



END SUCTION FIRE PUMP SUBMITTAL



Fire Pump System

FLOW RATE(GPM)

750

PRESSURE(BAR)

9

ELECTRIC DRIVEN + DIESEL DRIVEN + JOCKEY PUMP

www.watexindustries.com

Fight Against Fire

	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:		Contractor Ref. No. -
Project Name:	NA	Contractor Job No. -

COMPANY PROFILE

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>

The background of the entire image is a photograph of two firefighters. They are wearing tan and green WATEX fire suits and helmets. The helmets have "WATEX" written on them in white. They are positioned in front of a large, intense fire with bright orange and yellow flames. The firefighter in the foreground is holding a hose.

Fight Against Fire

www.watexindustries.com





**WATEX Pumps Industries,
established in 2009 has since been
providing reputable firefighting
equipment that is consumer friendly
and at reasonable prices.**

We feel privileged to offer extensively engaging design, assembly as well as marketing high technology pumping systems and services to the ever-increasing infrastructural demands of UAE. WATEX Pumps supplies these products to authorities like DEWA, SEWA etc. as well as offering pumping solutions to local municipalities.

We strive to provide the latest technology and internationally-approved brands at affordable prices to all our customers. We believe in creating and maintaining consumer relationships in order to build mutual trust.



Our Vision

Thinking, Planning, Implementing & Focusing on high manufacturing Standards to prepare every place safe for you



Our Mission

To spread power of water against fire by manufacturing pumps with high quality & service for life according to global standards



ABOUT US

WATEX Pumps Industries is privileged to be associated with the ever-increasing infrastructural demands of UAE.

WATEX Pumps industries, established in 2009 has earned a reputation pumps and fire fighting products at competitive pricing with the added benefit of a customer friendly environment.

We strive to provide the latest technology and international approved brands at affordable prices to all our customers. Our core competency is our customer relationship. We have built a trust with our everyday consumer, which has provided us with regular business for over two decades.

Why Choose Us

We strongly believe in great customer service and work towards the same. In doing so, we offer extended warranties and special offers that are provide by our suppliers and product manufacturers. Our staff is educated about the products are available for any questions or concerns you might have. WATEX PUMPS INDUSTRIES can offer to you a wide range of different types of pumps to be suitable for all applications, this all is between your hand by following the lastest updates of Global standerds we can ensure the 100% qualified pumps.

It is our mission to effectively provide high quality pumping systems in the United Arab Emirates and contribute to a better quality of life.

OUR SERVICES

- Firefighting pumps
- Water pumps
- Industrial Pumps
- Firefighting equipment
- Installation
- Testing commissioning
- Maintenance services
- Repairing services
- AMC
- Supply of assembled control panel

Available In:

- UAE

Abu Dhabi, Dubai, Sharjah, Ajman,
Umm Al Quwain, Ras Al Khaimah and
Fujairah

- JORDAN

Amman



CEO's Message

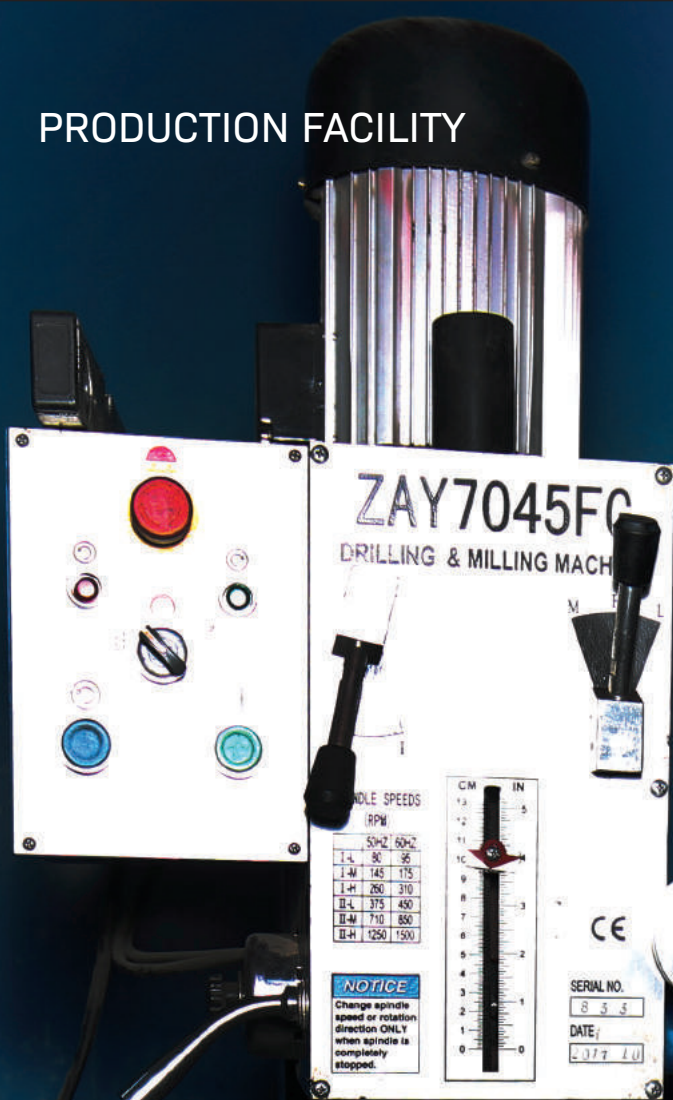
The company highly values its clients, viewing the clients of any company as vital to the company's success. It therefore places top priority on seeking out the most highly qualified and skilled employees to provide its clients needs on a continuous & regular basis.

We are highly proud to have been awarded UL, FM, LPCB & ISO certifications an internationally recognised standards that ensures services meet the needs of clients through an effective quality management system.

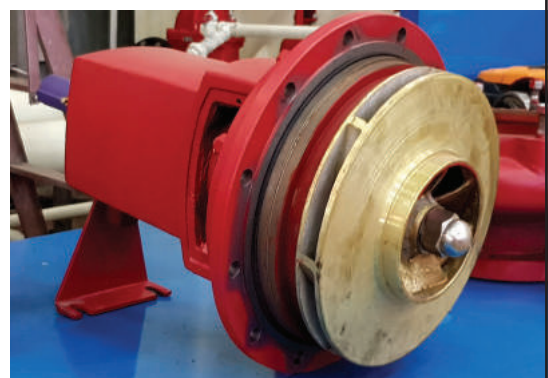
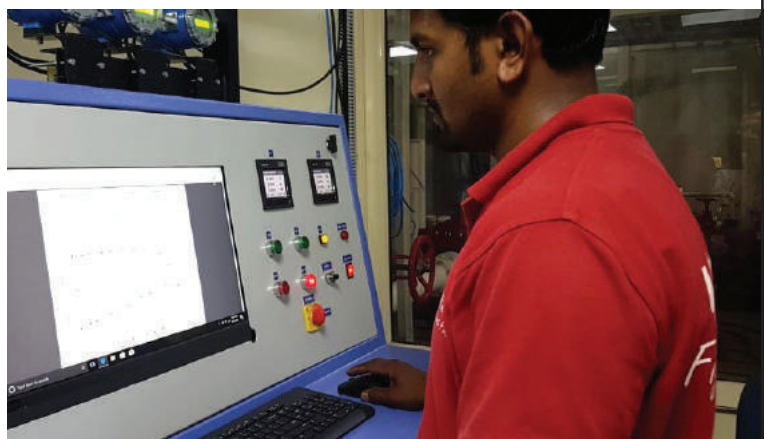
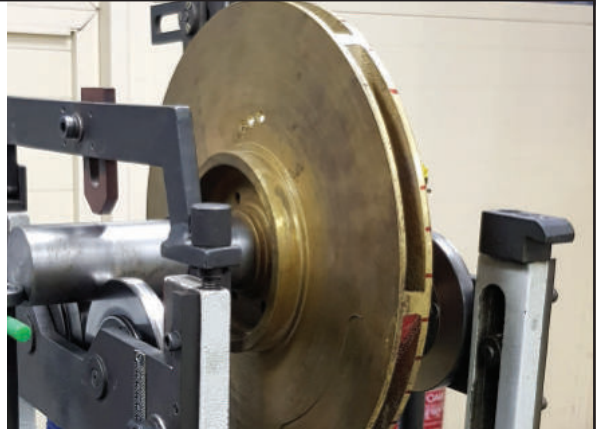
Eng. Nedal Mahmoud
MD



