

Submittal Data

PROJECT:	UNIT TAG:	QUANTITY:
REPRESENTATIVE: _____	TYPE OF SERVICE:	DATE: _____
ENGINEER:	SUBMITTED BY:	DATE:
CONTRACTOR:	APPROVED BY:	DATE:
	ORDER NO.:	DATE:

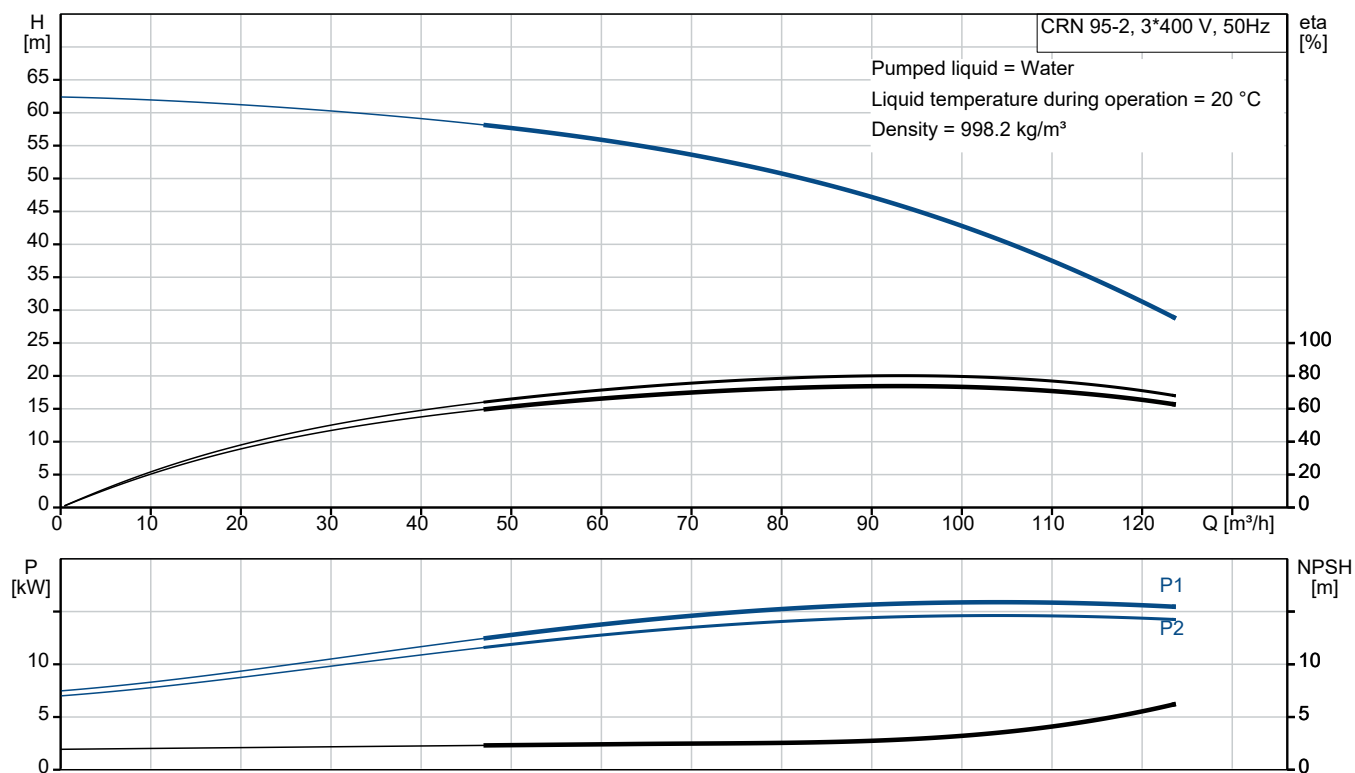


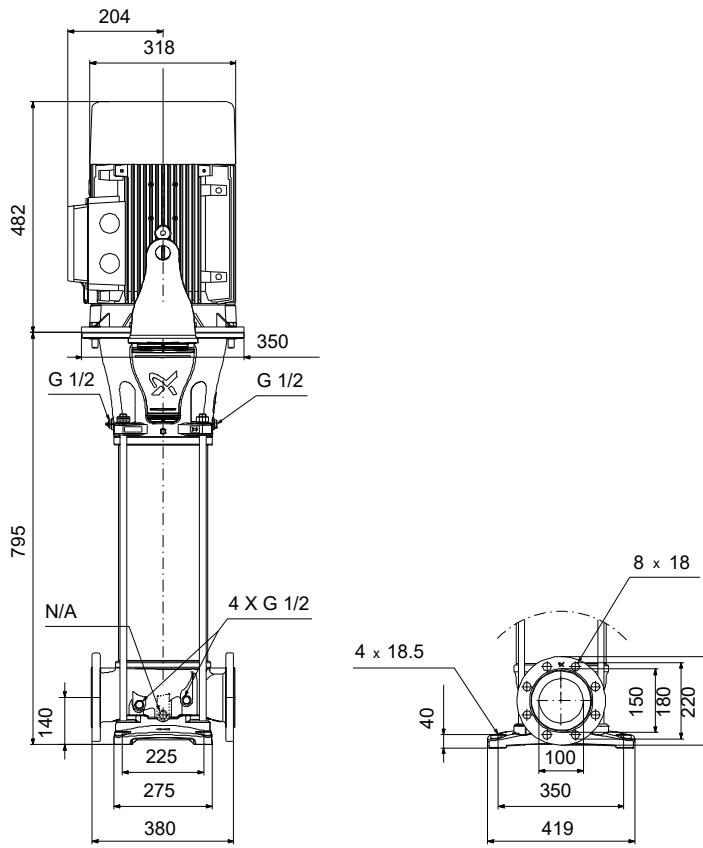
CRN 95-2 A-F-A-E-HQQE

Vertical, multistage centrifugal pump with suction and discharge ports on the same level. Pump materials in contact with the liquid are in high-grade stainless steel (EN 1.4401)

Note! Product picture may differ from actual product

Conditions of Service	Pump Data	Motor Data
