 150_300/125     Output maximum one minute peak     current	0	300	A <sub>RMS</sub>
emDrive150 - 200_400/60		150	A <sub>RMS</sub>
emDrive150 - 150_300/125		200	A <sub>RMS</sub>
Output maximum one minute peak current  Current		150	A <sub>RMS</sub>
Current  emDrive150 - 200_400/60 emDrive150 - 150_300/125  Output continuous power  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Output maximum one minute peak power  emDrive150 - 150_300/125  Output maximum one minute peak power  emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125  Input DC link capacitance  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Number of output phases  Switching frequency  Output frequency range  EMI Y capacitor, DC + and DC - to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3t  Control unit electrical data  Supply voltage range  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  emDrive150 - 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 - 150_250/60 emDrive150 - 150_250/60 emDrive150 - 150_250/60 emDrive150 - 150_300/125		250	A <sub>RMS</sub>
emDrive150 - 150_300/125     Output continuous power		400	A <sub>RMS</sub>
Output continuous power  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Output maximum one minute peak power  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Input DC link capacitance  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Number of output phases  Switching frequency Output frequency range  EMI Y capacitor, DC + and DC – to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3t  Control unit electrical data  Supply voltage range  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  emDrive150 – 150_250/60 emDrive150 – 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 – 200_400/60		300	A <sub>RMS</sub>
emDrive150 – 200_400/60 emDrive150 – 150_300/125  Output maximum one minute peak power  emDrive150 – 150_250/60 emDrive150 – 150_250/60 emDrive150 – 150_300/125  Input DC link capacitance  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Number of output phases  Switching frequency Output frequency range EMI Y capacitor, DC + and DC – to heat sink Discharge resistor: DC + to DC - Pre-charge resistor requirements: charge time to 3t  Control unit electrical data  Supply voltage range  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  emDrive150 – 150_250/60 emDrive150 – 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 – 200_400/60 emDrive150 – 200_400/60 emDrive150 – 150_250/60		10	kVA
emDrive150 – 150_300/125Output maximum one minute peak poweremDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125Input DC link capacitanceemDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125Number of output phasesemDrive150 – 150_300/125Switching frequencyOutput frequency rangeEMI Y capacitor, DC + and DC – to heat sinkDischarge resistor: DC + to DC –Pre-charge resistor requirements: charge time to 3τOControl unit electrical dataSupply voltage rangeemDrive150 – 150_250/60 emDrive150 – 150_300/125Supply current range at typ. supply voltage (idle state, PWM disabled)emDrive150 – 150_250/60 emDrive150 – 150_300/125Supply current range at typ. supply voltage (operating, PWM enabled)emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 200_400/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125		13	kVA
Output maximum one minute peak emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Input DC link capacitance emDrive150 – 150_250/60 emDrive150 – 150_300/125  Number of output phases  Switching frequency  Output frequency range  EMI Y capacitor, DC + and DC – to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60 emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60 emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125		21	kVA
power  emDrive150 – 200_400/60 emDrive150 – 150_300/125  Input DC link capacitance  emDrive150 – 150_250/60 emDrive150 – 150_300/125  Number of output phases  Switching frequency  Output frequency range  EMI Y capacitor, DC + and DC – to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 – 150_250/60 emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 200_400/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  emDrive150 – 150_250/60 emDrive150 – 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 – 200_400/60 emDrive150 – 150_300/125		17	kVA
emDrive150 – 150_300/125  Input DC link capacitance  emDrive150 – 150_250/60  emDrive150 – 200_400/60  emDrive150 – 150_300/125  Number of output phases  Switching frequency  Output frequency range  EMI Y capacitor, DC + and DC – to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 – 150_250/60  emDrive150 – 200_400/60  emDrive150 – 150_300/125  Supply current range at typ. supply  voltage (idle state, PWM disabled)  emDrive150 – 150_300/125  Supply current range at typ. supply  voltage (operating, PWM enabled)  emDrive150 – 200_400/60  emDrive150 – 150_250/60  emDrive150 – 150_250/60  emDrive150 – 150_250/60  emDrive150 – 150_250/60  emDrive150 – 200_400/60  emDrive150 – 200_400/60  emDrive150 – 150_250/60  emDrive150 – 200_400/60  emDrive150 – 150_300/125		27	kVA
Input DC link capacitance  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Number of output phases  Switching frequency  Output frequency range  EMI Y capacitor, DC + and DC – to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60 emDrive150 – 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 – 200_400/60 emDrive150 – 200_400/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125		43	kVA
emDrive150 – 200_400/60 emDrive150 – 150_300/125  Number of output phases  Switching frequency  Output frequency range  EMI Y capacitor, DC + and DC – to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60 emDrive150 – 150_300/125	6300		μF
emDrive150 – 150_300/125  Number of output phases  Switching frequency  Output frequency range  EMI Y capacitor, DC + and DC – to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 – 150_250/60  emDrive150 – 200_400/60  emDrive150 – 150_300/125  Supply current range at typ. supply  voltage (idle state, PWM disabled)  emDrive150 – 150_300/125  Supply current range at typ. supply  voltage (operating, PWM enabled)  emDrive150 – 150_250/60  emDrive150 – 150_300/125	13200		μF
Number of output phases  Switching frequency  Output frequency range  EMI Y capacitor, DC + and DC - to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 - 150_250/60  emDrive150 - 200_400/60  emDrive150 - 150_300/125  Supply current range at typ. supply  voltage (idle state, PWM disabled)  emDrive150 - 150_300/125  Supply current range at typ. supply  emDrive150 - 150_300/125  Supply current range at typ. supply  voltage (operating, PWM enabled)  emDrive150 - 150_250/60  emDrive150 - 150_250/60  emDrive150 - 150_250/60  emDrive150 - 150_300/125	2400		μF
Switching frequency Output frequency range  EMI Y capacitor, DC + and DC - to heat sink Discharge resistor: DC + to DC - Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data Supply voltage range  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Supply current range at typ. supply emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  emDrive150 - 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125	3		μι
Output frequency range  EMI Y capacitor, DC + and DC - to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125  Supply current range at typ. supply emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  emDrive150 - 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125	16		kHz
EMI Y capacitor, DC + and DC – to heat sink  Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 – 150_250/60  emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60  emDrive150 – 150_250/60  emDrive150 – 200_400/60  emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60  emDrive150 – 150_250/60  emDrive150 – 150_250/60  emDrive150 – 200_400/60  emDrive150 – 200_400/60  emDrive150 – 200_400/60  emDrive150 – 150_300/125	0	1,2	kHz
Discharge resistor: DC + to DC -  Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Supply current range at typ. supply emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125  Supply current range at typ. supply emDrive150 - 150_300/125  Supply current range at typ. supply emDrive150 - 150_250/60 emDrive150 - 150_250/60 emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125	2	1,2	
Pre-charge resistor requirements: charge time to 3τ  Control unit electrical data  Supply voltage range  emDrive150 - 150_250/60 emDrive150 - 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125  Supply current range at typ. supply emDrive150 - 150_300/125  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125			μF
Control unit electrical data  Supply voltage range	none		
Supply voltage range  emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 - 150_250/60 emDrive150 - 150_250/60 emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125	0,5	1	
emDrive150 - 200_400/60 emDrive150 - 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  Supply current range at typ. supply voltage (operating, PWM enabled)  emDrive150 - 200_400/60 emDrive150 - 150_250/60 emDrive150 - 200_400/60 emDrive150 - 200_400/60 emDrive150 - 150_300/125			
emDrive150 – 200_400/60 emDrive150 – 150_300/125  Supply current range at typ. supply voltage (idle state, PWM disabled)  Supply current range at typ. supply emDrive150 – 200_400/60 emDrive150 – 150_300/125  EmDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125	?	60	V
Supply current range at typ. supply voltage (idle state, PWM disabled)         emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125           Supply current range at typ. supply voltage (operating, PWM enabled)         emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125	?	60	V
voltage (idle state, PWM disabled)       emDrive150 – 200_400/60 emDrive150 – 150_300/125         Supply current range at typ. supply voltage (operating, PWM enabled)       emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125	?	125	V
emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125	?		А
emDrive150 – 150_300/125  Supply current range at typ. supply emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125	?		Α
Supply current range at typ. supply emDrive150 – 150_250/60 emDrive150 – 200_400/60 emDrive150 – 150_300/125	?		Α
voltage (operating, PWM enabled) emDrive150 – 200_400/60 emDrive150 – 150_300/125	?		Α
emDrive150 – 150_300/125	?		Α
Protection functions	?		Α
DC link voltage measurement range emDrive150 – 150_250/60		65	V
emDrive150 – 200_400/60		65	V
emDrive150 – 150_300/125		130	V
DC link over voltage protection emDrive150 – 150_250/60		60	V
emDrive150 – 200_400/60		60	V
emDrive150 – 150_300/125		125	V
			V
DC link voltage measurement resolution	0		V