PRODUCTION FACILITY



**Design
Manufacturing
Testing**





Operation Test

Our pump is to be subjected to an operation test at rated speed under applicable requirements. Performance curve are plotted showing the efficiency, brake horsepower (KW) and total head developed at shutoff at rated capacity at 150 percent of rated capacity and at selected intermediate capacities exceeding 150 percent of rated capacity.

Impeller & Shaft Balancing Test

The sample impeller is to be installed in a calibrated dynamic balancing test apparatus. The impeller is to be evaluated in two correction planes as described in the standard for mechanical vibration -balance quality requirements of rigid rotors.



Hydrostatic Pressure Test

Readings are to be taken of the maximum impeller imbalance and the location of the imbalance in the impeller for each plane.

There still be no rupture or leakage through the castings at the test pressure to be suitable as our fire fighting product.

	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:		Contractor Ref. No. -
Project Name: NA		Contractor Job No. -

FIRE PUMP SET
TECHNICAL DATA SHEET

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>

DIESEL FIRE PUMP

<u>Diesel Pump:</u>	
Pump Approval	 
Make	WATEX- Made in UAE
Rated Flow	750 US GPM
Rated Pressure	9 BAR
Pump Type	End Suction
Pump Model	WE 100-260
Pump Speed	2950 RPM
Casing	CAST IRON
Impeller	BRONZE
Shaft	STAINLESS STEEL
Shaft Sleeves	ØBRONZE0

<u>Engine:-</u>	
Pump Approval	 
Make	KIRLOSKAR
Model	KFP4R-UF16R2
Cooling Method	Heat Exchange
Rated KW	116 HP
Speed	3000 RPM

<u>Accessories:</u>	
Approval:	
Fuel Tank:	Watex Tank 180US Gallons
Exhaust Silencer	4" Flanged
Battery	12 VDC

ELECTRIC FIRE PUMP

<u>Electric Pump:</u>	
Make	Watex - Made in UAE
Rated Flow	750 US GPM
Rated Pressure	9 BAR
Pump Type	End Suction
Pump Model	WE 100-260
Pump Speed	2950 RPM
Casing	CAST IRON
Impeller	BRONZE
Shaft	STAINLESS STEEL
Shaft Sleeves	BRONZE
Pump Approval	 

<u>Motor:</u>	
Make	MARATHON
Enclosure	NEEMA
Model	365TSTDCD4010
Voltage	415V, 50HZ, 3PH
Rating	100 HP
Speed	2965
Service Factor	1.15
Protection	CLASS F
Insulation	IP23
Motor Approval	

JOCKEY PUMP

<u>JOCKEY PUMP:</u>	
Make	Watex - UAE
Duty Flow	50GPM / 100M
Pump Type	Vertical Multistage
Pump Model	RV10-14
RPM	2900
Casing	Stainless Steel
Impeller	Stainless Steel
Suction Connection	1 ¹ / ₂ " Flanged to PN 25
Pump Approval	

Motor:	
Type	TEFC (IP 55)
Power Supply	3 Phase, 415Volt, 50 Hz / 5.5 KW

FIRE PUMP CONTROLLERS

Diesel Pump Controller:

Approval



Make

Tornatech

Model

GPD-12-220

Supply Voltage

208V-240V

Enclosure

NEMA 2

Mounting

Wall Mounted

Electric Pump Controller:

Approval



Make

Tornatech

Model

GPY-415\100\3\50

Rating

100 HP

Supply Voltage

3Ph, 415V, 50Hz

Enclosure

NEMA 2

Mounting

Floor

Jockey Pump Controller:

Approval



Make

Tornatech

Model

JP3-415\5.5\3\50

Rating

5.5 HP

Supply Voltage

3Ph, 415V, 50Hz

Enclosure

NEMA 2

Mounting

Wall Mounted

	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:	Contractor Ref. No. -	
Project Name: NA	Contractor Job No. -	

PERFORMANCE CURVE

0	Issued for approval	LL	PG		
Rev.	Description	Prepared	Checked	Approved	Date

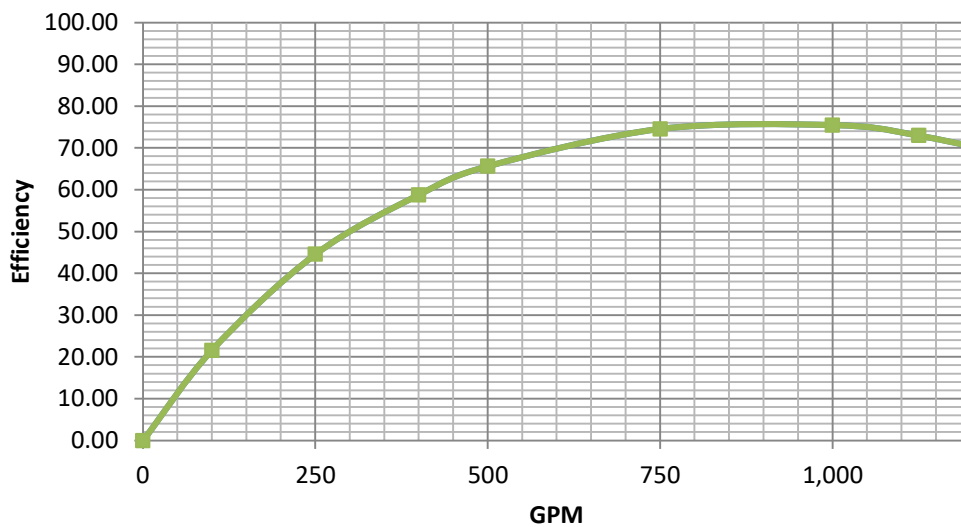
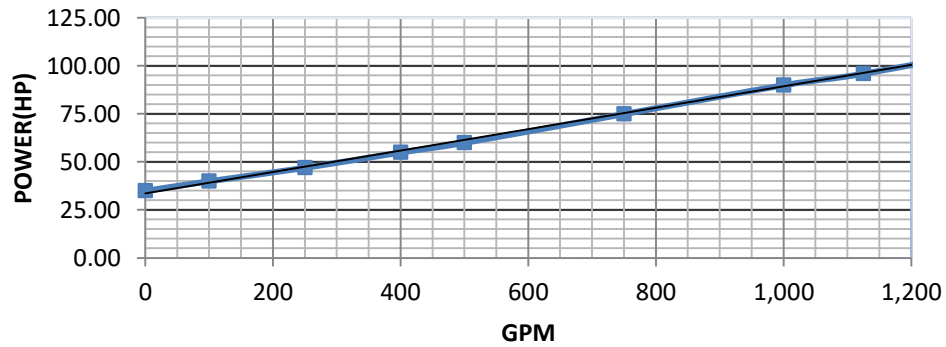
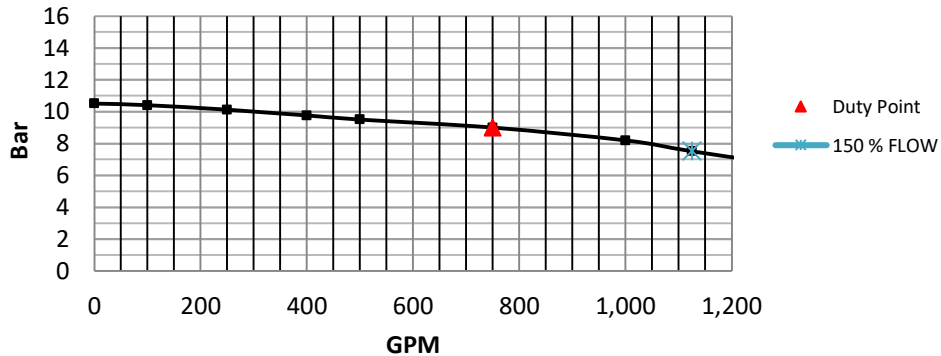