Liquid: Water	Liquid temperature range: -20 .. 120 °C	Rated power - P2: 15 kW
Temperature: 20 °C	Maximum ambient temperature: 60 °C	Rated voltage: 380-415D/660-690Y V
Specific Gravity: 1.000	Shaft seal: HQQE	Mains frequency: 50 Hz
	Product number: On request	Enclosure class: 55 Dust/Jetting
		Insulation class: F
		Motor protection: PTC
		Motor type: 160MD
		Eta 1/1: 91.9 %




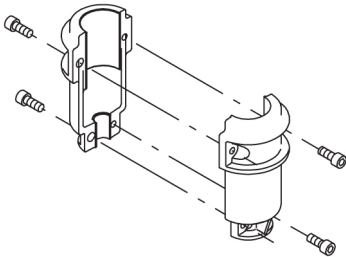


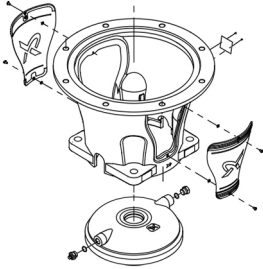
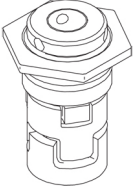
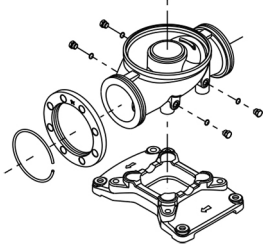
Base: Stainless steel
EN 1.4408
ASTM A351 CF8M