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emDrive150		min.	typ.	max.	unit
Protection functions - continue					
Over current protection:	emDrive150 – 150_250/60			250	$A_{RMS}$
primary protection (adjustable)	emDrive150 – 200_400/60			400	$A_{RMS}$
. , , , , ,	emDrive150 – 150_300/125			300	$A_{RMS}$
Over current protection:	emDrive150 – 150_250/60			300	$A_{RMS}$
secondary protection (adjustable)	emDrive150 – 200_400/60			500	$A_{RMS}$
, , , , , ,	emDrive150 – 150_300/125			400	$A_{RMS}$
Output current measurement range	emDrive150 – 150_250/60	0		650	$A_{RMS}$
· ·	emDrive150 - 200_400/60	0		1000	$A_{RMS}$
	emDrive150 – 150_300/125	0		650	$A_{RMS}$
Output current measurement resolution	on		0,25		$A_{RMS}$
DC link capacitors temperature protection - power derating point			75		°C
MOS-FET temperature protection - po	wer derating point		110		°C
Motor over temperature protection (c	only if sensor connected)			140	°C
Motor temperature sensor input type	· · · · · · · · · · · · · · · · · · ·		0,6		kΩ
, , , , , , , , , , , , , , , , , , ,	KTY 84-210		2		kΩ
	NTC		10		kΩ
Insulation					
DC + to heat sink, DC – to heat sink	emDrive150 – 150 250/60		100		V
	emDrive150 – 200 400/60		100		V
	emDrive150 – 150_300/125		250		V
DC + to logic level, DC – to logic level	emDrive150 – 150_250/60		100		V
	emDrive150 – 200_400/60		100		V
	emDrive150 – 150_300/125		250		V
Logic level to heat sink	emDrive150 – 150_250/60		100		V
	emDrive150 – 200_400/60		100		V
	emDrive150 – 150_300/125		250		V
Isolation resistance: DC + to heat sink,	DC – to heat sink	100			MΩ
Protective class			I		
Mechanical data					
Weight			1,6		kg
Height			53		mm
Width			200		mm
Length			150		mm
Power contacts tightening torque (M6	5)	4,5	5,0	5,5	Nm
Chassis mounting screws tightening to	•	8		12	Nm
Cooling data	nque (me x le el lengel)				
Power dissipation	emDrive150 – 150 250/60			300	W
Total dissipation	emDrive150 - 200_400/60			650	W
	emDrive150 – 150_300/125			770	W
	EIIIDIIVE130 130 300/123				
Environmental data	embrive130 130_300/123				
<b>Environmental data</b> Operating ambient temperature with		0		65	°C
Operating ambient temperature with		0 -40		65 85	°C
			IP54		