WATEX PUMP INDUSTRIES



Fire Pump Performance Curve

PUMP TYPE	END SUCTION	Sp. Gravity	1	-	RATED GPM	750
MODEL NAME	WE 100-260				RATED BAR	9
PUMP SPEED	2950 RPM					



BAR@150 FLOW

7.52

PASS

BAR@SHUTOFF

10.52

PASS

	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:		Contractor Ref. No. -
Project Name:	NA	Contractor Job No. -

CERTIFICATE

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>



Industrial License / رخصة صناعية

Regular License - رخصة عادية

License No. 73793 رقم الرخصة

ACCI No. 86697 رقم الغرفة

Register No. 76961 رقم السجل التجاري

License Details	Renew License / تجديد رخصة	تفاصيل الرخصة
Trade Name	WATEX PUMPS INDUSTRIES	الاسم التجاري واتكس لصناعة المضخات
Legal Form	Sole Establishment	الشكل القانوني مؤسسة فردية
Expire Date	2025-11-29 تاريخ الانتهاء	Issue Date 2015-12-07 تاريخ الاصدار

Role / الصفة	Passport / رقم الجواز	Nationality / الجنسية	Member Name / اسم صاحب التراخيص
مالك Owner - Proprietor	AA0248297	الإمارات العربية المتحدة United Arab Emirates- The UAE	امينه حسين عبدالله محمد المرزوقي AMINA HUSAIN ABDULLA MOHAMED ALMARZOOQI
مدير Manager - Director	RA103155	كمنولث دومينيكا Commonwealth of Dominica	محمود نضال محمود احمد MAHMOUD NEDAL MAHMOUD AHMAD

Activites	الانشطة
Pumps Manufacturing	صناعة المضخات

صندوق البريد P.O. Box	تاريخ انتهاء عقد الايجار Contract Expiry Date	اسم المؤجر / Lessor	العنوان / Address
33404	2025-07-09	نضال محمود خليل و حمزه نضال محمود و محمود نضال محمود	مصنع / مستودع / شبرا رقم 16، عجمان الصناعية 1 Warehouse / Factory / Shabra No. 16, Ajman Industrial 1

ملاحظات

Emp No. رقم الموظف	Voucher Date. 2024-10-17 تاريخ الايصال	Voucher No. 30204723 رقم الايصال
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Print Date 2024-10-18 تاريخ الطباعة



Industrial Production License		رخصة إنتاج صناعي
Record Number	IL017158	رقم القيد
Record Date	06/11/2018	تاريخ القيد
Expiry Date	25/09/2025	تاريخ الانتهاء
Trade Name	Watex Pumps Industries واتكس لصناعة المضخات	الإسم التجاري
Legal Form	Sole Proprietorship شركة الشخص الواحد	الشكل القانوني
Emirate	Ajman عجمان	الإمارة
City	Ajman عجمان	المدينة
Area	Ajman Industrial عجمان الصناعية	المنطقة
Phone Number	065275838	رقم الهاتف
Address	New Industrial Area AL Salam Street Shed #16	العنوان

License Owners		أصحاب الترخيص	
Nationality	الجنسية	Name	الإسم
United Arab Emirates	الإمارات العربية المتحدة	amina husain abdulla mohamed almarzooqi	امينة حسين عبدالله مجد المرزوقي
			#1

Activities		الأنشطة
pump manufacture		صناعة المضخات 1





CERTIFICATE OF REGISTRATION

This is to certify that the management system of

Watex Pumps Industries

Al Salam Street, Shed 16 , New Industrial Area 1, Ajman, United Arab Emirates.

Has been assessed by UCS and found to be in compliance with the requirements of

ISO 9001:2015 Quality Management System

This certificate is valid for the following scope:

Design, Manufacture, Assemble, Balancing, Lathing, Supply, Installation, Testing & Commissioning of Fire Pumps, Water Pumps, Fire & Water Control Panels, Fire Fighting System, Fire Alarm System & Accessories, Fire Hose Reels, Cabinets, Extinguishers, Valves & Doors.

Certificate Number: UCSQMS2311169

Registration Date:	Issue Date:	Expiry Date:	Recertification Date
09/11/2023	18/11/2023	17/11/2026	17/11/2026

Authorized Signatory

Universal Certification & Services FZE (UCS) is
Accredited by GCC Accreditation Center (GCC).

this certificate is applicable to yearly surveillance audit.

Validity of this certificate may be confirmed at
www.ucsiso.com



CERTIFICATE OF COMPLIANCE

Certificate Number EX27019
Report Reference EX27019-2018-11-05
Date 2022-February-25

Issued to: Watex Pumps Industries
New Industrial Area Amman St, Shed #16
Ajman AE

**This is to certify that
representative samples of**

CENTRIFUGAL FIRE PUMPS, END SUCTION

Models WE 50-260, WE 50-315, WE 65-260, WE-65-315,
WE 80-260, WE 80-315, WE 100-260, WE 100-315, WE
65-250, WE 80-250, WE 125-315

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/CAN/UL 448, Standard for Pumps for Fire-Protection
Service

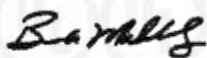
Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up
Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's
Follow-Up Services.

Look for the UL Certification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according
to the current UL requirements



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please
contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>





Certificate of Compliance

This certificate is issued for the following:

Centrifugal Fire Pumps (Horizontal, End Suction Type)

WE 50-260, WE 65-260, WE 80-250, WE 80-260, **WE 100-260** and WE 100-315

(see attached listing)

Prepared for:

Watex Pumps Industries
Amman Street, Shed #16
Ajman, 33404
United Arab Emirates

Manufactured at:

Watex Pumps Industries
Amman Street, Shed #16
Ajman, 33404
United Arab Emirates

FM Approvals Class: 1319 – “Centrifugal Fire Pumps, (Horizontal End-Suction Type)”, dated December, 2020

Approval Identification: PR464696

Approval Granted: 16 June 2023

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

A handwritten signature in black ink, appearing to read 'D. B. Fuller', written over a horizontal line.