Impeller: Stainless steel
AISI 316
EN 1.4401

Material code: A

Code for rubber: E

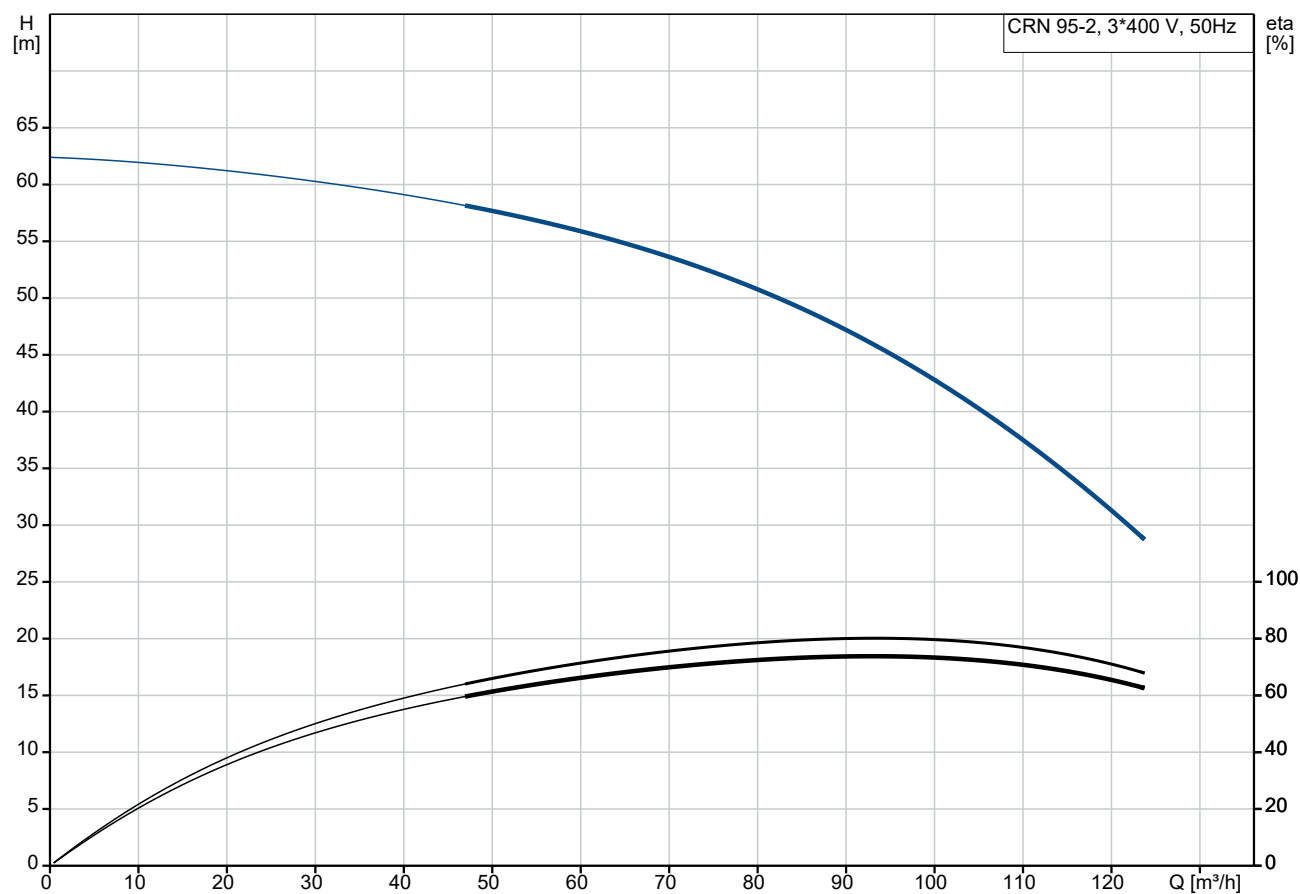
Qty.	Description
1	<p>CRN 95-2 A-F-A-E-HQQE</p>  <p>Note! Product picture may differ from actual product</p> <p>Product No.: On request</p> <p>Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in high-grade stainless steel. The Grundfos cartridge shaft seal ensures high reliability, safe handling, and easy access and service. Power transmission is via a rigid split coupling. Pipe connection is via DIN flanges.</p> <p>The pump is fitted with a 3-phase, fan-cooled asynchronous motor.</p> <p>Further product details</p> <p>Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process.</p> <p>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.</p> <p>An integral part of the process is a pretreatment.</p> <p>The entire process consists of these elements:</p> <ol style="list-style-type: none"> 1) Alkaline-based cleaning. 2) Zinc phosphating. 3) Cathodic electro-deposition. 4) Curing to a dry film thickness 18-22 my m. <p>The colour code for the finished product is NCS 9000/RAL 9005.</p> <p>Pump</p> <p>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.</p>  <p>The motor stool connects the pump head and motor. The pump head has a combined 1/2" priming plug and vent screw.</p>

Qty.	Description
1	 <p>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.</p> <p>Seal faces:</p> <ul style="list-style-type: none"> • Rotating seal ring material: silicon carbide (SiC) • Stationary seat material: silicon carbide (SiC) <p>This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.</p> <p>Secondary seal material: EPDM (ethylene-propylene rubber)</p> <p>EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.</p>  <p>The shaft seal is screwed into the pump head.</p> <p>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.</p> <p>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 tapings. The pump is secured to the foundation by four bolts through the base plate. The flanges are fastened to the base by means of locking rings.</p>  <p>Motor</p> <p>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).</p> <p>Motor-mounting designation in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (Code II).</p> <p>Electrical tolerances comply with IEC 60034.</p> <p>The motor efficiency is classified as IE3 in accordance with IEC 60034-30-1.</p>

