

eMobility Traction Inverters Portfolio | Overview and comparison

Voltage Range: 48V <--> 96V

Feature/Part No.	IBMC48V140A1	(IB)MC48V280A1	(IB)MC48V280A3	(IB)MC48V600A1	DDMO48V500A1	MC96V600A1
No. of Integr. Inverters	1	1	1	1	2	1
Nominal Voltage	48V	48V	48V	48V	48V	96V
Voltage Range	36V - 54V	36V - 54V	36V - 54V	36V - 54V	30V - 80V	72V - 118V
Continuous Current rms	50Arms	115Arms	115Arms	200Arms	(2x) 230Arms	200Arms
Peak Current rms (Time)	140Arms (10s)	280Arms (10s)	280Arms (10s)	600Arms (10s)	(2x) 500Arms (10s)	600Arms (10s)
Power (Continuous/Peak)	6kVA / 7kVA	6kVA / 15kVA	7kVA / 15kVA	11kVA / 33kVA	(2x) 12kVA / 26kVA	24kVA / 67kVA
Isolation	No	No	No	No	Yes	CAN
Motor Position Sensors	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, DFVC	FOC, DFVC	FOC	FOC, DFVC
Regenerative Braking	Yes	Yes	Yes	Yes	Yes	Yes
Field Weakening	Yes	Yes	Yes	Yes	Yes	yes
Cooling	Air	Air	Air	Air	Air	Air
Logic Supply by HV Battery	Yes	Yes	Yes	Yes	No	Yes
Body-Control Integrated	Yes	IBMC version only	IBMC version only	IBMC version only	No	No
VMU Integrated	Yes	IBMC version only	IBMC version only	IBMC version only	Yes	Yes
On Board Diagnostic	No	OBD-2	OBD-2	OBD-2	OBD-2	OBD-2
Functional Safety Readiness	No	No	No	Yes	Yes	No
No. of Drive modes	5	4 (IBMC version only)	4 (IBMC version only)	3 (IBMC version only)	2	-
Protection (A, °C, Derating)	Yes	Yes	Yes	Yes	Yes	Yes
Phase Connectors	M6 glands	M6 glands	M6 glands	M8 glands	M6 glands	M8 glands
Battery Connectors	M6 glands	M6 glands	M6 glands	M8 glands	M6 glands	M8 glands
Signal Connector	30&36-pin Molex	48-pin CMC	48-pin CMC	64-pin CMC	64-pin CMC	10&14-pin FEP
Dimension (L/WL/H)	403x62x27mm	152x142x44mm	152x142x44mm	250x115x44mm	277x207x67mm	140x150x81mm
Weight	650g	780g	780g	1.100g	4,0kg	2,0kg
IP Class	65	67	67	67	67	66
Status	Production	Production	Production	Production ready	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"

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Voltage Range: 400V <--> 800V

Feature/Part No.	MC400V180A1	MC400V620A1	DDM400V640A1	MC800V488A1	DDM800V488A1
No. 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	90Arms	300Arms	(2x) 300Arms	240Arms	(2x) 240Arms
Peak Current rms (Time)	180Arms (10s)	620Arms (10s)	(2x) 620Arms (10s)	488Arms (10s)	(2x) 488Arms (10s)
Power (Continuous/Peak)	35kVA / 70kVA	130kVA / 260kVA	(2x) 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
Regenerative Braking	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
Body-Control 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
Functional Safety Readiness	Optional	Yes	Yes	Yes	Yes
No. 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
EMC Filter Integrated	No	Yes	Yes	Yes	Yes
Dimension (LxWxH)	130x100x80mm	290x260x63mm	455x260x63mm	290x260x63mm	455x260x63mm
Weight	600g	6,2kg	11,0kg	6,2kg	11,0kg
IP Class	-	69	69	69	69
Status	Production Ready	Prototype	Prototype	Prototype	Prototype

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"