

eMobility Traction Inverters Portfolio | Overview and comparison

Voltage Range: 48V <--> 96V

Part Nr	IBMC48V140A1	IBMC48V140A2	MC48V280A1	IBMC48V280A1	IBMC48V600A1	DDMO48V500A1	MC96V600A1
Nr. of Integr. Inverters	1	1	1	1	1	2	1
Nominal Voltage	48V	48V	48V	48V	48V	48V	96V
Voltage Range	36V - 54V	36V - 54V	36V - 54V	36V - 54V	36V - 54V	30V - 80V	72V - 118V
Continuous Current rms	50A	115A	115A	115A	200A	230A	200A
1. Peak Current rms (Sec)	140A (10s)	140A (10s)	280A (10s)	280A (10s)	600A (10s)	500A (10s)	600A (10s)
Power per Inverter cont/pk	6kVA / 7kVA	6kVA / 7kVA	6kVA / 15kVA	6kVA / 15kVA	11kVA / 33kVA	12kVA / 26kVA	24kVA / 67kVA
Isolation	No	No	No	No	No	Yes	CAN
Motor Position Sensors	Hall, Encoder	Hall, Encoder	Hall, Encoder, Sin/Cos (opt.)	Hall, Encoder, Sin/Cos (opt.)	Hall, Encoder, Sin/Cos	Hall, Sin/Cos, SSI, RS485	Hall, Encoder, Sin/Cos (opt.)
Motor Control Algorithm	FOC	FOC	FOC	FOC	FOC, DFVC	FOC	FOC, DFVC
Recuperation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Field Weakening	Yes	Yes	Yes	Yes	Yes	Yes	yes
Cooling	Air	Air	Air	Air	Air	Air	Air
Logic Supply by HV Battery	Yes	Yes	Yes	Yes	Yes	No	Yes
Bodycontrol Integrated	Yes	Yes	No	Yes	Yes	No	No
VMU Integrated	Yes	Yes	No	Yes	Yes	Yes	Yes
On Board Diagnostic	No	No	OBD-2	OBD-2	OBD-2	OBD-2 in dev.	OBD-2
Functional Safety Readiness	No	No	No	No	Yes	Yes	No
Nr. of Drive modes	5	4	-	4	3	2	tbd
Protection (A, °C, Derating)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Phase Connectors	M6 glands	M6 glands	M6 glands	M6 glands	M8 glands	M6 glands	M8 glands
Battery Connectors	M6 glands	M6 glands	M6 glands	M6 glands	M8 glands	M6 glands	M8 glands
Signal Connector	30&36-pin Molex	48-pin CMC	48-pin CMC	48-pin CMC	64-pin CMC	64-pin CMC	10&14-pin FEP
Microcontroller Platform	S32K142	S32K142	S32K142	S32K142	S32K342	TC387	S32K342
Dimension (L/WL/H)	403x62x27mm	152x142x44mm	152x142x44mm	152x142x44mm	250x115x44mm	277x207x67mm	140x150x81mm
Weight	650g	780g	780g	780g	1.100g	4kg - 3.5l	2kg
IP Class	65	67	67	67	67	67	66
Status	Production	Production	Production	Production ready	Prototype	Demonstrator	Production ready

Notes:

- a) Technical parameters for products in development are preliminary and may change, b) Demonstrators are not suitable for volume production, c) FOC: "Field Oriented Control", d) DFVC: "Direct Flux Vector Control"

Voltage Range: 400V <--> 800V

Part Nr	MC400V180A1	MC400V620A1	DDM400V640A1	MC800V488A1	DDM800V488A1
Nr. of Integr. Inverters	1	1	2	1	2
Nominal Voltage	400V	400V	400V	800V	800V
Voltage Range	300V - 450V	300V - 450V	300V - 450V	600V - 900V	600V - 900V
Continuous Current rms	90A	300A	2x300A	240A	2x240A
1. Peak Current rms (Sec)	180A (10s)	620A (10s)	2x620A (10s)	488A (10s)	2x488A (10s)
Power (Cont./Peak)	35kVA / 70kVA	130kVA / 260kVA	130kVA / 260kVA	220kVA / 440kVA	2x 220kVA / 440kVA
Isolation	Yes	Yes	Yes	Yes	Yes
Motor Position Sensors	Hall, Encoder, SSI, Sin/Cos	Hall, Encoder, SSI, Sin/Cos	Hall, Encoder, SSI, Sin/Cos	Hall, Encoder, SSI, Sin/Cos	Hall, Encoder, SSI, Sin/Cos
Motor Control Algorithm	FOC, DFVC	FOC, DFVC	FOC, DFVC	FOC, DFVC	FOC, DFVC
Recuperation	Yes	Yes	Yes	Yes	Yes
Field Weakening	Yes	Yes	Yes	Yes	Yes
Cooling	Liquid	Liquid	Liquid	Liquid	Liquid
Logic Supply by HV Battery	No	No	No	No	No
Bodycontrol Integrated	No	No	No	No	No
VMU Integrated	Yes	Yes	Yes	Yes	Yes
On Board Diagnostic	OBD-2	OBD-2	OBD-2	OBD-2	OBD-2
ISO26262 ASIL-D Readiness	Optional	Yes	Yes	Yes	Yes
Nr. of Drive modes	3	4	4	4	4
Protection (A, °C, Derating)	Yes	Yes	Yes	Yes	Yes
Phase Connectors	M6 glands	M6 glands	M6 glands	M6 glands	M6 glands
Battery Connectors	M6 glands	M6 glands	M6 glands	M6 glands	M6 glands
Signal Connector	48-pin CMC	48-pin CMC	48-pin CMC	48-pin CMC	48-pin CMC
Microcontroller Platform	S32K342	S32K342	S32K342 / TC387	S32K342	TC387
EMC Filter Integrated	No	Yes	Yes	Yes	Yes
Dimension (LxWxH)	~130x100x80mm	~265x240x65mm	455x260x63mm	~265x240x65mm	~455x260x65mm
Weight	tbd	tbd	11,00kg	tbd	tbd
IP Class	tbd	69k	69k	69k	69k
Status	In Development	In Development	Prototype	In Development	In Development

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