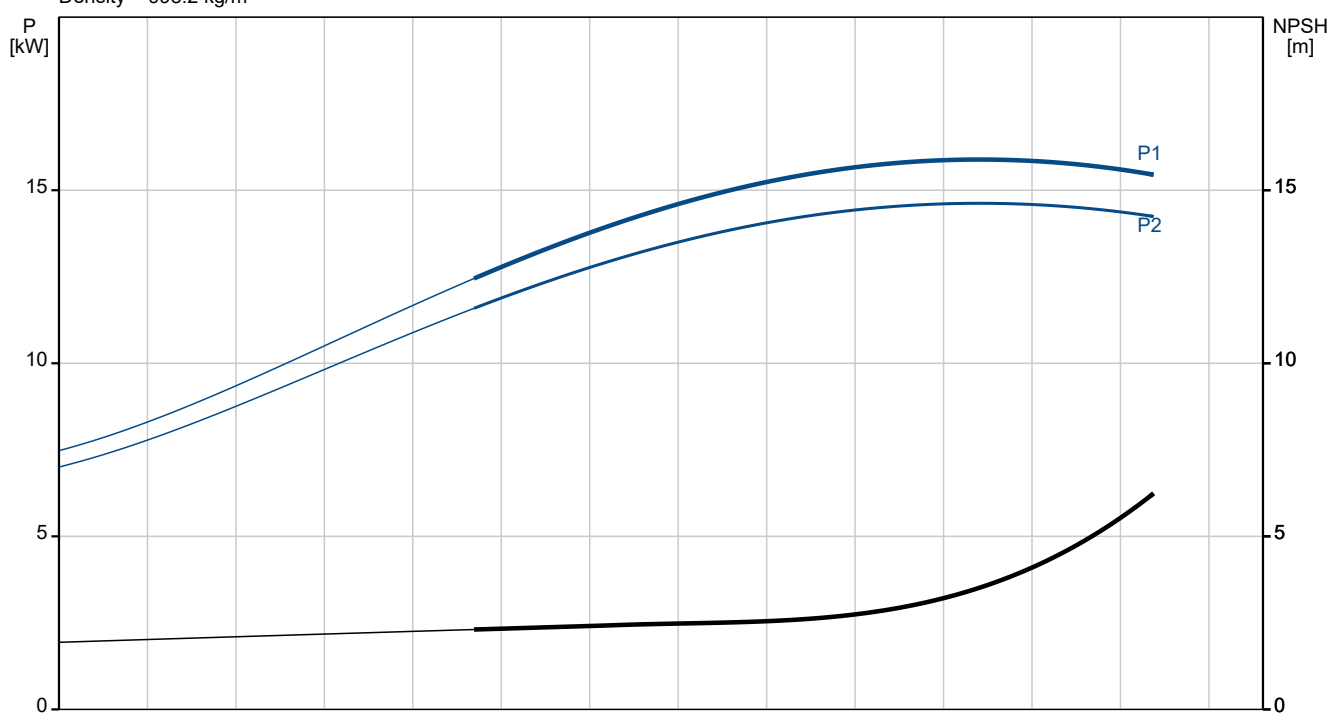
Qty.	Description
1	<p>The motor has thermistors (PTC sensors) in the windings in accordance with DIN 44081/DIN 44082. The protection reacts to both slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.</p> <p>Thermal switches must be connected to an external control circuit 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.</p> <p>The motor can be connected to a variable speed drive for adjustment of pump performance to any duty point. Grundfos CUE offers a range of variable speed drives. Please find more information in Grundfos Product Center.</p> <p>Technical data</p> <p>Liquid:</p> <p>Pumped liquid: Water</p> <p>Liquid temperature range: -20 .. 120 °C</p> <p>Selected liquid temperature: 20 °C</p> <p>Density: 998.2 kg/m³</p> <p>Technical:</p> <p>Pump speed on which pump data are based: 2956 rpm</p> <p>Rated flow: 95 m³/h</p> <p>Rated head: 45.7 m</p> <p>Pump orientation: Vertical</p> <p>Shaft seal arrangement: Single</p> <p>Primary shaft seal: HQQE</p> <p>Code for shaft seal: HQQE</p> <p>Approvals: CE,EAC,UKCA,SEPRO</p> <p>Approvals for drinking water: ACS</p> <p>Curve tolerance: ISO9906:2012 3B</p> <p>Materials:</p> <p>Type key, code for materials: A</p> <p>Type key, code for rubber components. E = EPDM, V=FKM: E</p> <p>Base:</p> <p>Stainless steel</p> <p>EN 1.4408</p> <p>ASTM A351 CF8M</p> <p>Impeller:</p> <p>Stainless steel</p> <p>EN 1.4401</p> <p>AISI 316</p> <p>Bearing:</p> <p>WC/WC</p> <p>Support bearing: Graflon</p> <p>Material certified according to: European standards</p> <p>Installation:</p> <p>Maximum ambient temperature: 60 °C</p> <p>Maximum operating pressure: 16 bar</p> <p>Max pressure at stated temp: 16 bar / 120 °C</p> <p>Type of connection: DIN</p> <p>Size of inlet connection: DN 100</p> <p>Size of outlet connection: DN 100</p> <p>Pressure rating for connection: PN 16</p>

