EC DECLARATION of CONFORMITY

DVE Technologies ApS

hereby declares that the product(s)

GFI-10K2 Grid Feed Inverter

satisfies the following specific regulations:

- 2006/95/EC (EC Low Voltage Directive)
- 2004/108/EC (EC EMC Directive)

and their amendments

Normative standards applied:

Emission:	EN 61000-6-3
Harmonics:	EN 61000-3-2
Flicker:	EN 61000-3-3
Immunity:	EN 61000-6-1
Electrical safety:	EN 60950
Grid compliance:	EN 50438 DIN VDE0126 DIN VDE AR-N 4105 G83/2 G59/2 /3 DK5940

Date of declaration: 12/05-2014

Signed by: DVE Technologies ApS
Sdr. Tingvej 10
DK-6630 Roedding
Denmark

Technical Manager
Rasmus Pedersen

EC DECLARATION of CONFORMITY

DVE Technologies ApS

hereby declares that the product(s)

GFI-15K2 Grid Feed Inverter

satisfies the following specific regulations:

- 2006/95/EC (EC Low Voltage Directive)
- 2004/108/EC (EC EMC Directive)

and their amendments

Normative standards applied:

Emission:	EN 61000-6-3
Harmonics:	EN 61000-3-12
Flicker:	EN 61000-3-11
Immunity:	EN 61000-6-1
Electrical safety:	EN 60950
Grid compliance:	EN 50438 DIN VDE0126 DIN VDE AR-N 4105 G59/2 /3 DK5940

Date of declaration: 12/05-2014

Signed by: DVE Technologies ApS
Sdr. Tingvej 10
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Technical Manager
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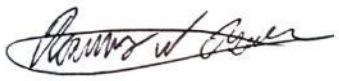


3.2 Technical data GFI-10K2

GENERAL	
Description	Integrated 3-phase inverter.
Operating temperature	-20 °C to 60 °C ambient, full power up to 40 °C ambient air temperature.
Storage temperature	-20 °C to 60 °C
Relative humidity	protected against humidity and condensing air by PCB coating
Protection degree	IP42
Safety class	class I (metal enclosure with earth connection)
INVERTER INPUT	
Nominal power	10.000 W
Continuous power @ 40 °C	10.000 W
Operating voltage	40-340 V AC
Nominal voltage @ full load	220-340 V AC
Maximum voltage	390 V AC
Rated current	3 x 20 A (rms)
Maximum current	3 x 30 A (rms)
Frequency range	0-150 Hz
DUMP LOAD OUTPUT	
Nominal power	15.000 W
Maximum power (120sec duration)	15.000 W
Maximum current	2x15A
GRID OUTPUT (AC)	
Voltage	230 V AC 3-phase + N +PE (4 Wire Y ±20%)
Nominal power	10.000 VA
Maximum power	10.500 VA
Nominal current	3 x 16 Arms
Frequency	AC frequency 50 Hz: 45 - 55 Hz programmable AC frequency 60 Hz: 55 - 63 Hz programmable
Nominal power factor	> 0.99 at full power
Reactive power	0.80 inductive – 0.80 capacitive
Harmonic distortion THD	< 3% THD
DC current injection	< 20mA
AC connector	AC glands on detachable plate in bottom of connection compartment.
Fuse	External fuses is mandatory, Recommended 25A (B) characteristics Not installing a properly rated fuse (Icu > 2.1 kA) will pose a safety hazard and will void the warranty of the inverter.
Maximum inrush current	28.2A
Short circuit L-N	150A peak/12.9A RMS(3 cycl) during 8ms
Short circuit L-L	298A peak/21.8A RMS (3 cycl) during 4ms
SYSTEM INFORMATION / DIAGNOSTICS / COMMUNICATION	
User interface	10 status LED's or TFT Touch display
Inverter external communication	1 USB Interface

