

August 16, 2022
COSD# 40U0-1

OPERATING MANUAL

Industrial Quality DC/AC Frequency Converter

MODEL: CTP 6K-680W/E3P-4X3U3-U1579



Thiele KG

ABSOPULSE ELECTRONICS LTD

110 Walgreen Road
Carp, Ontario
K0A 1L0 CANADA

Tel. (613) 836-3511
Fax. (613) 836-7488
absinfo@absopulse.com

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Model: CTP 6K-680W/E3P-4X3U3-U1579
COSD: 40U0-1 (40U0-2; 40U0-2A; 40U0-2B; 40U0-3; 40U0-3A)
Summary description: 6kVA Sine Wave Inverter System
 680Vdc to 400 Vac (L-L), 3-phase/50Hz
Customer Name: Thiele KG/Germany
Customer Part Number: Same as above



Product description:

This rugged, DC/AC inverter system uses field proven, microprocessor controlled high frequency PWM technology to generate the required output power with pure sine wave output voltage. The inverter is built with four modules each in 3U3 enclosure. These modules have internal power cards; three FIB 2000 modules, and 6 KHH 2000 which feeds the three MSI 2300 output modules. Built-in fans provide sufficient airflow for operation without de-rating to the specified temperature. High frequency conversion enables compact construction, low weight and high efficiency. The unit has full electronic protection. Input and output are filtered for low noise. The use of components with established reliability results in a high MTBF. The unit is manufactured at our plant under strict quality control.

Special Features: Conformal coating, CE Mark, CE DoC, CoFC

SPECIFICATIONS

Input Voltage

680Vdc nominal
 476-884Vdc operating range
 Input current 15A max

Input Protection

Inrush current limiting
 Varistors
 Reverse polarity protection
 Internal safety fuse
 Lower voltage than specified minimum input will not damage unit

Isolation

3000Vdc input to chassis
 2250Vdc output to chassis
 Output neutral is connected to the chassis internally

Standards

Designed to meet
 C22.2 No. 107.1 – 01,
 UL 458 and EN 60950-1

EMI

EN55032 Class A with margins

Output Voltage

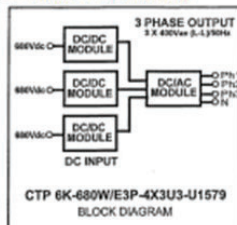
400Vac, 3-phase(L-L)
 8.6 Arms per phase, 50Hz
 Output neutral is internally connected to chassis

Wave Form

Sinusoidal

Total Harmonic Distortion

Less than 5% at full load



Line/Load Regulation

±6% from no load to full load

Load Crest Factor

2 at 90% load

Output Noise

High frequency ripple is less than 500mVrms (20MHz BW)

Output Overload Protection

Current limiting with short circuit protection.
 Thermal shutdown with automatic recovery in case of insufficient cooling

Output Overvoltage Protection

440V by internal supply voltage limiting

Efficiency

88% at full load

Operating Temperature Range

0°C to +50°C

Temperature Drift

0.05% per °C over operating temperature range

Cooling

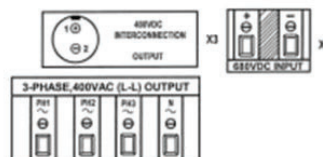
By built-in high-quality fans

Environmental Protection

Basic ruggedizing
 Conformal coating

Shock/Vibration

IEC 61373 Cat 1 A&B



Humidity

5 – 95% non-condensing

MTBF

95,000 hours at 45°C

Indicators

Green OUTPUT ON LED on each internal power card visible through the cooling slots

Control Input

None

Alarm Output

Not installed

Package Dimensions (WxHxL)

Four 3U3 cases, each with sizes:
 187 x 132 x 407mm
 (7.4" x 5.2" x 16")
 Chassis mount

Weight

Total approximately 28kg (61lbs)

Connections


Input: 2 pole terminal block Phoenix HV assembly on each input model
 Output: 4 pole terminal block Phoenix FRONT type
 Interconnections: Cable with connector.