Qty.	Description
1	<p>Flange size for motor: FF300</p> <p>Terminal box position: 6</p> <p>Electrical data:</p> <p>Motor standard: IEC</p> <p>Motor type: 160MD</p> <p>Rated power - P2: 15 kW</p> <p>Power (P2) required by pump: 15 kW</p> <p>Mains frequency: 50 Hz</p> <p>Rated voltage: 3 x 380-415D/660-690Y V</p> <p>Rated current: 28,0-26,0/16,2-15,6 A</p> <p>Starting current: 660-780 %</p> <p>Cos phi - power factor: 0.89-0.87</p> <p>Rated speed: 2930-2950 rpm</p> <p>IE Efficiency class: IE3</p> <p>Motor efficiency at full load: 91.9 %</p> <p>Motor efficiency at 3/4 load: 92.4-92.7 %</p> <p>Motor efficiency at 1/2 load: 92.4-92.3 %</p> <p>Number of poles: 2</p> <p>Enclosure class (IEC 34-5): 55 Dust/Jetting</p> <p>Insulation class (IEC 85): F</p> <p>Motor No: 85U17526</p> <p>Controls:</p> <p>Terminal box position: 6</p> <p>Frequency converter: None</p> <p>Others:</p> <p>Minimum efficiency index, MEI \geq: 0.70</p> <p>Net weight: 204 kg</p> <p>Gross weight: 247 kg</p> <p>Shipping volume: 0.611 m³</p> <p>Danish VVS No.: 386935220</p> <p>Finnish LVI No.: 4925615</p> <p>Thrust handling device (Yes/No): N</p>

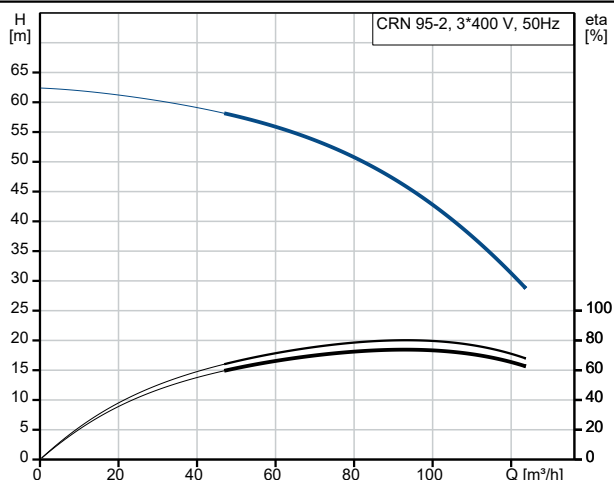
On request CRN 95-2 A-F-A-E-HQQE 50 Hz



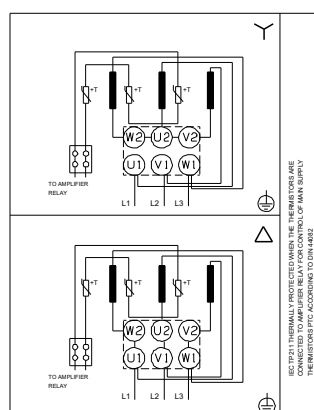
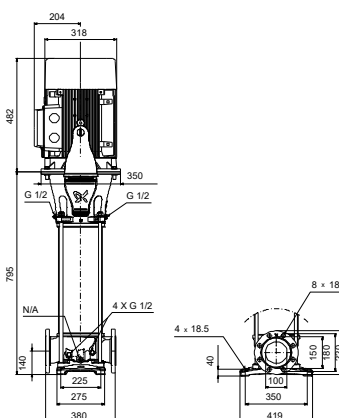
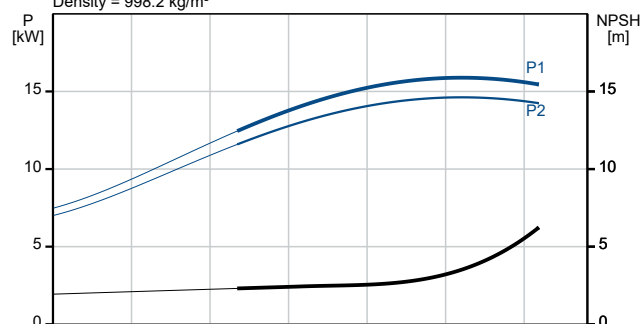
Pumped liquid = Water
Liquid temperature during operation = 20 °C
Density = 998.2 kg/m³