David B Fuller
VP - Manager of Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group





Certificate of Compliance

Product	Rated Capacity, (gal/min)	Rated Capacity, (dm ³ /min)	Rated Net Head at Rated Capacity, psi	Rated Net Head at Rated Capacity, kPa	Rated Speed, r/min	Suction Inlet, dia., in.	Discharge Outlet, dia., in.	Stage(s)
WE 50-260	50	190	105-134	725-925	2950	2-1/2	2	1
WE 65-260	50	190	104-134	720-925	2950	3	2-1/2	1
WE 65-260	100	380	105-134	725-925	2950	3	2-1/2	1
WE 65-260	150	570	105-134	725-925	2950	3	2-1/2	1
WE 65-260	200	755	105-134	720-920	2950	3	2-1/2	1
WE 65-260	250	945	105-134	720-925	2950	3	2-1/2	1
WE 65-260	300	1135	103-134	710-925	2950	3	2-1/2	1
WE 65-260	400	1515	96-132	660-910	2950	3	2-1/2	1
WE 65-260	450	1705	93-130	640-900	2950	3	2-1/2	1
WE 65-260	500	1895	89-127	615-875	2950	3	2-1/2	1
WE 80-250	200	755	107-147	735-1010	3560	4	3	1
WE 80-250	250	945	106-147	735-1010	3560	4	3	1
WE 80-250	300	1135	107-147	740-1015	3560	4	3	1
WE 80-250	400	1515	107-148	740-1020	3560	4	3	1
WE 80-250	450	1705	105-148	725-1015	3560	4	3	1
WE 80-250	500	1895	105-148	725-1015	3560	4	3	1
WE 80-250	750	2840	102-148	700-1020	3560	4	3	1
WE 80-260	200	755	100-131	690-905	2950	4	3	1
WE 80-260	250	945	101-131	695-905	2950	4	3	1
WE 80-260	300	1135	101-132	695-910	2950	4	3	1
WE 80-260	400	1515	97-132	685-910	2950	4	3	1
WE 80-260	450	1705	99-130	675-895	2950	4	3	1
WE 80-260	500	1895	97-130	670-895	2950	4	3	1
WE 80-260	750	2840	125	855	2950	4	3	1
WE 100-260	200	755	102-132	705-910	2950	5	4	1
WE 100-260	250	945	102-132	705-910	2950	5	4	1
WE 100-260	300	1135	102-132	705-910	2950	5	4	1
WE 100-260	400	1515	102-132	705-910	2950	5	4	1
WE 100-260	450	1705	102-132	705-910	2950	5	4	1





Certificate of Compliance

Product	Rated Capacity, (gal/min)	Rated Capacity, (dm ³ /min)	Rated Net Head at Rated Capacity, psi	Rated Net Head at Rated Capacity, kPa	Rated Speed, r/min	Suction Inlet, dia., in.	Discharge Outlet, dia., in.	Stage(s)
WE 100-260	500	1895	102-132	705-910	2950	5	4	1
WE 100-260	750	2840	103-132	710-910	2950	5	4	1
WE 100-260	1000	3780	98-133	675-915	2950	5	4	1
WE 100-315	200	755	159-218	1095-1505	2950	5	4	1
WE 100-315	250	945	159-218	1095-1505	2950	5	4	1
WE 100-315	300	1135	160-218	1100-1500	2950	5	4	1
WE 100-315	400	1515	160-216	1100-1490	2950	5	4	1
WE 100-315	450	1705	160-216	1100-1490	2950	5	4	1
WE 100-315	500	1895	157-216	1085-1490	2950	5	4	1
WE 100-315	750	2840	150-210	1035-1450	2950	5	4	1
WE 100-315	1000	3780	139-202	955-1390	2950	5	4	1



Member of the FM Global Group

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2208408-2
Report Reference EX15277-20170627
Date 2-Jan-2023

Issued to: KIRLOSKAR OIL ENGINES LTD
Plot D/1, Five Star MIDC, Kagal
Hatkangale Industrial Area
Vill : Talandage Kolhapur, Maharashtra 416202
India

This is to certify that representative samples of QYLU - Internal-combustion Engines for Driving Stationary Fire Pumps

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.

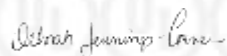
Standard(s) for Safety: UL 1247 , Edition: 5, Issue Date: 2007-5-31 , Revision Date: 2020-8-12

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.


Deborah Jennings-Conner, VP Regulatory Services
UL LLC



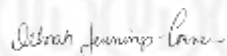
Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2208408-2
Report Reference EX15277-20170627
Date 2-Jan-2023

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
KFP4K-UF17R1	DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES
KFP4R-UF05	DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES
KFP4R-UF07	DIESEL ENGINES RATED AT SPECIFIC SPEEDS
KFP4R-UF08	DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES
KFP4R-UF15	DIESEL ENGINES RATED AT SPECIFIC SPEEDS
KFP4R-UF16R1	DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES
KFP4R-UF16R2	DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES
KFP6K-UF27R1	DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES
KFP6R-UF25	DIESEL ENGINES RATED AT SPECIFIC SPEEDS
KFP6R-UF26R1	DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES
KFP6R-UF26R2	DIESEL ENGINES RATED FOR USE WITHIN SPEED RANGES
KFP6S-UF35	DIESEL ENGINES RATED AT SPECIFIC SPEEDS


Deborah Jennings-Conner, VP Regulatory Services
UL LLC



Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



Certificate of Compliance

This certificate is issued for the following:

Diesel Engines for Fire Pump Drivers

Prepared for:

Kirloskar Oil Engines Ltd
Laxmanrao Kirloskar Road
Khadki Pune, 411 003
India

Manufactured at:

Kirloskar Oil Engines Ltd
Plot D/1, Five Star MIDC
Kagal Hatkangale Industrial Area
Khadki Village of Talandge, Kolhapur
Maharashtra, 416202 India

FM Approvals Class: 1333 (December 2020)

Approval Identification: PR463823

Approval Granted: 10 April 2023

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

David Fuller
VP - Manager of Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group



Certificate of Compliance

Product	Listing Country	Rated Power, hp	Rated Power, kW	Rated Speed, r/min
KFP4R-UF05	India	57	42	2800
KFP4R-UF05	India	56	41.7	2900
KFP4R-UF05	India	55	41	3000
KFP4R-FM05D1	India	43	32	2900
KFP4R-UF08	India	77	57	2800
KFP4R-UF08	India	77	57	2900
KFP4R-UF08	India	76	56	3000
KFP4R-UF16R1	India	105	78	2800
KFP4R-UF16R1	India	128	95	2900
KFP4R-UF16R1	India	152	113	3000
KFP4R-UF16R2	India	146	108	2800
KFP4R-UF16R2	India	131	97	2900
KFP4R-UF16R2	India	116	86	3000
KFP6R-UF26R1	India	251	187	2800
KFP6R-UF26R1	India	249	185	2900
KFP6R-UF26R1	India	247	184	3000
KFP6R-UF26R2	India	164	122	2800
KFP6R-UF26R2	India	191	142	2900
KFP6R-UF26R2	India	217	161	3000
KFP4R-UF07	India	77	57	2600
KFP4R-UF07	India	74	55	2350
KFP4R-UF07	India	74	55	2200
KFP4R-UF07	India	70	52	2100
KFP4R-UF07	India	62	46	1760
KFP4R-UF15	India	151	112	2600
KFP4R-UF15	India	143	106	2350
KFP4R-UF15	India	117	87	2200
KFP4R-UF15	India	111	83	2100
KFP4R-UF15	India	108	80	1760
KFP6R-UF25	India	225	168	2600
KFP6R-UF25	India	203	151	2350
KFP6R-UF25	India	196	146	2200
KFP6R-UF25	India	191	142	2100
KFP6R-UF25	India	169	126	1760
KFP6S-UF35	India	330	246	2350