## 4.3 emDrive500

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Table 4: emDrive500 technical specifications

Table 4: emDrive500 technical specifications				
emDrive500	min.	typ.	max.	unit
Electrical data				
Input DC link voltage range	30		125	V
Input DC link current range	0		800	А
Output phase to phase voltage range	0		84	$V_{RMS}$
Output current range	0		800	$A_{RMS}$
Output continuous current			500	$A_{RMS}$
Output maximum one minute peak current			800	$A_{RMS}$
Output continuous power			62	kVA
Output maximum one minute peak power			110	kVA
Input DC link capacitance		14500		μF
Number of output phases		3		
Switching frequency		16		kHz
Output frequency range	0		1,2	kHz
EMI Y capacitor, DC + and DC – to heat sink		3		μF
Discharge resistor: DC + to DC -		none		·
Pre-charge resistor requirements: charge time to 3τ	0,5		1	
Control unit electrical data				
Supply voltage range	9		30	V
Supply current range at typ. supply voltage		?		А
(idle state, PWM disabled)				
Supply current range at typ. supply voltage		?		А
(operating, PWM enabled)				
Protection functions				
DC link voltage measurement range			135	V
DC link over voltage protection			125	V
DC link under voltage protection	0			V
DC link voltage measurement resolution		0,1		V
Over current protection: primary protection (adjustable)			800	A <sub>RMS</sub>
Over current protection: secondary protection (adjustable)			900	A <sub>RMS</sub>
Output current measurement range	0		1000	A <sub>RMS</sub>
Output current measurement resolution		0,25		A <sub>RMS</sub>
DC link capacitors temperature protection - power derating point				°C
MOS-FET temperature protection - power derating point		100		°C
Motor over temperature protection (only if sensor connected)			140	°C
Motor temperature sensor input type KTY 84-130		0,6	2.0	kΩ
KTY 84-210		2		kΩ
NTC		10		kΩ
Insulation				
DC + to heat sink, DC – to heat sink		250		V
DC + to logic level, DC – to logic level		250		V
Logic level to heat sink		250		V
Isolation resistance: DC + to heat sink, DC – to heat sink	100			MΩ
Protective class		l		
Mechanical data				
Weight		4,9		kg
Height		65		mm
Width		280		mm
Length		205		mm
Power contacts tightening torque (M8)	18	203	22	Nm
Chassis mounting screws tightening torque (M6 x 40 or longer)	8	20	12	Nm
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emDrive500				
Cooling data				
Required coolant flow		5		l/min
Coolant temperature - power deration	ng point	60		°C
Pressure drop @ 5 l/min @ 25 °C		0,3		bar
Operating pressure			2	bar
Coolant quantity of integrated coolir	ng	60		cm <sup>3</sup>
Power dissipation to coolant			TBD	kW
Coolant mixture	distilled water	50		%
	glycol		50	%
Environmental data				
Operating ambient temperature, de	rating for T <sub>Coolant</sub> > 60 °C	-20	65	°C
Storage ambient temperature		-40	85	°C
Enclosure protection level		IP54	1	
Operating altitude			2000	m



