Company name:
Created by:
Phone:

Date: 4/15/2019

Count	Description
1	**CRN 155-5-2A-P-A-V-HQQV**

Product photo could vary from the actual product

Product No.: 99505351

Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in high-grade stainless steel. A built-in thrust-handling device absorbs hydraulic axial forces which enables the use of a standard motor.

The Grundfos cartridge shaft seal ensures high reliability, safe handling, and easy access and service. Wear parts in the shaft seal are available as service kits and can be replaced without having to renew the complete shaft seal. Power transmission is via a rigid split coupling. Pipe connection is via PJE (Victaulic®) couplings.

The pump is fitted with a 3-phase, fan-cooled asynchronous motor.

Further product details

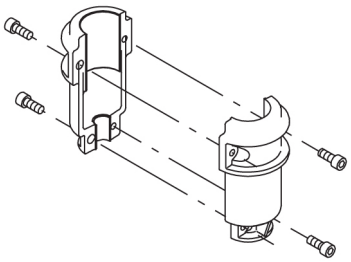
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An integral part of the process is a pretreatment. The entire process consists of these elements:

1) Alkaline-based cleaning.
2) Zinc phosphating.
3) Cathodic electro-deposition.
4) Curing to a dry film thickness 18-22 my m.

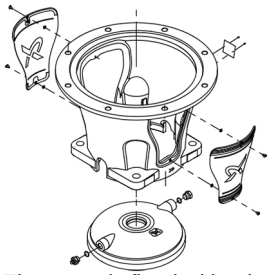
The colour code for the finished product is NCS 9000/RAL 9005.

Pump

A long split coupling connects the pump and motor shaft. It is enclosed in the motor stool by means of two coupling guards. The long coupling makes it possible to replace the shaft seal without removing the motor from the pump.



The motor stool connects the pump head and motor. The pump head has a combined 1/2" priming plug and vent screw.



The pump is fitted with a balanced O-ring seal unit with a rigid torque-transmission system. This seal type is assembled in a cartridge unit which makes replacement safe and easy. Due to the balancing, this seal type is suitable for high-pressure applications. The cartridge construction also protects the pump shaft from possible wear from a dynamic O-ring between pump shaft and shaft seal.

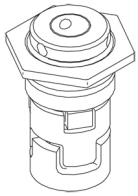
Primary seal:

- Rotating seal ring material: silicon carbide (SiC)
- Stationary seat material: silicon carbide (SiC)

This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.

Secondary seal material: FKM (fluorocarbon rubber)

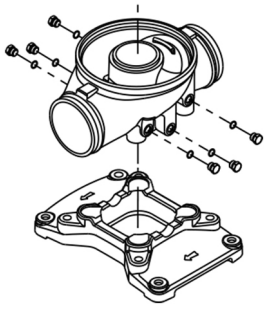
FKM has excellent resistance to oils and chemicals. Above 90 °C, FKM should only be used in media without water.



The shaft seal is screwed into the pump head.

The chambers and impellers are made of stainless-steel sheet. The chambers are provided with a PEEK neck ring offering improved sealing and high efficiency. The impellers have smooth surfaces, and the shape of the blades ensure a high efficiency.

The pump has a stainless-steel base mounted on a separate cast-iron base plate. The base and base plate are kept in position by the tension of the staybolts which hold the pump together. Both the inlet and the outlet side of the base have two pressure gauge tappings. The pump is secured to the foundation by four bolts through the base plate. The base is prepared for connection by means of PJE (Victualic®) couplings.



Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. The motor is flange-mounted with free-hole flange (FF).

Motor-mounting designation in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (Code II).

Electrical tolerances comply with IEC 60034.

The motor efficiency is classified as premium efficiency in accordance with EISA2007.

The motor has thermistors (PTC sensors) in the windings in accordance with DIN 44081/DIN 44082. The protection reacts to both slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

Thermal switches must be connected to an external control circuit in a way which ensures that the automatic reset cannot cause accidents. The motors must be connected to a motor-protective circuit breaker according to local regulations.

A variable speed drive makes adjustment of pump performance to any duty point possible. If the motor is to be connected to a variable speed drive, the pump must be ordered with an electrically insulated motor bearing.