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice
 Contamination related failures and shipping cost excluded

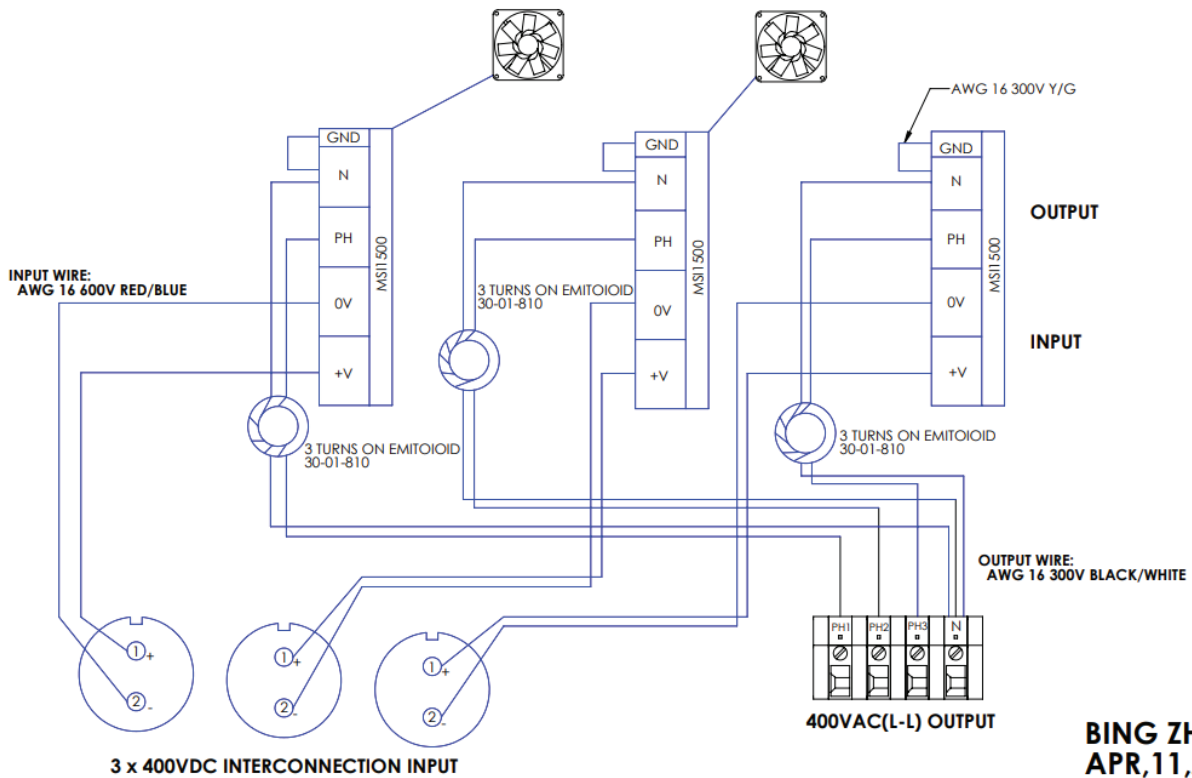
Originated by TS/lp	Date June 24, 2022
Updated by DK/ys	Drawing No./ Rev. SCD 40U0 1000A2
Approved by TS	