Certificate of Compliance

Product	Listing Country	Rated Power, hp	Rated Power, kW	Rated Speed, r/min
KFP6S-UF35	India	332	247	2200
KFP6S-UF35	India	336	250	2100
KFP6S-UF35	India	288	215	1760
KFP6K-UF27R1	India	296	221	3000
KFP6K-UF27R1	India	301	224	2900
KFP4K-UF17R1	India	176	131	3000
KFP4K-UF17R1	India	183	137	2800



CERTIFICATE OF COMPLIANCE

Certificate Number 20161116-EX5190
Report Reference EX5190-20161116
Issue Date 2016-NOVEMBER-16

Issued to: Regal Beloit America Inc
1946 W Cook Rd
Fort Wayne IN 46818

**This is to certify that
representative samples of** FIRE PUMP MOTORS
Refer to Addendum Page for Models

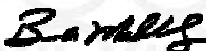
Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1004-1, Rotating Electrical Machines – General
Requirements
UL 1004-5, Safety for Fire Pump Motors

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's
Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program
UL LLC

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contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



CERTIFICATE OF COMPLIANCE

Certificate Number 20161116-EX5190
Report Reference EX5190-20161116
Issue Date 2016-NOVEMBER-16

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Fire Pump Motors with ODP (Open Drip Proof) enclosures, and NEMA Frame sizes 143T, 145T, 182T, 184T, 213T, 215T, 254T, 256T, 284T, 286T, 324T, 326T, 364T, 365T, 404T, 405T, 444T, 445T, 447T, and 449T.

Model number may or may not begin with 0 through 9 or any Letter A through Z; may be followed by a letter A through N; followed by 143, 145, 182, 184, 213, 215, 254, 256, 284, , , 286, , , 324, 326, 364, , , 365, , , 404, , , 405, , , 444, , , 445, , , 447, , , or 449; followed by the letter T or letters TS; followed by the Letter T; followed by one Character D; followed by one Letter B or C or ; may be followed by any letter A through Z; followed by one to five Digits 0 through 99999; which may or may not be followed by any Letter A through Z; which may or may not be followed by Letter A through Z; which may or may not be followed by the Letter R and one to three Digits 1 through 999; all followed by Letter H.

Alternate Model number - Model number may or may not begin with 0 through 9 or any Letter A through Z; may be followed by any Letter A through N; followed by 143, 145, 182, 184, 213, 215, 254, 256, 284, 286, 324, 326, 364, 365, 404, 405, 444, 445, 447, or 449; followed by the letter T or letters TS; followed by the Letter T; followed by one Character D; followed by one Letter B or C; may be followed by any letter A through Z; followed by one to five Digits 0 through 99999; which may or may not be followed by the addition of a dash followed by a one to six digit number; which may or may not be followed by any Letter A through Z; which may or may not be followed by Letter A through Z; all followed by letter H.

Alternate Model number – Model PRODUCT which may be followed by 0 through 9 or A through Z; may be followed by 0 through 9 or A through Z; followed by LM; followed by a five or six digit number; may or may not be followed by A through Z; may or may not be followed by A through Z; may or may not be followed by R; may or may not be followed by 0 through 999 or one or two letters A through Z; all followed by letter H.

Alternate Model number – Model P followed by E, J, L, M, or N; followed by 0 through 9; followed by two letters AA through ZZ; followed by two digits 00 through 99; followed by any letter A through Z.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number 20140708-EX3971
Report Reference EX3971-20061111
Issue Date 2014-JULY-08

Issued to:

TORNATECH INC

132

7075 PLACE ROBERT-JONCAS
ST LAURENT

QC H4M 2Z2 CANADA

**This is to certify that
representative samples of**

PUMP CONTROLLERS, FIRE

Fire Pump Controllers, Models GPL, GPA, GPP, GPR,
GPS, GPV, GPY and GPW.

Transfer Switches, Models GLU and GPU

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

See Addendum Page

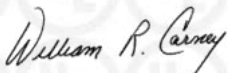
Additional Information:

See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers:  the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number 20140708-EX3971
Report Reference EX3971-20030507
Issue Date 2014-JULY-08

Issued to:

TORNATECH INC

132

7075 PLACE ROBERT-JONCAS
ST LAURENT

QC H4M 2Z2 CANADA

**This is to certify that
representative samples of**

PUMP CONTROLLERS, FIRE

GPD Series controller for engine-driven centrifugal fire
pumps

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

UL218, Fire Pump Controllers
UL508, Industrial Control Equipment
CSA C22.2 No. 263-09, Fire Pump Controllers
CAN/CSA C22.2 No. 14-13, Industrial Control Equipment
NFPA20 (2010), Installation of Stationary Pumps for Fire
Protection

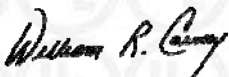
Additional Information:

See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers:  the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number 20140708-E158750
Report Reference E158750-19940223
Issue Date 2014-JULY-08

Issued to:

TORNATECH INC

132

7075 PLACE ROBERT-JONCAS
ST LAURENT

QC H4M 2Z2 CANADA

**This is to certify that
representative samples of**

INDUSTRIAL CONTROL PANELS

Industrial control panels. Includes jockey pump controller
Model JP remote alarm panel for electric fire pump
controllers Model APE, remote alarm panel for diesel
engine fire pump controllers Model APD, and low pressure
shutdown panel Model APL. These models are not
exhaustive.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

UL 508, Standard for Industrial Control Panels
CSA C22.2 NO. 14, Industrial Control Equipment

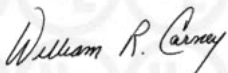
Additional Information:

See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers:  the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

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Certificate of Compliance

This certificate is issued for the following:

**Controllers for Electric Motor Driven and
Diesel Engine Driven Fire Pumps**

**Model GPx Series electric motor driven and
Model GPD diesel engine driven fire pump controllers
manufactured at Tornatech FZE in Dubai, UAE**

Prepared for:

TornaTech Inc.
7075 Pl Robert-Joncas, #132
St Laurent, QC H4M 2Z2
Canada

Manufactured at:

TornaTech FZE
Warehouse CC-4 near R/A 08
P.O. Box 18435, Jebel Ali
Dubai, United Arab Emirates

FM Approvals Class: 1321/1323

Approval Identification: 0003052698

Approval Granted: June 24, 2014

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

A handwritten signature in black ink, appearing to read 'Richard B. Dunne', is written over a horizontal line.

Richard B. Dunne
Manager, Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group

CERTIFICATE OF COMPLIANCE

Certificate Number 20190514-MH63509
Report Reference MH63509-20190507
Issue Date 2019-MAY-14

Issued to: Watex Pumps Industries
New Industrial Area Amman St, Shed 16
Ajman UNITED ARAB EMIRATES

**This certificate confirms that
representative samples of**

ABOVEGROUND FLAMMABLE-LIQUID TANKS

Aboveground tanks for flammable and combustible liquids with or without supports.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 142, Steel Aboveground Tanks for Flammable and Combustible Liquids

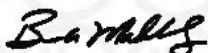
Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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Fire Pump Flowmeter Systems

Fire pump flowmeters may be used to determine the discharge of a fire pump. Water from the pump is temporarily directed through the flowmeter, then to atmospheric drain or back to the water supply source.

