



Datasheet

ISI2 – Single Stage



ISI2 – single stage

Inverter

Type	IGBT 6-puls bridge	
	ISI2-B1-12X-400X-800-X-X	ISI2-B1-12X-400X-900-X-X

Description

The ISI2 IGBT inverter is a high power-density water cooled inverter for synchronous motors/generators. Combined with the Xilinx Zync based SciMo controller it offers the latest model-base control technology to allow superior control of highly utilized, highly saturated, high speed machines.

A special feature of the ISI2 powerstage platform is the possibility to connect multiple powerstages to one controller. Up to two motors can be powered with two single powerstages each, offering up to 800 A_{RMS} peak current per (6-phase) motor. Or one (12-phase) motor can be powered with up to 1600 A_{RMS} with 4 powerstages.

Performance

Continuous power	(measured)	300 kVA
Maximum power	(measured)	380 kVA
Continuous phase current	(measured)	320 A _{RMS}
Maximum phase current	(measured)	400 A _{RMS} (5s)

Electrical

Max. voltage DC-Link	(specified)	800 V	900 V
Nominal switching frequency	(specified)		12 kHz
Max. switching frequency			14 kHz
DC-Link capacity		560 µF ±10%	420 µF ±10%
Y-capacity	(calculated)		47 nF
Active Discharge via motor winding to <50V	(calculated)		< 2sec
Passive Discharge (internal resistor) to <50V			75s
EMI compatibility		No integrated EMI-filter	
Power supply LV1		12 V – 36 V	

Mechanical

Weight	(measured)	6,0 kg (without controller)
Protection class ISO20653		IP67
Phase cables size		35, 50, 70, option 95 mm ²
Phase terminals		Cable glands, option Amphenol PowerLok PL00X-301

Cooling

Cooling fluid		Water/glykol
Flowrate (minimum)	(t.b.d)	6 L/min
Inlet temperature range	(t.b.d)	-40 °C - 50°C
Pressure loss @6L/min	(typical)	300mbar (per stage)
Maximum relative pressure		1.5 bar
Cooling connectors		Normaquick PS3

Dimension

Width/Length/Height	224 mm / 364 mm / 76 mm
---------------------	-------------------------

LV-Interface

Communication connector	gate signals, fault, measurement data (Souriau 8STA01243SN)
Power supply connector	+12-24V (Souriau 8STA 0 0635 PN)

optional Controller Interfaces

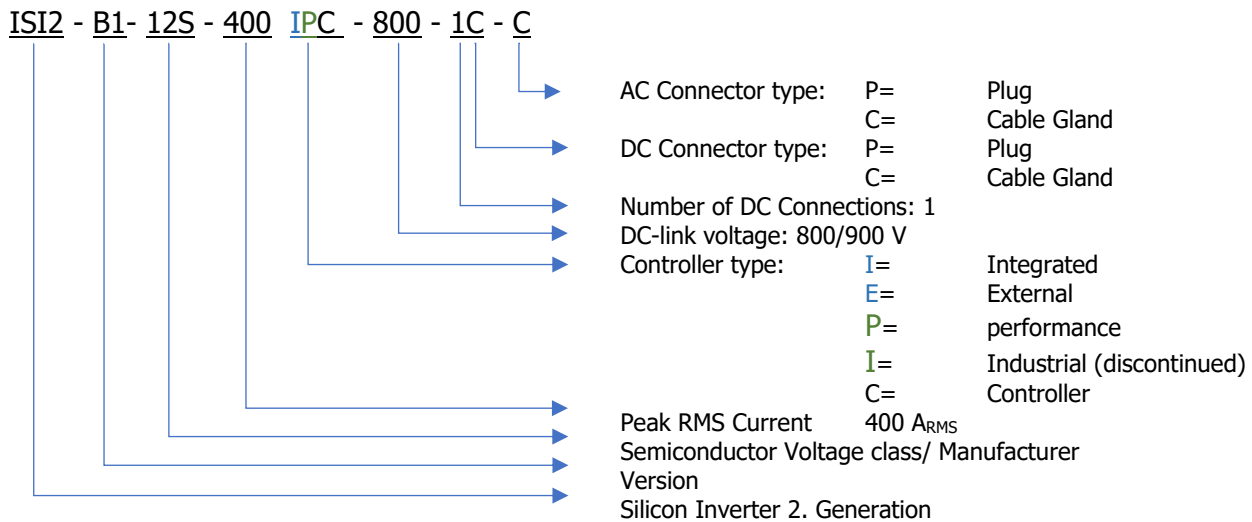
Communication	CAN 2.0A/B with up to 1Mbite rate, Ethernet(TCP)
Communication connectors	Souriau circular Mil-spec connectors
Position sensor	Sin/Cos (option Resolver, ABZ)
Input channels	2x digital, 4x analog
Output channels	2x digital

Features

- Model-predictive control
- Adjustable PWM frequency
- Adding up to four powerstages (ISI2 single stage) to one controller
- Feedback broadcast for monitoring
- Communication watchdog



ISI2-B1-12X-400IPC-800-1C-C single stage with controller performance version



Rev.0 05.06.2023	Data sheet version: Initial	
Rev.0 15.01.2023	Included Version Code (B1)	
Rev.1.0 18.04.2024	Included Cover picture	