3.4 Technical data GFI-15K2

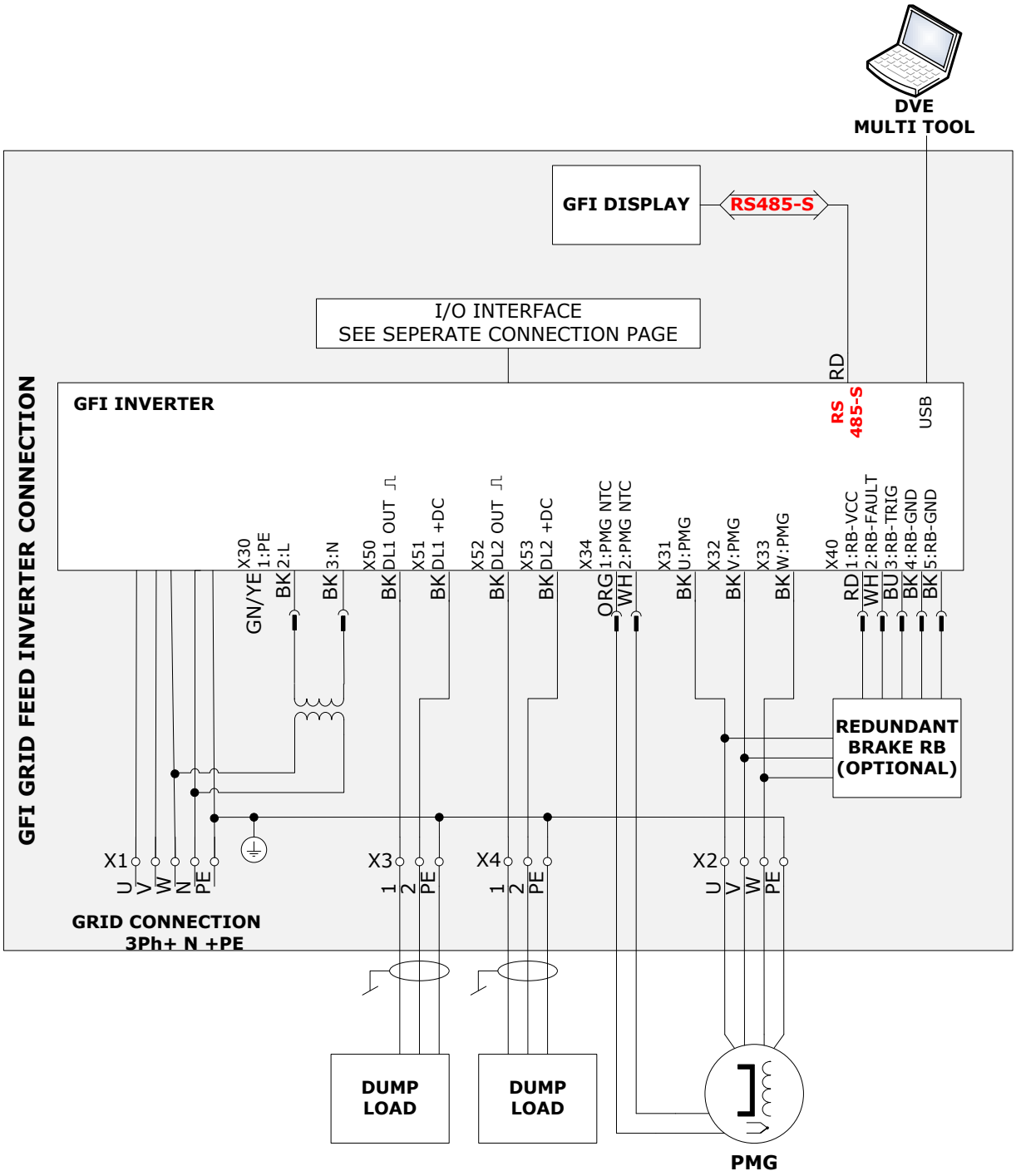
GENERAL	
Description	Integrated 3-phase inverter.
Operating temperature	-20 °C to 60 °C ambient, full power up to 40 °C ambient air temperature.
Storage temperature	-20 °C to 60 °C
Relative humidity	protected against humidity and condensing air by PCB coating
Protection degree	IP42
Safety class	class I (metal enclosure with earth connection)
INVERTER INPUT	
Nominal power	15.000 W
Continuous power @ 40 °C	15.000 W
Operating voltage	40-340 V AC
Nominal voltage @ full load	220-340 V AC
Maximum voltage	390 V AC
Rated current	3 x 30 A (rms)
Maximum current	3 x 30 A (rms)
Frequency range	0-150 Hz
DUMP LOAD OUTPUT	
Nominal power	15.000 W
Maximum power (120sec duration)	15.000 W
Maximum current	2x15A
GRID OUTPUT (AC)	
Voltage	230 V AC 3-phase + N +PE (4 Wire Y ±20%)
Nominal power	15.000 VA
Maximum power	15.750 VA
Nominal current	3 x 24.2 Arms
Frequency	AC frequency 50 Hz: 45 - 55 Hz programmable AC frequency 60 Hz: 55 - 63 Hz programmable
Nominal power factor	> 0.99 at full power
Reactive power	0.85 inductive – 0.85 capacitive
Harmonic distortion THD	< 3% THD
DC current injection	< 20mA
AC connector	AC glands on detachable plate in bottom of connection compartment.
Fuse	External fuses is mandatory, Recommended 32A (B) characteristics Not installing a properly rated fuse (Icu > 2.1 kA) will pose a safety hazard and will void the warranty of the inverter.
Maximum inrush current	28.2A
Short circuit L-N	150A peak/12.9A RMS(3 cycl) during 8ms
Short circuit L-L	298A peak/21.8A RMS (3 cycl) during 4ms
SYSTEM INFORMATION / DIAGNOSTICS / COMMUNICATION	
User interface	10 status LED's or TFT Touch display
Inverter external communication	1 USB Interface