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## 4.4 emDriveH300

Table 5: emDriveH300 technical specifications

Table 5: emDriveH300 technical specifications				
emDriveH300 and emDriveH300A	min.	typ.	max.	unit
Electrical data				
Input DC link voltage range	100		450	V
Input DC link current range	0		400	А
Output phase to phase voltage range	0		302	$V_{RMS}$
Output current range	0		450	A <sub>RMS</sub>
Output continuous current			300	A <sub>RMS</sub>
Output maximum one minute peak current			450	A <sub>RMS</sub>
Output continuous power			120	kVA
Output maximum one minute peak power			180	kVA
Input DC link capacitance		1000		μF
Number of output phases		3		<u> </u>
Switching frequency		16		kHz
Output frequency range	0		1,2	kHz
EMI Y capacitor, DC + and DC – to heat sink		220		nF
Discharge resistor: DC + to DC -	220		270	kΩ
Self-discharge time from 450 V to - 60 V	220		150	S
- 10 V			300	s
- 10 V			300	min
	٥٢		1	
Pre-charge resistor requirements: charge time to 3τ	0,5		1	S
Control unit electrical data	10		20	V
Control power supply range	10		30	
Supply current range at typ. supply voltage	0,17		0,5	А
(idle state, PWM disabled)	0.75		2.4	Δ.
Supply current range at typ. supply voltage	0,75		2,4	А
(operating, PWM enabled)				
Protection functions			520	V
DC link voltage measurement range			450	V
DC link over voltage protection	0		450	
DC link under voltage protection	0	0.125		V
DC link voltage measurement resolution		0,125	450	V
Over current protection: primary protection (adjustable)			450	A <sub>RMS</sub>
Over current protection: secondary protection (adjustable)			550	A <sub>RMS</sub>
Output current measurement range	0		1000	A <sub>RMS</sub>
Output current measurement resolution		0,25		A <sub>RMS</sub>
DC link capacitors temperature protection - power derating point		75		°C
IGBT module die temperature protection - power derating point		110		°C
Motor over temperature protection (only if sensor connected)			140	°C
Motor temperature sensor input type KTY 84-130		0,6		kΩ
KTY 84-210		2		kΩ
NTC		10		kΩ
Insulation		2.5		13.4
DC + to heat sink, DC – to heat sink		2,5		kV
DC + to logic level, DC – to logic level		2,5		kV
Logic level to heat sink		0,5		kV
Isolation resistance: DC + to heat sink, DC – to heat sink	500			MΩ
Protective class		I		



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emDriveH300 and emDriveH300	0A	min.	typ.	max.	unit
Mechanical data					
Weight			7,5		kg
Height			127		mm
Width			244		mm
Length			228		mm
Power contacts tightening torque (	M6 nut)	4,5	5	5,5	Nm
Chassis mounting screws tightening	g torque (M8 x 40 or longer)	15		25	Nm
Water fitting tightening torque		65	70	75	Nm
Self-taping cover screws tightening	torque (2,5 x 10 mm)			0,8	Nm
Cable gland tightening torque (M25	5)			12	Nm
Cooling data					
Required coolant flow			10		l/min
Coolant temperature - power derat	ing point		60		°C
Pressure drop @ 10 l/min @ 25 °C			0,1		bar
Operating pressure				1	bar
Coolant quantity of integrated cool	ing		85		cm <sup>3</sup>
Power dissipation to coolant		0,5		4,5	kW
Coolant mixture	distilled water	50			%
	glycol			50	%
Environmental data					
Operating ambient temperature, de	erating for T <sub>Coolant</sub> > 60 °C	-20		65	°C
Storage ambient temperature		-40		85	°C
Enclosure protection level			IP54		
Operating altitude emDriveH300				2000	m
Operating altitude emDriveH300A	only			4000	m
Maximal vertical velocity emDriveH	300A only	-10		10	m/s