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INTERNAL WIRING DIAGRAM

CTP 6K-680W/E3P-4X3U3-U1579

CTP 6K-680W/E3P-4x3U4-U1579 AC PART

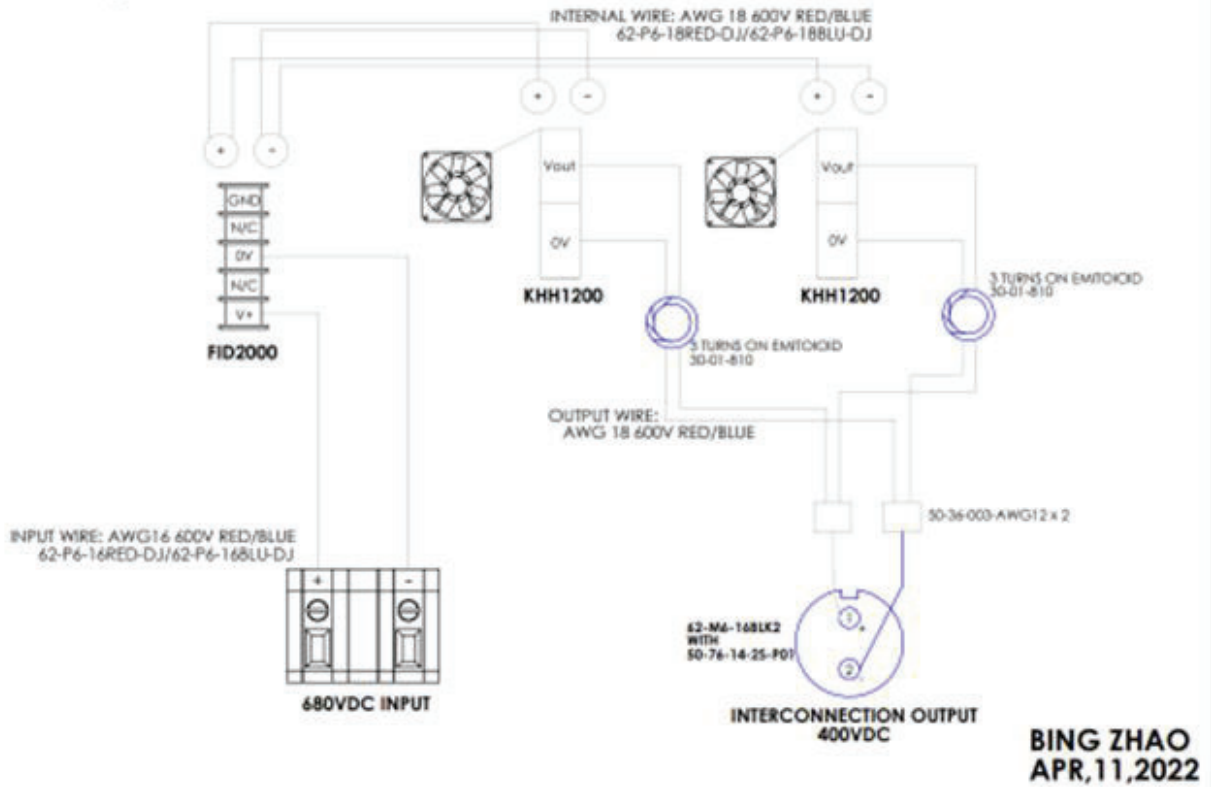


BING ZHAO
APR, 11, 2022

Drawn by BZ	Date April 11, 2022
Updated by TS	Drawing Number WDR 40U0 1000A
Approved by TS	ABSOPULSE ELECTRONICS LTD.

INTERNAL WIRING DIAGRAM CTP 6K-680W/E3P-4X3U3-U1579

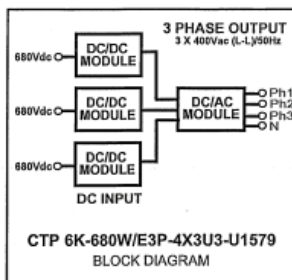
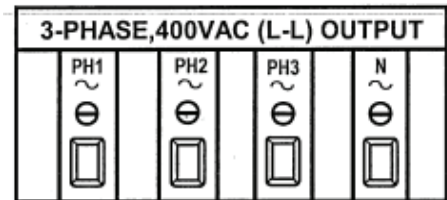
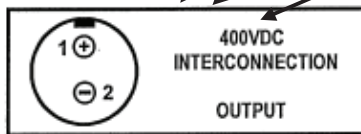
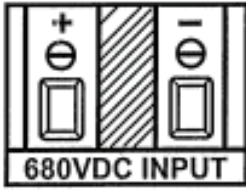
CTP 6K-680W/E3P-4x3U3-U1579 DC PART



Drawn by BZ	Date April 11, 2022
Updated by TS	Drawing Number WDR 40U0 1000A
Approved by TS	ABSOPULSE ELECTRONICS LTD.