Technical data

Controls:

Frequency converter:	NONE

Liquid:

Pumped liquid:	Water
Liquid temperature range:	-4 .. 194 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³

Technical:

Rated pump speed:	3576 rpm
Rated flow:	820 US gpm
Rated head:	575.5 ft
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQV
Curve tolerance:	ISO9906:2012 3B

Materials:

Base:	Stainless steel EN 1.4408 ASTM A351 CF8M
Impeller:	Stainless steel EN 1.4401 AISI 316
Bearing:	WC/WC
Support bearing:	Graflon
Thrust handling device:	SiC/WC
Material certified according to:	European standards

Installation:

Maximum ambient temperature:	122 °F
Maximum operating pressure:	580.15 psi
Max pressure at stated temperature:	363 psi / 194 °F 580.15 / 176 psi / °F
Type of connection:	PJE
Size of suction port:	6 inch
Size of outlet port:	6 inch
Pressure rating for pipe connection:	1000 psi
Flange size for motor:	445TSD

Electrical data:

Motor standard:	NEMA
Motor type:	Baldor
IE Efficiency class:	NEMA Premium / IE3 60Hz
Rated power - P2:	150 HP
Power (P2) required by pump:	150 HP
Main frequency:	60 Hz
Rated voltage:	3 x 460 V
Service factor:	1.15
Rated current:	166 A

GRUNDFOS

Company name:
Created by:
Phone:

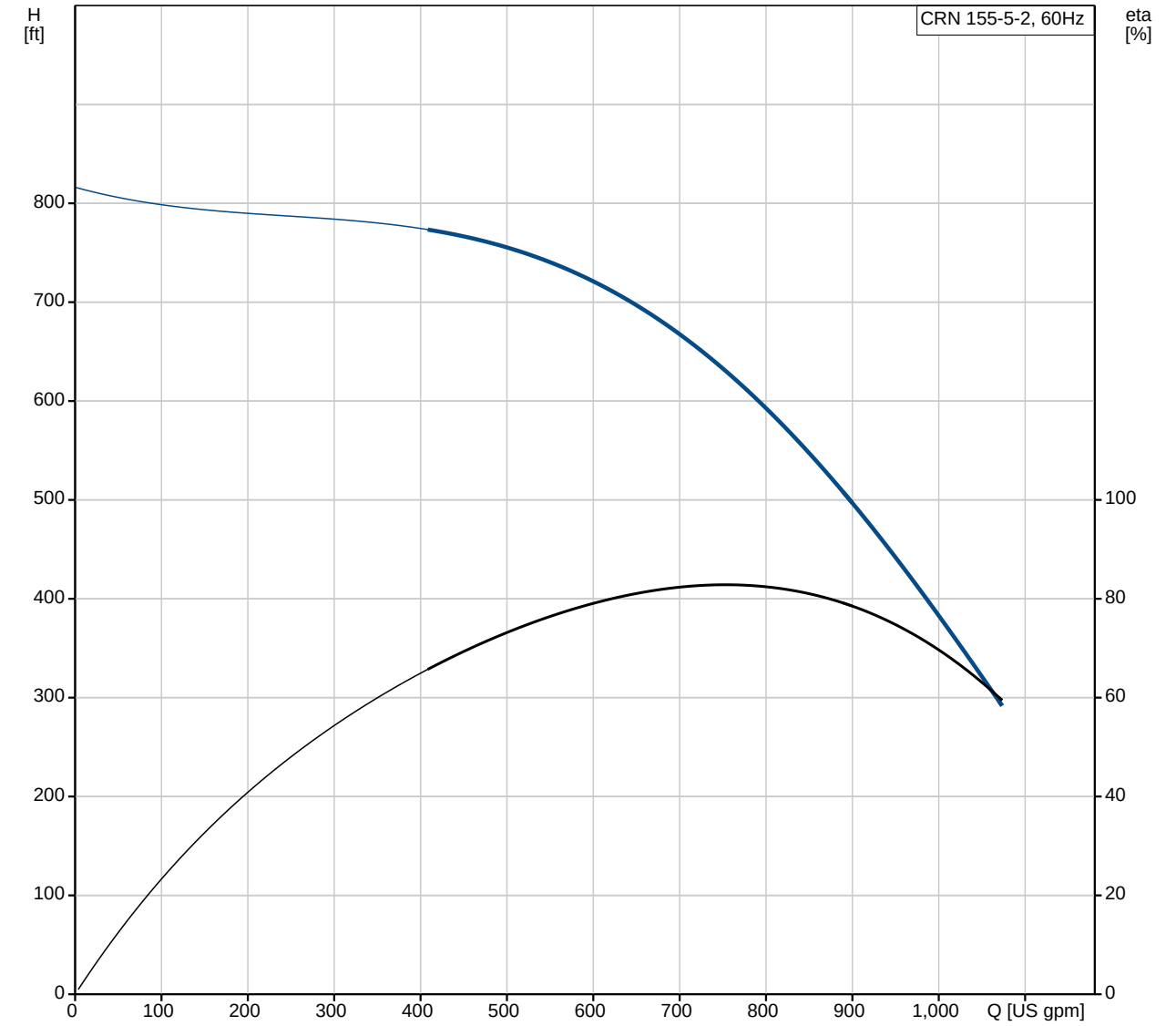
Date: 4/15/2019

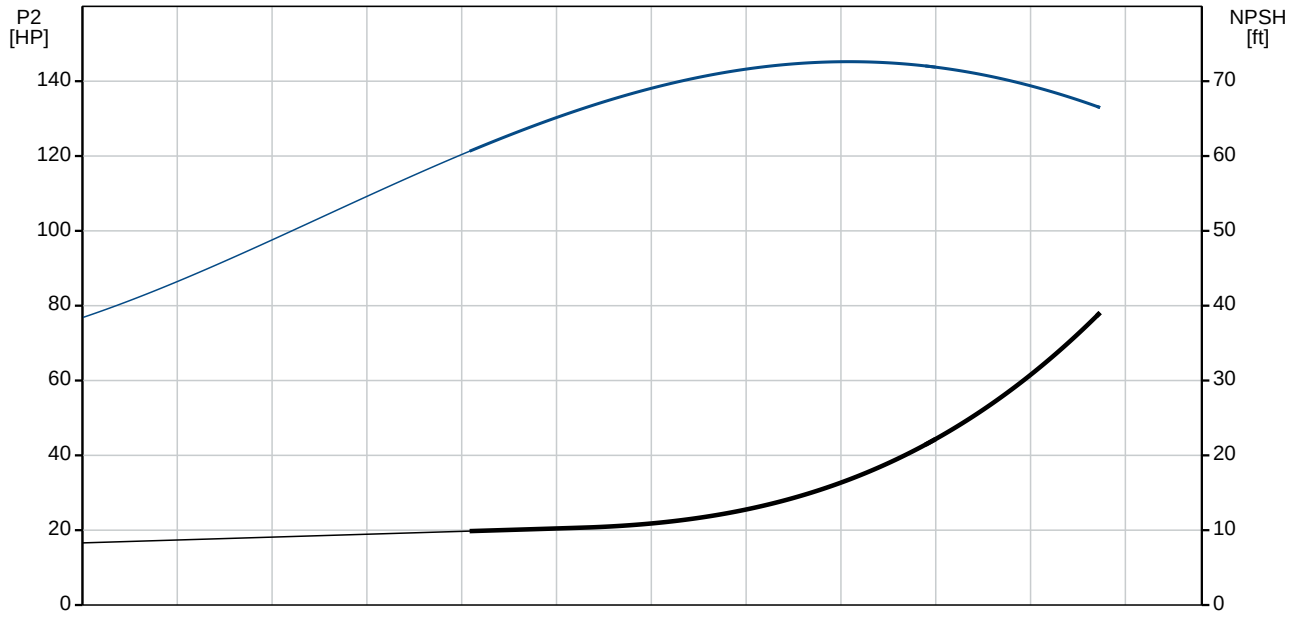
Count	Description	
	Cos phi - power factor:	0.89
	Rated speed:	3575 rpm
	IE efficiency:	IE3 95.3%
	Number of poles:	2
	Enclosure class (IEC 34-5):	55 Dust/Jetting
	Insulation class (IEC 85):	F
	Motor Number:	99039034
	Others:	
	Net weight:	2600 lb
	Gross weight:	3080 lb
	Shipping volume:	138 ft^3
	Thrust handling device:	Y
	Approvals:	NSF/ANSI 372

Company name:
Created by:
Phone:

Date: 4/15/2019

99505351 CRN 155-5-2A-P-A-V-HQQV 60 Hz

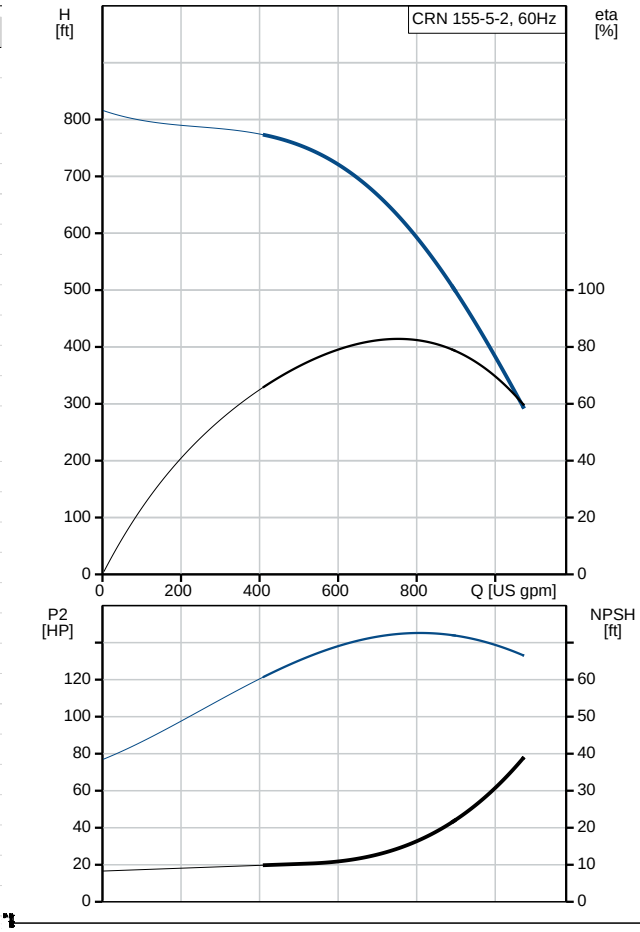


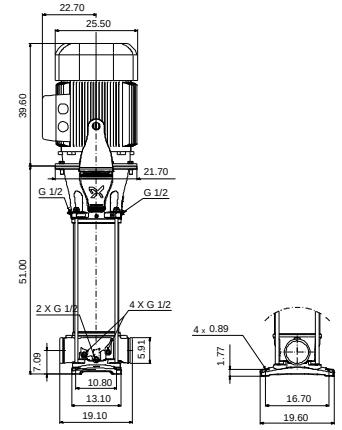


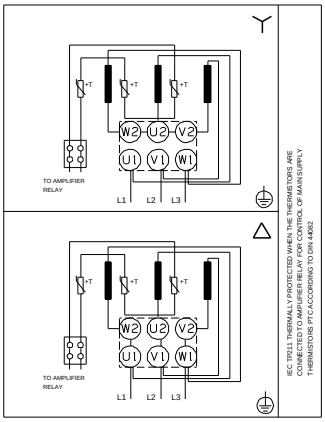
Company name:
Created by:
Phone:

Date: 4/15/2019

Description	Value
General information:	
Product name:	CRN 155-5-2A-P-A-V-HQQV
Product No.:	99505351
EAN:	5713830187517
Technical:	
Rated pump speed:	3576 rpm
Rated flow:	820 US gpm
Rated head:	575.5 ft
Head max:	816 ft
Stages:	5
Impellers:	5
Number of reduced-diameter impellers:	2
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQV
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
Cooling:	TEFC
Materials:	
Base:	Stainless steel
	EN 1.4408
	ASTM A351 CF8M
Impeller:	Stainless steel
	EN 1.4401
	AISI 316
Material code:	A
Code for rubber:	V
Bearing:	WC/WC
Support bearing:	Graflon
Thrust handling device:	SiC/WC
Material certified according to:	European standards
Installation:	
Maximum ambient temperature:	122 °F
Maximum operating pressure:	580.15 psi
Max pressure at stated temperature:	363 psi / 194 °F
	580.15 / 176 psi / °F
Type of connection:	PJE
Size of suction port:	6 inch
Size of outlet port:	6 inch
Pressure rating for pipe connection:	1000 psi
Flange size for motor:	445TSD
Connect code:	P
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-4 .. 194 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³
Electrical data:	
Motor standard:	NEMA
Motor type:	Baldor
IE Efficiency class:	NEMA Premium / IE3 60Hz
Rated power - P2:	150 HP
Power (P2) required by pump:	150 HP
Main frequency:	60 Hz
Rated voltage:	3 x 460 V







