**Data Sheet**

AC Motor Controller
dACi® Series F Inverter

The dACi® Series F inverter is designed to be used on single drive or dual drive traction systems and for pump actuation. Together, with Danfoss induction motors type TSA, the motors and inverters are matched and optimized to achieve best performances.

The Danfoss inverter, dACi® Series F, leaves amble space for other components on your application. Series F is among the smallest inverters available on the market. Still, it is packed with the latest in inverter technology. For example, it features CAN-based communication for optimized machine control and includes a new driver board that manages all external devices – including horns, valves, and electro-mechanical brakes – thereby securing easy and cost-effective wiring. It is also designed with AmpSeal connector, and Insulated Metal Substrate (IMS) technology.
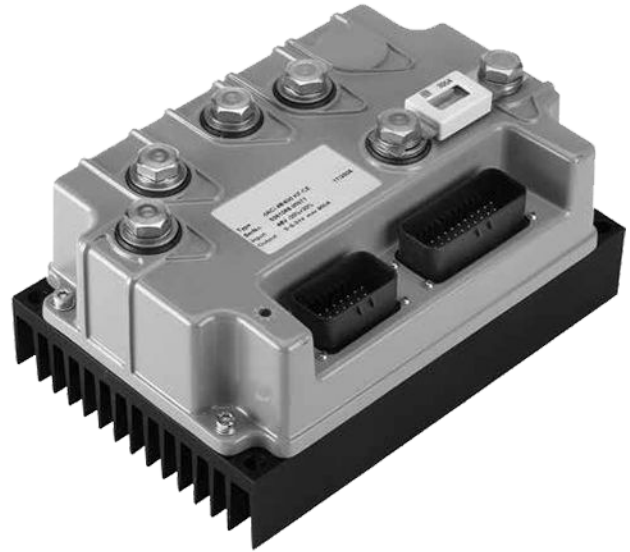
Features

- CAN-based communication for optimized machine control
- AmpSeal connector for enhanced machine reliability
- IMS technology for improved power control
- Setup via CAN bus or Windows based via laptop

Comprehensive technical literature online at *powersolutions.danfoss.com*

Technical data

Type: dACi		24/360	24/480	36/300	36/400	48/300	48/400	80/260
Size		F6	F8	F6	F8	F6	F8	F8
Nominal battery voltage [V]		24		36		48		80
Input voltage range [V]		(12 for t<50 ms) 16 to 36		18 to 50		24 to 62		40 to 105
Nominal current [A][1]		180	240	150	200	150	200	130
Maximum current [A][2]		360	480	300	400	300	400	260
Peak current [A][3]		400	520	330	440	330	440	300
Output voltage [V][4]		3 × 0 to 16		3 × 0 to 24		3 × 0 to 32		3 × 0 to 53
Dimensions mm [in]	W	150 [5.91]						
	H	225 [8.86]						
	D	120 [4.72]						
Power connectors		M10						

[1] @ 8 kHz switching frequency

[2] S2 - 2 min.

[3] For 10 s

[4] @ input voltage = nominal battery voltage

Interface, standard version

Type: dACi		24/xxx	36/48/xxx	80/xxx
7 Digital Inputs (X1: 1, 2, 3, 4, 5, 6, 28)		high active		
1 Analog Input (X1: 29) [V]		0 to 10		
Incremental encoder 1 (X1: 11, 22, 32, 33	Level [V]	0/15 V, A, B (e.g. sensor bearing)		
	Supply	15 V, max 50mA		
Motor temperature sensor (X1: 10, 21)	Type	PTC		
Serial interface	RS 485 (X1: 7, 12, 23, 30)	-		
	CAN (X1: 8, 9, 19, 20, 34, 35)	V2 0B		

Digital ouputs	Max. current [V]; (current range)			Dither signal
	24/xxx	36/48/xxx	80/xxx	
Main contactor driver (X1: 26) low-side-switch with inverse diode	3.0[1]	1.5[1]	1.5[1]	-
Magnetic brake driver output (X1: 25) low-side-switch with inverse diode	3.0[1]	1.5[1]	1.5[1]	-
Programmable on/off outputs (X1: 15,16,27) low-side-switch with inverse diode	3.0[1]	1.5[1]	1.5[1]	-
Output for proportional valves (X1: 14) low-side switches with inverse diodes current controlled, superposed with dither-signal	(0 to 2.0)[1]	(0 to 2.0)[1]	(0 to 2.0)[1]	62.5 Hz; 0 to 300 mA

[1] Without overload and short circuit protection and open circuit detection.

Optional Interface extension

Type: dACi	24/xxx	36/48/xxx	80/xxx
4 Digital Inputs (X2: 7, 8, 14, 15)	high active		
1 Analog Input (X2: 2) [V]	0 to 10		
1 Analog Input (X2: 3 ; X2:11) [V]	-10 to +10		
1 Analog Input (X2: 4 ; X2:12) [mA]	-20 to +20		

Type: dACi	Maximum current [V]; (current range)			Dither signal
	24/xxx	36/48/xxx	80/xxx	
2 Programmable on/off outputs (X1: 16,17) low-side-switch with inverse diode	3.0[1]	1.5[1]	1.5[1]	-
2 Outputs for proportional valves (X10: 18) low-side switches with inverse diodes current controlled, superposed with dither-signal	(0 to 2.0)[1]	(0 to 2.0)[1]	(0 to 2.0)[1]	62.5 Hz; 0 to 300 mA
2 Programmable digital inputs or digital outputs (X2: 22, 23)	-			-

[1] Without overload and short circuit protection, but with open circuit detection.

Type: dACi		24/xxx	36/48/xxx	80/xxx
Incremental encoder 1 (X2: 5, 13, 19, 20)	Level [V]	0/15 V, A, B (e.g. sensor bearing)		
	Supply	15 V, max 50mA		

Others

Ambient temperature range	-40 to 50°C [-40°F to 122°F]
Max. heat-sink temperature @ full current	85°C [185°F]
Heat-sink switch off temperature	100°C [212°F]
Relative humidity	100%, condensation is allowed
Signal line connectors	AMP-Seal; Molex mini-fit junior optional
IP protection	IP 64 with membrane
EMC/ESD	EN 12885
safety	EN 1175
UL	UL 583

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