3.5 Additional technical data for all GFI inverters

SAFETY DEVICES	
Island protection	An AC fault in any of the phases will disable the inverter. Redundant voltage and frequency window monitoring (QNS). Independent cut-off by means of 2 pole relay and solid state switch (ENS) according to VDE 0126-1-1:2006.
Temperature protection	thermal switch off at inverter internal over temperature
Safety devices AC grid side	Integrated RCD (AC/DC sensitive), trip levels 30 mA Jump 300 mA continuous Voltage / Frequency window, AC current limiting, DC current injection protection, transients surge protection (varistors class lll)
Reclosure time	wait 10 - 300 s (country selection dependant) after AC grid fault

SYSTEM INFORMATION / DIAGNOSTICS / COMMUNICATION	
RS485 communication channels (DVE-S_{BUS})	Standard
Wind direction / Wind (anemometer) interface	Standard 3 (1 x Wind direction / 2 x Wind speed)
Vibration sensor (VM102)	Standard 1
Galvanic isolated user input (digital / analogue)	Standard 8 x DI / 4 x AI
Relay contacts user output (change over)	Standard 3 x changeover
Free space for customer parts on internal DIN-rail	Standard
Thermal sensor input (NTC/PTC)	Standard 2 (1 x Generator / 1 x Dump load)
Prepared for 4.3” TFT colour touch display	Yes, optional add-on

4.8 Grid, Generator and Dump Load connections diagrams



NOTE:

If a disconnection switch or short circuit switch is to be installed between the generator and the inverter, the inverter is protected against reverse power surging. This means that a current cannot flow from the internal energy storage of the GFI inverter to a switch installed.

A short circuit switch to the three incoming phases from the PM generator can be added to the installation, but correct dimensioning according to PM data and cabling has to be considered.