GRUNDFOS

Company name:
Created by:
Phone:

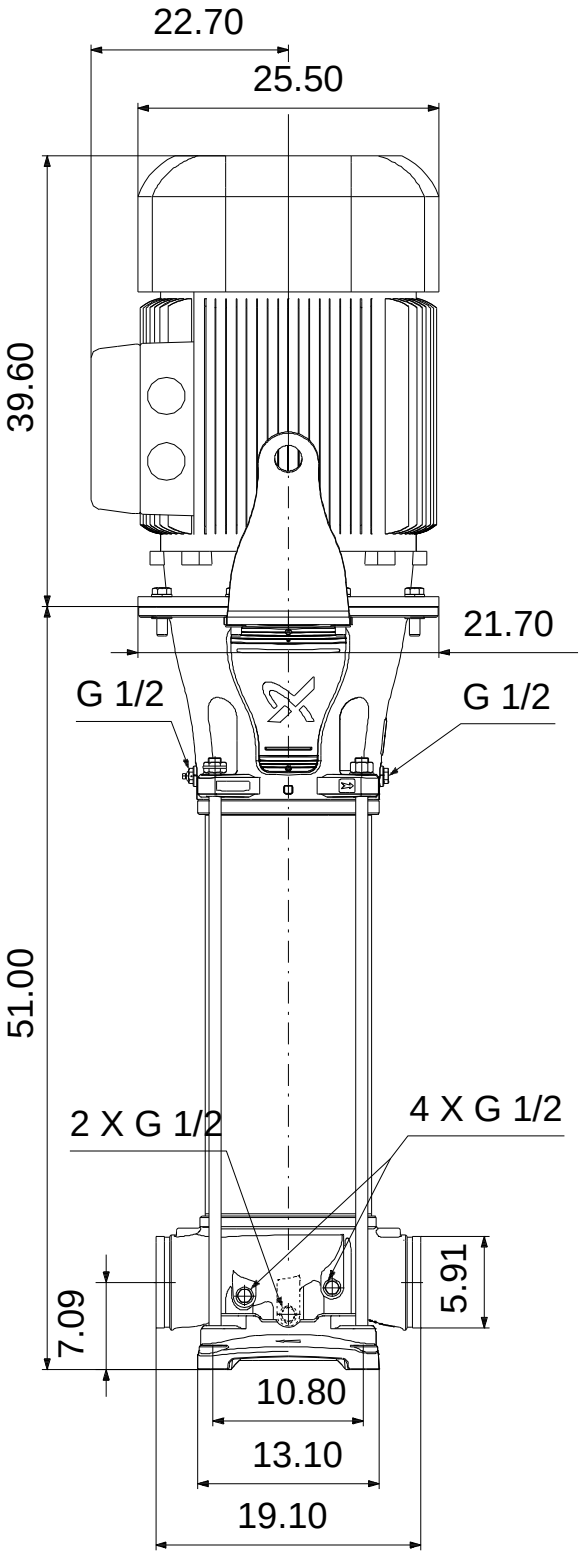
Date: 4/15/2019

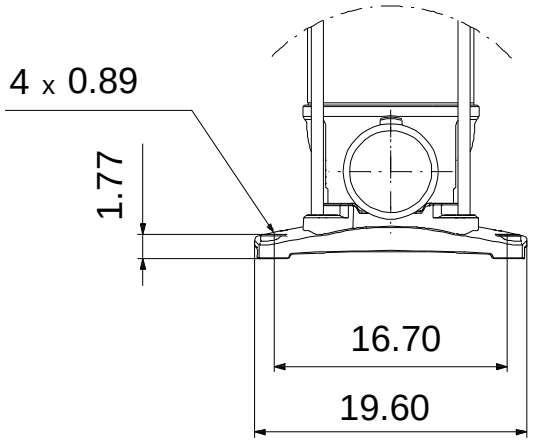
Description	Value
Service factor:	1.15
Rated current:	166 A
Load current:	191/96 A
Cos phi - power factor:	0.89
Rated speed:	3575 rpm
IE efficiency:	IE3 95.3%
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protection:	PTC
Motor Number:	99039034
Controls:	
Frequency converter:	NONE
Others:	
Net weight:	2600 lb
Gross weight:	3080 lb
Shipping volume:	138 ft^3
Thrust handling device:	Y
Approvals:	NSF/ANSI 372