These flowmeters are calibrated to measure the fire pump output directly in gal/min (dm³/min). A control valve is provided in the flowmeter line. This valve must be completely closed, except when the flowmeter is in use. Unless otherwise noted in the listing, these systems have 175 psi (1205 kPa) rated working pressure.

Fire Pump Flowmeter Systems

Pump Rating, gal/min (dm³/min)	Nominal Meter Line Size in.	Model Designation	
		Venturi (1)	Orifice (2)
25 (95)	1 1/4	GV-25-1 1/4	-
50 (190)	2	GV-50-2	-
100 (380)	2 1/2	GV-100-2 1/2	GO-100-2 1/2
150 (570)	3	GV-150-3	GO-150-3
200 (755)	3, 4	GV-200-3, 4	GO-200-3, 4
250 (945)	4, 5	GV-250-4, 5	GO-250-4, 5
300 (1135)	4	GV-300-4	GO-300-4
400 (1515)	4, 5	GV-400-4, 5	GO-400-4, 5
450 (1705)	4, 5	GV-450-4, 5	GO-450-4, 5
500 (1895)	5, 6	GV-500-5, 6	GO-500-5, 6
750 (2840)	5, 6	GV-750-5, 6	GO-750-5, 6
1000 (3785)	6, 8	GV-1000-6, 8	GO-1000-6, 8
1250 (4730)	6, 8	GV-1250-6, 8	GO-1250-6, 8
1500 (5680)	8, 10	GV-1500-8, 10	GO-1500-8, 10
2000 (7570)	8, 10	GV-2000-8, 10	GO-2000-8, 10
2500 (9465)	8, 10	GV-2500-8, 10	GO-2500-8, 10
3000 (11 355)	8, 10	GV-3000-8, 10	GO-3000-8, 10
3500 (13 245)	10, 12	GV-3500-10, 12	GO-3500-10, 12

4000 (15 140)	10, 12	GV-4000-10, 12	GO-4000-10, 12
4500 (17 035)	10, 12	GV-4500-10, 12	GO-4500-10, 12
5000 (18 925)	10, 12	GV-5000-10, 12	GO-5000-10, 12

Each system consists of a Gerand Venturi (GV) or a Gerand Orifice (GO), a differential meter reading in gpm or dm³ /min and associated fittings.

GV systems can be equipped with either a 4 1/2 in. dial meter (Gerand Model K or Gerand Model G) or a 6 in. dial meter (Gerand Model M). GO systems are only available with a 4 1/2 in. dial meter (Gerand Model I).

Permanent installations (wall or panel mount) or portable installations are available on all systems. Rated working pressure is 500 psi (3445 kPa) except that:

GV systems with Model M dial meter have a rated working pressure of 175 psi (1205 kPa).

GV systems with Model K or Model G dial meter and Class 150 flanges have a rated working pressure of 275 psi (1905 kPa).

The following end-connection styles are available:

Venturi (1)VS. Brass screw ends, 1 1/4 through 2 1/2 in.

Venturi (1)VW-B. Steel butt-welded ends, 2 1/2 through 12 in.

Venturi (1)V-GE. Steel grooved ends, 2 1/2 through 12 in.

Venturi (1)VW-F. Steel flanged ends, 2 1/2 through 12 in. Class 150 flanges rated at 275 psi (1905 kPa). Class 300 flanges rated at 500 psi (3445 kPa).

Orifice (2). Steel socket-welded ends with adaptability for flanging, 2 1/2 through 12 in.

Company Name:	Quest Engineering dba Gerand Engineering
Company Address:	2300 Edgewood Avenue South, St. Louis Park, Minnesota 55426, USA
Company Website:	http://gerandengineeringco.com
New/Updated Product Listing:	Yes
Listing Country:	United States of America
Certification Type:	FM Approved
Primary Class of Work:	1046-Fire Pump Flow Meters

	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:		Contractor Ref. No. -
Project Name: NA		Contractor Job No. -

FIRE PUMP HEAD

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>

End Suction Fire Pump



Series of WE (WATEX End Suction) fire pumps are serialization products as Horizontal Single Stage, Single Flow Volute Casing Centrifugal pumps with axial Inlet which designed according to NFPA 20 for fire fighting Applications.

Models

- WE 32 - 200 • WE 32 - 260 • WE 50 - 260 • WE 50 - 315
- WE 65 - 260 • WE 65 - 315 • WE 80 - 260 • WE 80 - 315
- WE 100 - 260 • WE 100 - 315 • WE 125 - 315