## 4.5 emDriveUH170

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Table 6: emDriveUH170 technical specifications

Table 6: emDriveUH170 technical specifications				
emDriveUH170 and emDriveUH170A	min.	typ.	max.	unit
Electrical data				
Input DC link voltage range	100		850	V
Input DC link current range	0		200	А
Output phase to phase voltage range	0		570	$V_{RMS}$
Output current range	0		250	$A_{RMS}$
Output continuous current			170	$A_{RMS}$
Output maximum one minute peak current			250	A <sub>RMS</sub>
Output continuous power			170	kVA
Output maximum one minute peak power			250	kVA
Input DC link capacitance		400		μF
Number of output phases		3		·
Switching frequency		16		kHz
Output frequency range	0		1,2	kHz
EMI Y capacitor, DC + and DC – to heat sink		47		nF
Discharge resistor: DC + to DC -	1		2,2	MΩ
Self-discharge time from 850 V to - 60 V			190	S
- 10 V			320	S
- 0 V			15	min
Pre-charge resistor requirements: charge time to 3τ	1		2	S
Control unit electrical data	_			
Control power supply range	10	12	30	V
Supply current range at typ. supply voltage		?		A
(idle state, PWM disabled)		·		
Supply current range at typ. supply voltage		?		Α
(operating, PWM enabled)		·		
Protection functions				
DC link voltage measurement range			1040	V
DC link over voltage protection			850	V
DC link under voltage protection	0			V
DC link voltage measurement resolution		0,250		V
Over current protection: primary protection (adjustable)		0,230	250	A <sub>RMS</sub>
Over current protection: secondary protection (adjustable)			275	A <sub>RMS</sub>
Output current measurement range	0		500	A <sub>RMS</sub>
Output current measurement resolution	U	0,12	300	A <sub>RMS</sub>
DC link capacitors temperature protection - power derating point		75		°C
IGBT module die temperature protection - power derating point		110		°C
		110	140	°C
Motor over temperature protection (only if sensor connected)  Motor temperature sensor input type  KTY 84-130		0.0	140	
motor temperature series impact, pe		0,6		kΩ
KTY 84-210 NTC		2 10		k $\Omega$ k $\Omega$
Insulation		10		NAZ
DC + to heat sink, DC – to heat sink		2,5		kV
DC + to logic level, DC – to logic level		2,5		kV
Logic level to heat sink		0,5		kV
Isolation resistance: DC + to heat sink, DC – to heat sink	500	0,5		$M\Omega$
Protective class	300			IVIZZ
FIOLECTIVE CIGSS				



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emDriveUH170 and emDriveU	H170A	min.	typ.	max.	unit
Mechanical data					
Weight			7,5		kg
Height			127		mm
Width			244		mm
Length			228		mm
Power contacts tightening torque	(M6 nut)	4,5	5	5,5	Nm
Chassis mounting screws tightening	ng torque (M8 x 40 or longer)	15		25	Nm
Water fitting tightening torque		65	70	75	Nm
Self-taping cover screws tightenin	g torque (2,5 x 10 mm)			0,8	Nm
Cable gland tightening torque (M2	25)			12	Nm
Cooling data					
Required coolant flow			10		l/min
Coolant temperature - power der	ating point		60		°C
Pressure drop @ 10 l/min @ 25 °C			0,1		bar
Operating pressure				1	bar
Coolant quantity of integrated coo	oling		85		cm <sup>3</sup>
Power dissipation to coolant		?		?	kW
Coolant mixture	distilled water	50			%
	glycol			50	%
Environmental data					
Operating ambient temperature,	derating for T <sub>Coolant</sub> > 60 °C	-20		65	°C
Storage ambient temperature		-40		85	°C
Enclosure protection level			IP54		
Operating altitude emDriveUH170	)			2000	m
Operating altitude emDriveUH170	DA only			4000	m
Maximal vertical velocity emDrive	UH170A only	-10		10	m/s