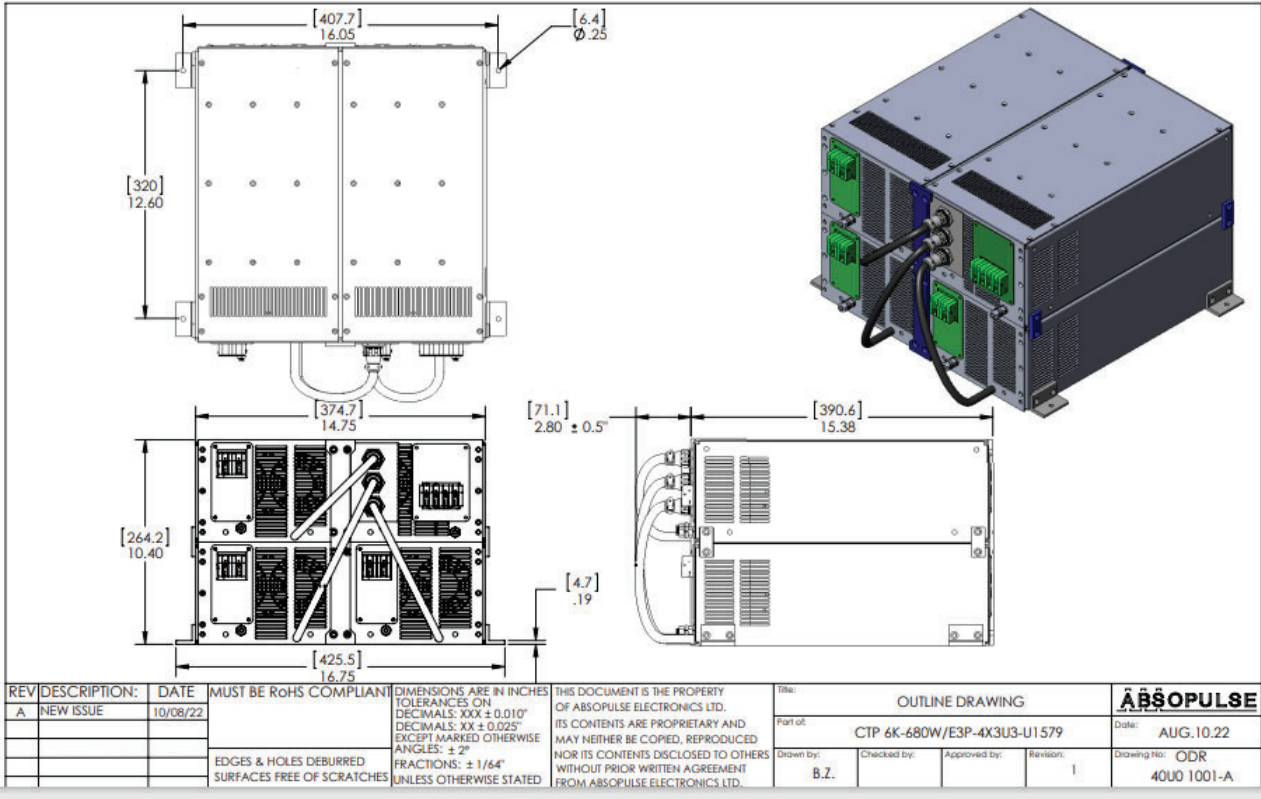
TERMINATIONS


CTP 6K-680W/E3P-4X3U3-U1579



OUTLINE DRAWING

CTP 6K-680W/E3P-4X3U3-U1579



Drawn by BZ	Date Aug 10, 2022
Updated by TS	Drawing Number ODR 40U0 1001A
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PHOTOGRAPHS

CTP 6K-680W/E3P-4X3U3-U1579



**DC/AC OUTPUT
MODULE**



**DC/DC INPUT
MODULE**



FRONT VIEW OF THE MODULES

CTP 6K-680W/E3P-4X3U3-U1579

INSTALLATION OPERATION AND TROUBLESHOOTING

1. Inspect unit for visible transit damage. Should there be any cause for concern, please contact factory before returning unit. No returns will be accepted without a Return Authorization
2. Check that the power supply input matches to the applicable input source.
3. Connect input and output according to the labels on the unit.
4. The output voltages and current limits are factory set according to the specifications. Should it be necessary to re-adjust any of these parameters, please consult with Engineering
5. This unit is cooled by built-in high-quality fans. Leave min 100-150mm space at the fan intake and terminal side for proper airflow.

SAFETY CONSIDERATIONS

1. The unit has hazardous voltages at any part of the power supply circuitry also on the terminal blocks. Therefore, the unit can be operated by qualified and instructed personnel only. Avoid touching any component or parts inside the unit. Wait a minimum of 30 seconds after removing the input power before doing any operation on the power supply.
2. Four ground studs are provided on the complete system; an M5 stud on each chassis. These are electrically identical (chassis connection).
3. Use the proper screw sizes for mounting.
4. This unit is electronically protected. If the system doesn't work properly, we recommend that the operator do not replace any of the internal fuses on the power modules or attempt repair. Return the power supply for servicing.
5. Repairs should only be performed by qualified service personnel.

RECOMMENDED WIRE SIZES

The following values are to be used for guidelines only. For longer wire lengths, larger gauge may be needed to minimize line losses.

CURRENT (AMPS)	WIRE SIZE (AWG)	Cross Section mm²
Up to 7Amps	18	0.8
7 to 10Amps	16	1.3
10 to 15Amps	14	2.0
15 to 20Amps	12	3.3
20 to 30Amps	10	5.3
30 to 40Amps	8	8.4
40 to 63Amps	6	13
63 to 80Amps	4	21
80 to 100Amps	2	34
100 to 150Amps	0	53
150 to 300Amps	000	85

MAINTENANCE

Preventative maintenance on this product is minimal. Under normal circumstances, the only maintenance required is a regular visual inspection of the unit to check for any signs of dust, dirt, corrosion or other damage.

Electronic systems that are used in harsh environments should be inspected more frequently as well as cleaned if dusty, or dirty. Accumulated dust may block airflow and impede cooling which can cause overheating of the unit. These units should also be checked thoroughly for any loose hardware or damaged wiring caused by excessive shock and vibration.

WARRANTY AND SERVICE

1. Standard warranty is for 2 years subject to application within good Engineering practice. Contamination related failures and shipping cost excluded
2. Should servicing be required please contact service manager for return authorization. (service@absopulse.com)