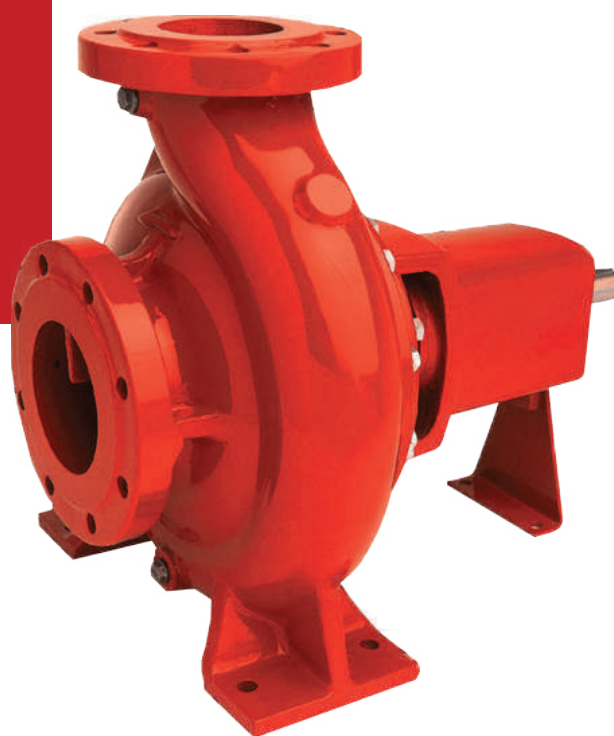
End Suction Type

Rated Flow - Q up to 1000 GPM

Pressure - P up to 229psi

Temperature - T up to 105 C

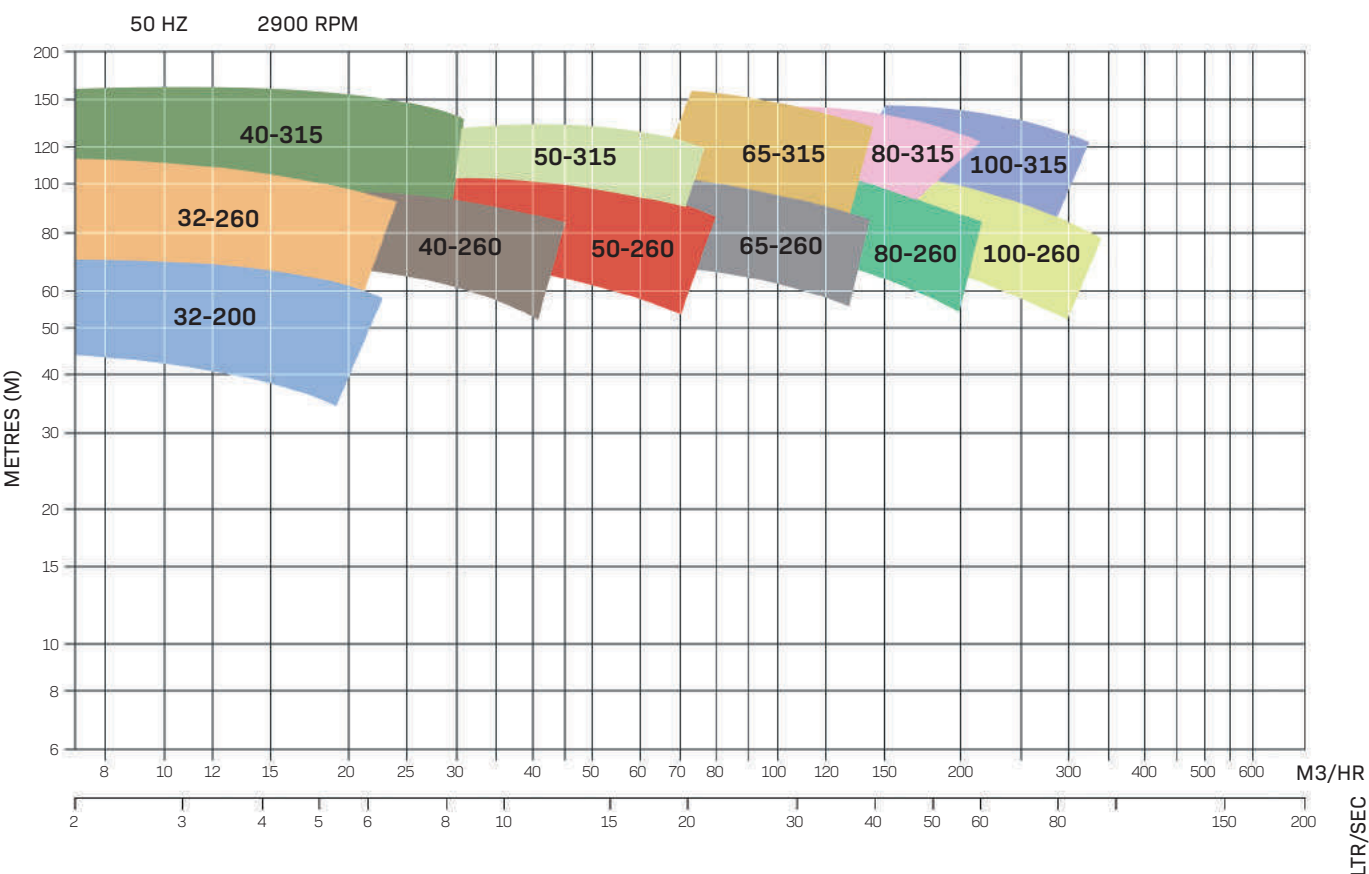
Shaft Sealing Soft Packing



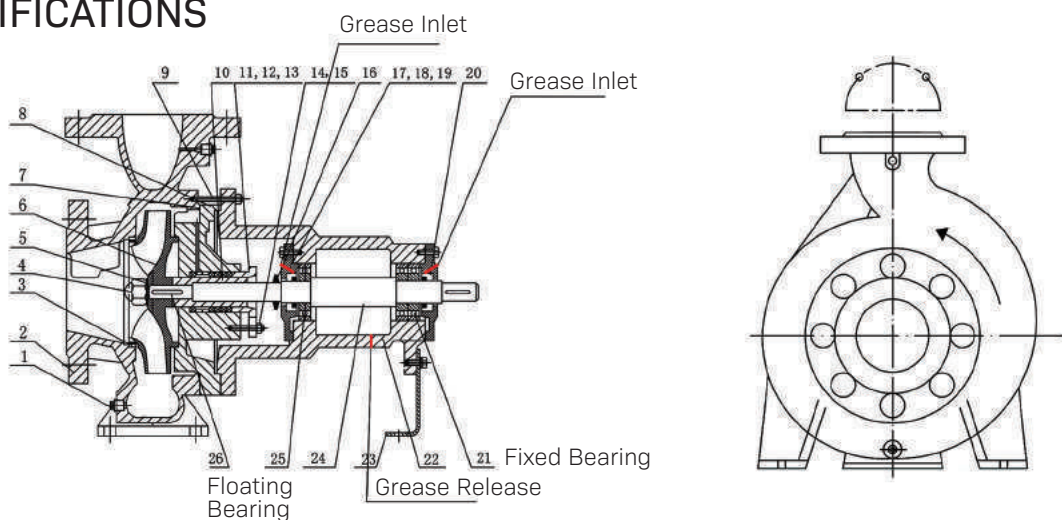
Features

- Designing applies to NFPA20 Standards and specification in accordance with UL448 and FM approval
- Max shaft power point is attained by hydraulic performance incited of pump cavitation, which truly qualified for NFPA20 requirements, as well as ensure safety and reliability of pump units
- Adaptable of electric motor and combustion engine as prime mover
- Varied revolong speed or performance pumps can be supplied according to user's requests
- Max shaft power point is closed to the point of 150% rated capacitym therefore the power and cost are low
- Pressure at shut off point small which require lower pressure rating of fittings or accessories, save cost for whole unit
- Single model covers wide performance range, no need to purchase different models with benefits clients by reducing inventory and shorten delivery

PRODUCT RANGE



PRODUCT SPECIFICATIONS



No	Name	Material	GB	Size
1	Casing	Ductile Cast Iron	GGG40	
2	Casing Wear Ring	Brass	C86500	175x160x15
3	Impeller Nut	Stainless Steel	SS304	M24X2
4	Washer	Stainless Steel	SS304	
5	Impeller	Bronze/ SS	C86300/ AISI304	
6	Casing Cover	Ductile Cast Iron	GGG40	
7	Bolts	Stainless Steel	SS304	M12x35
8	Bearing	Steel		SKF 47309BEP
9	Shaft	Steel		

	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:		Contractor Ref. No. -
Project Name: NA		Contractor Job No. -

DIESEL ENGINE &
CONTROLLER

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>



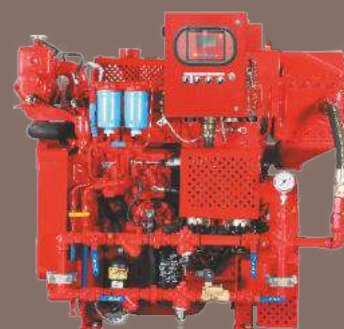
Enriching Lives

Never compromise on safety...

Kirloskar
Diesel
Engines for
Fire Pumps



Unmatched
Quality and
Reliability



KIRLOSKAR OIL ENGINES LIMITED

A Rich Tradition of Engineering Excellence

The Kirloskar Legacy stands for a tradition of excellence for more than a century now. A personification of patronizing values and visionary goals, the name 'Kirloskar' is engraved on numerous nation-building milestones. Today, the Kirloskar Group, with a turnover exceeding USD 1.6 billion, stands as an enormous industrial conglomerate.

Incorporated in 1946, Kirloskar Oil Engines Limited (KOEL) is the flagship company of the Kirloskar group. We have four state-of-the-art manufacturing units in India that offer world-class service.

The company has a sizable presence in international markets, with offices in the USA, UAE., South Africa, Kenya and representatives in Indonesia, Vietnam and Nigeria. KOEL also has a strong distribution network throughout the Middle East and Africa.

Today KOEL is an acknowledged leader in the manufacturing of diesel engines, agricultural pumpsets, power tillers and generating sets. The company currently ranks among the leading manufacturers of diesel engines, which are manufactured and sold under Kirloskar Brand. Kirloskar engines cover a power envelop span ranging from 4 hp to 1250 hp in air-cooled and liquid cooled versions.