Description	Value
General information:	
Product name:	CRN 95-2 A-F-A-E-HQQE
Product No:	On request
EAN number:	On request
Technical:	
Pump speed on which pump data are based:	2956 rpm
Rated flow:	95 m ³ /h
Rated head:	45.7 m
Maximum head:	62.5 m
Stages:	2
Impellers:	2
Number of reduced-diameter impellers:	0
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Primary shaft seal:	HQQE
Code for shaft seal:	HQQE
Approvals:	CE, EAC, UKCA, SEPRO
Approvals for drinking water:	ACS
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
Cooling:	IC 411
Materials:	
Type key, code for materials:	A
Type key, code for rubber components. E = EPDM, V=FKM:	E
Base:	Stainless steel EN 1.4408 ASTM A351 CF8M
Impeller:	Stainless steel EN 1.4401 AISI 316
Material code:	A
Code for rubber:	E
Bearing:	WC/WC
Support bearing:	Graflon
Material certified according to:	European standards
Installation:	
Maximum ambient temperature:	60 °C
Maximum operating pressure:	16 bar
Max pressure at stated temp:	16 bar / 120 °C
Type key, code for pipework connection:	F
Type of connection:	DIN
Size of inlet connection:	DN 100
Size of outlet connection:	DN 100
Pressure rating for connection:	PN 16
Flange size for motor:	FF300
Terminal box position:	6
Connect code:	F
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-20 .. 120 °C
Selected liquid temperature:	20 °C
Density:	998.2 kg/m ³



Pumped liquid = Water
Liquid temperature during operation = 20 °C
Density = 998.2 kg/m³





Company name:

Created by:

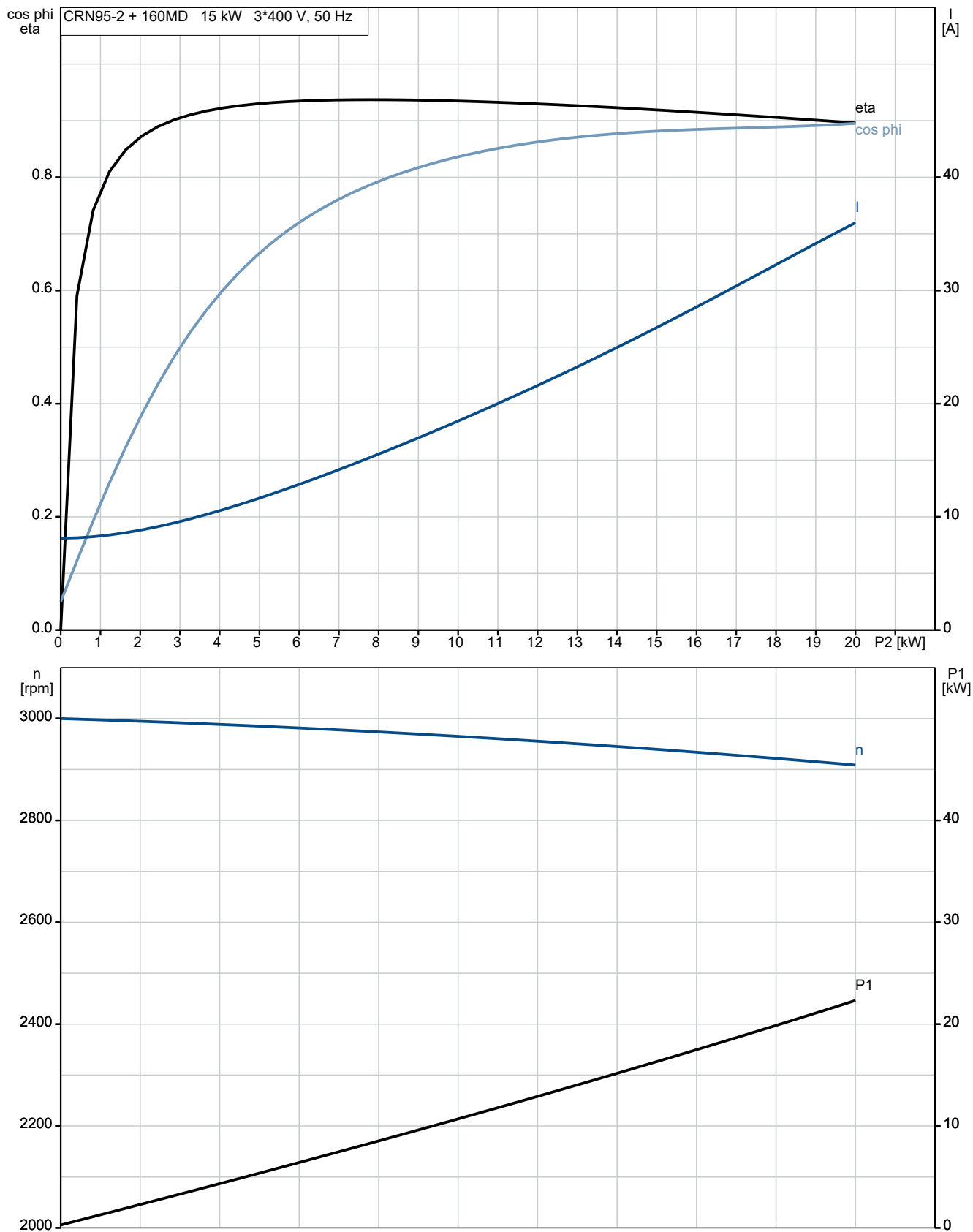
Phone:

Date:

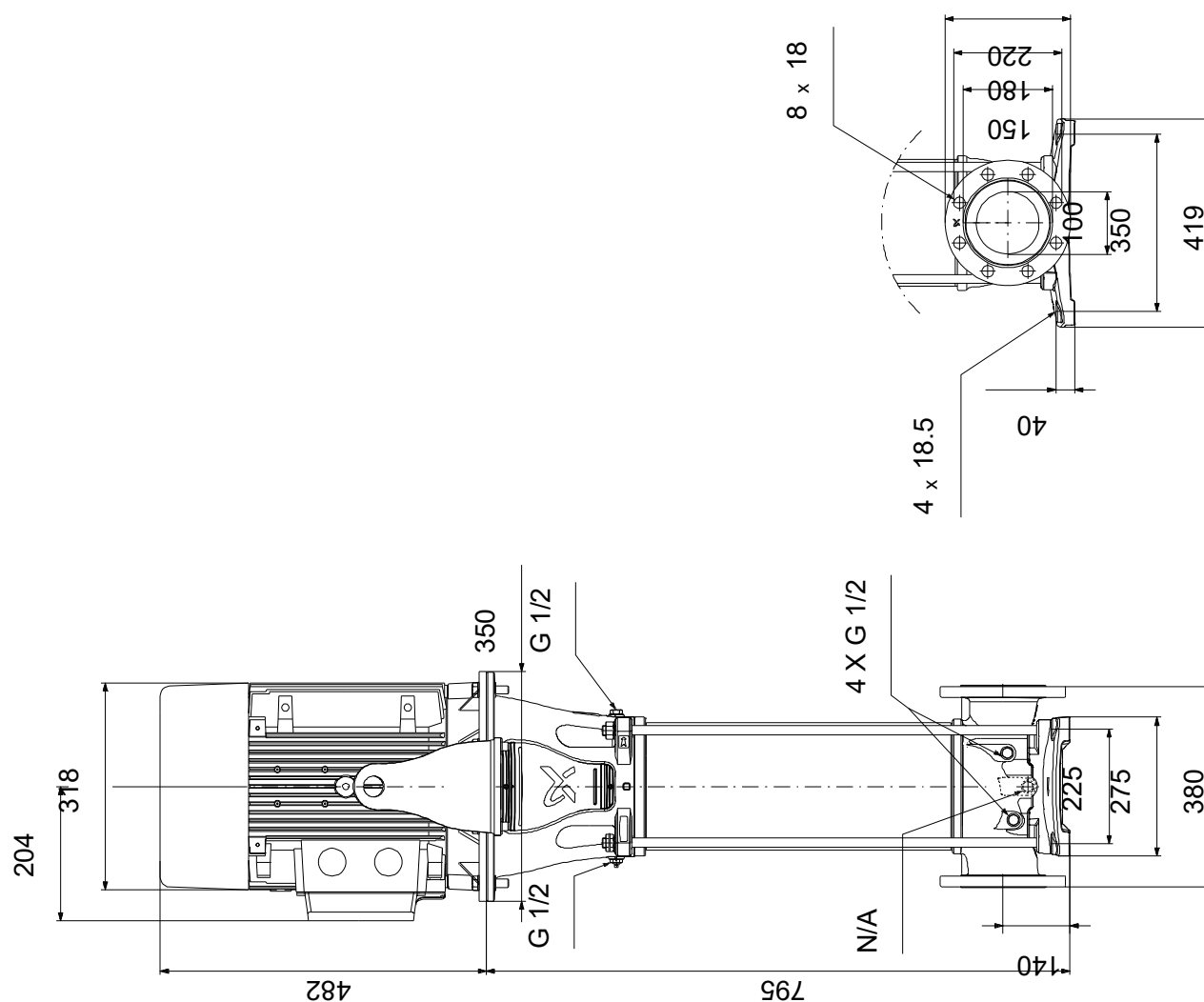
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Description	Value
Electrical data:	
Motor standard:	IEC
Motor type:	160MD
Rated power - P2:	15 kW
Power (P2) required by pump:	15 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-415D/660-690Y V
Rated current:	28,0-26,0/16,2-15,6 A
Starting current:	660-780 %
Cos phi - power factor:	0.89-0.87
Rated speed:	2930-2950 rpm
IE Efficiency class:	IE3
Motor efficiency at full load:	91.9 %
Motor efficiency at 3/4 load:	92.4-92.7 %
Motor efficiency at 1/2 load:	92.4-92.3 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Built-in motor protection:	PTC
Motor No:	85U17526
Controls:	
Terminal box position:	6
Frequency converter:	None
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	204 kg
Gross weight:	247 kg
Shipping volume:	0.611 m³
Danish VVS No.:	386935220
Finnish LVI No.:	4925615
Thrust handling device (Yes/No):	N