Company name:
Created by:
Phone:

Date: 4/15/2019

99505351 CRN 155-5-2A-P-A-V-HQQV 60 Hz



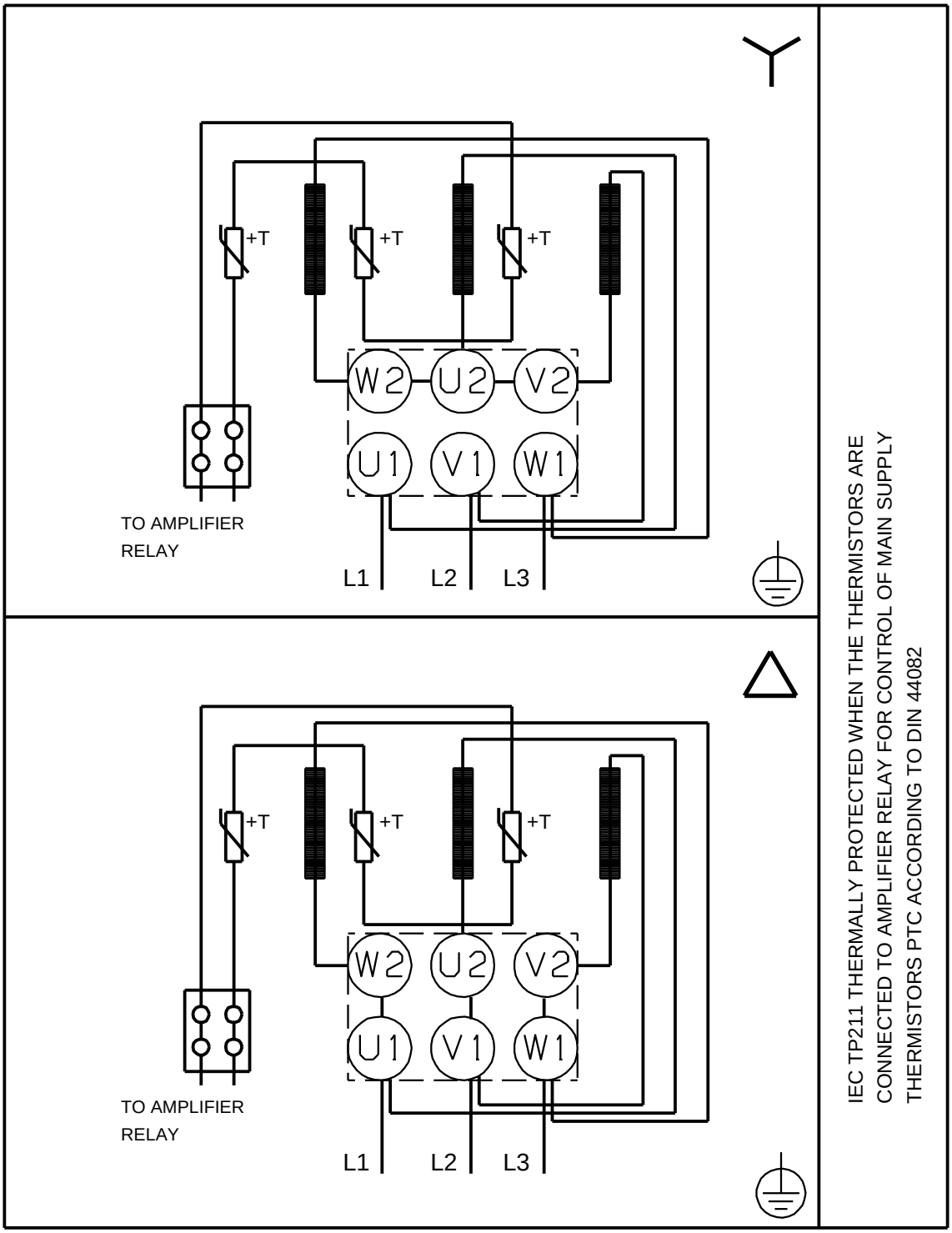


Note! All units are in [in] unless otherwise stated.
Disclaimer: This simplified dimensional drawing does not show all details.

Company name:
Created by:
Phone:

Date: 4/15/2019

99505351 CRN 155-5-2A-P-A-V-HQQV 60 Hz



All units are [in] unless otherwise presented.