On request CRN 95-2 A-F-A-E-HQQE 50 Hz

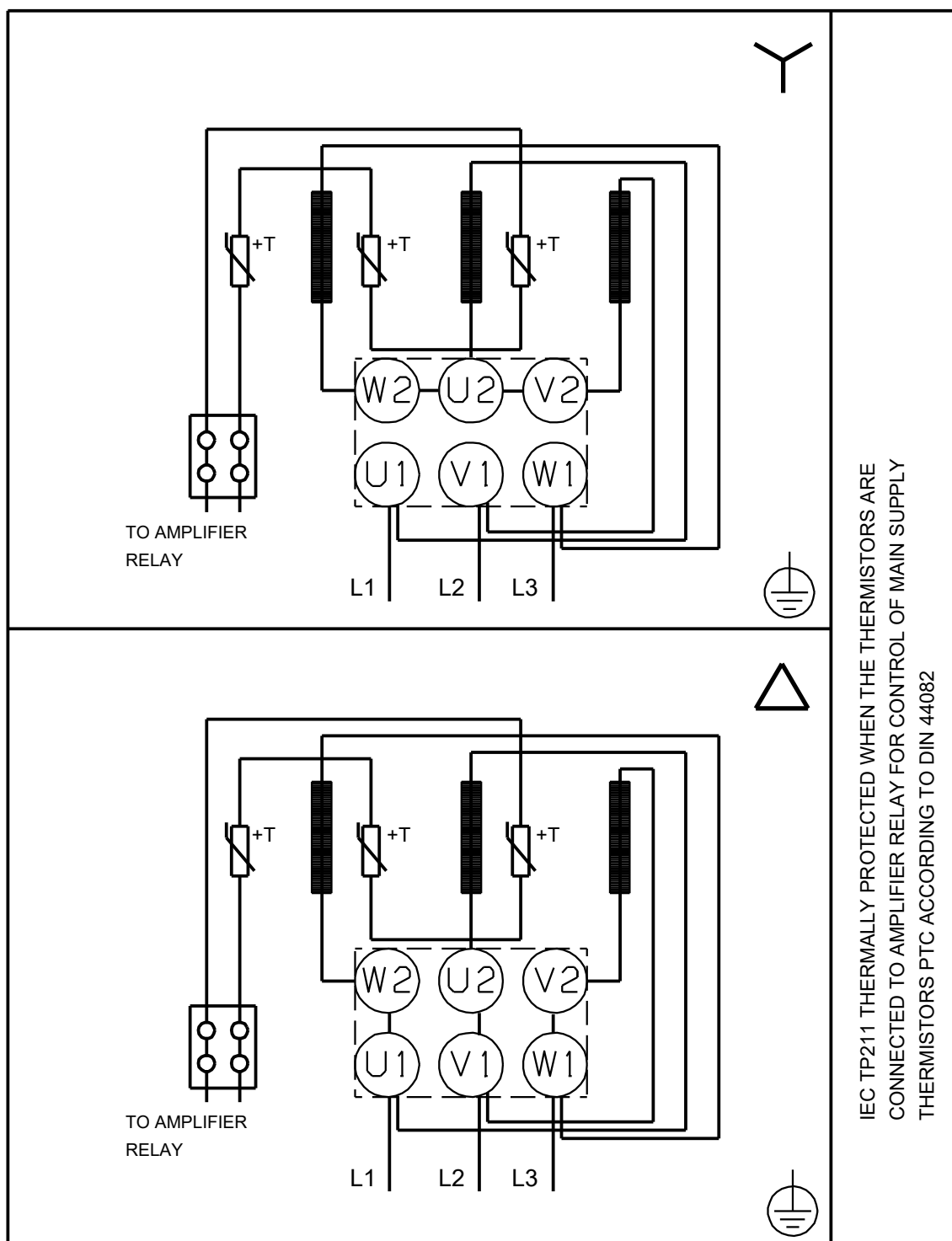


On request CRN 95-2 A-F-A-E-HQQE 50 Hz



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

On request CRN 95-2 A-F-A-E-HQQE 50 Hz



Note! All units are in [mm] unless others are stated.