KOEL manufactures over 225,000 engines annually, which are used in over 100 different applications. These applications are found in sectors such as agriculture, power generation, construction, material handling, earth-moving, mining, offshore, fluid handling and agro-industrial market segments that include defence and marine applications. KOEL exports to over 60 countries worldwide.

Kirloskar Engines for Fire Pumps

Reliability of the fire protection systems is a major concern for insurance companies and end users. A prime contributor to the reliability of fire pumps is a dependable driver.

With over sixty years of experience in engine designing and manufacturing, Kirloskar Oil Engines Ltd. has the capability to offer dependable diesel engines for critical applications. The company's work with OEMs, contractors, consultants and end users over the years, has given it a comprehensive understanding of the need for cost effective and reliable diesel engines for fire pump packages.

Kirloskar KFP series engines have been designed to meet the stringent requirements of Factory Mutual (FM), Underwriters Laboratories (UL) as well as NFPA 20 standards. KFP series engines are currently available in 37 different ratings approved by FM and listed by UL. These stringent approval criteria cover performance and functional requirements, examination of manufacturing facility, quarterly audits of quality assurance procedures and a follow up programme to verify approved products' conformance.



Salient Features of KFP Series

- Heat exchanger for engine coolant
- Liquid cooled charge air cooler for after-cooled engine models
- FM approved cooling loop with raw water solenoid, flow switch and manual valves in main & emergency lines as per NFPA20 requirements
- Engine mounted instrument panel duly isolated from vibration
- Junction box integral with instrument panel for AC wiring
- Interconnection to main controller
- Engine coolant heater
- Starter Contactors (DC)
- Splitter for splitting the charging current coming from alternator to dual battery
- Heat shield on exhaust manifold, turbo charger & CAC pipes
- Fire resistant flexible supply & return lines in fuel connections
- UL listed drive shafts

Optional Accessories offered with Kirloskar KFP range for Fire Pump OEMs

- Drive Shaft Assembly: Listed or Non-Listed along with Drive Shaft Guard
- Fabricated Base Frames customized to suite various Engine-Pump combinations for Drop-in assembly of pumps
- Engine Base frames for VT pump installations
- Torsional Couplings with free service of TV analysis report
- Battery kits
- Weather Proof / Sound Attenuated Enclosures
- Standard Tool Kit
- Engine Maintenance Kits



FM Approved & UL Listed Engine Ratings

Engine Model	FM APPROVED & UL LISTED RATINGS							
	1760 RPM	2100 RPM	2200 RPM	2350 RPM	2600 RPM	2800 RPM	2900 RPM	3000 RPM
	HP	HP	HP	HP	HP	HP	HP	HP
KFP4R-FM05D1 Naturally Aspirated							43*	
KFP4R-UF05 Naturally Aspirated						57	56	55
KFP4R-UF07 Naturally Aspirated	62	70	74	74	77			
KFP4R-UF08 Naturally Aspirated						77	77	76
KFP4R-UF15 Turbocharged After cooled	108	111	117	143	151			
KFP4R-UF16R1 Turbocharged After cooled						105	128	152
KFP4R-UF16R2 Turbocharged After cooled						146	131	116
KFP6R-UF25 Turbocharged After cooled	169	191	196	203	225			
KFP6R-UF26R1 Turbocharged After cooled						251	249	247
KFP6R-UF26R2 Turbo-charged						164	191	217
KFP6S-UF35 Turbocharged After cooled	288	336	332	330				

*FM only rating

Values are rounded off from the decimals to the nearest whole value

Above mentioned Engine Ratings are as per NFPA 20, UL & FM approved guidelines and are applicable for stationary emergency standby fire pump service alone. Engines are rated at Standard site conditions with Temperature of 25°C, Altitude of 91 m (300 ft) above sea level and humidity of 60%. Engines are subjected to deration when operating at other site conditions. Please contact Kirloskar Oil Engines Ltd. for deration guidelines or visit <https://kfp.kirloskar.com>

Brief Specifications

Models	KFP4R-FM05D1 / KFP4R-UF05	KFP4R-UF07 / KFP4R-UF08	KFP4R-UF15 / KFP4R-UF16R1 / KFP4R-UF16R2	KFP6R-UF25 / KFP6R-UF26R1 / KFP6R-UF26R2	KFP6S-UF35
Engine Description	Vertical, Liquid Cooled, Compression Ignition, Four Stroke, Naturally Aspirated		Vertical, Liquid Cooled, Compression Ignition, Four Stroke, Turbocharged After cooled Diesel Engines		
Bore x Stroke (mm)	96 x 112	105 x 120		105 x 125	118 x 135
Displacement (Ltr)	3.20	4.16		6.48	8.86
Compression Ratio	17.5:1	17.5:1	17.0:1	17.0:1	17.5:1
Direction of Rotation	Counter- Clockwise (Looking from Flywheel End)				
Speed-Max Operating (rpm)	3000				2350
Min. Operating (rpm)	1760				
Dimensions (mm) L x W x H	1248x878x1120	1840x1140x1580	1840x1140x1580	2130x1330x1630	2270x1580x1890
Weight (kg)	500	580	630	880	1160
DC Voltage (V)	12	12	12	12	24

For inquiries & more Information visit <https://kfp.kirloskar.com>

International business offices

KIRLOSKAR DMCC

JBC-5, Cluster W,
Jumeirah Lake Towers,
P.O.Box 37745,
Dubai, U.A.E
Tel.: +971 4 443 8591
Fax: +971 4 441 4532
Email : enquiry@kirloskarib.com
Email : enquiry@kirloskar.ae
Website : www.kirloskarib.com

JOBURG INDUSTRIAL TRADING

S.A.(Pty) LTD.
Unit B1, The Stables Business Park,
Cnr of Third Avenue &
Second Road, Limbro Park,
Modderfontein,
Johannesburg.
Tel.: +27 11 553 6900/6903
Email: kirsons@kirloskar-africa.co.za

KIRLOSKAR KENYA LTD.

P.O. Box 60061,
Off Dunga Road,
Nairobi, Kenya.
Tel.: +254 20 653 6632
Fax: +254 20 653 3390
Email: rspatil@kirloskar.co.ke

KOEL AMERICAS CORPORATION

33300 Egypt Lane, Suite C300
Magnolia, TX 77354
Tel.: +1 346 248 5777
Cell Ph: +1 832 675 1595
Fax: +1 830 423 8060
Email: Vinay.Kulkarni@koelamerica.com

THE REPRESENTATIVE OFFICE OF KIRLOSKAR DMCC

Suite 1331A, 13th Floor, Level One Saigon,
mPlaza Saigon, No. 39 Le Duan Street,
Ben Nghe Ward, District 1,
Ho Chi Minh City, Vietnam
Cell Ph: +84 12 2965 9756
Tel.: +84 28 6288 6401 (Ext 1511)
Email : Sanjay.Kunchetti@kirloskar.com

Technical details mentioned above are approximate & may change as per site condition / situation.
As continuous improvements are contemplated the description and illustrations are not binding.



Enriching Lives

KIRLOSKAR OIL ENGINES LIMITED

A Kirloskar Group Company

Regd. office: 13, Laxmanrao Kirloskar Road, Khadki,
Pune, Maharashtra 411003 INDIA.
Tel.: +91(20) 2581 0341 Fax: +91(20) 2581 3208, 2581 0209
Helpline: +91 8806 33 44 33
Email: koel.helpdesk@kirloskar.com
Website: www.koel.co.in

Authorised Distributor / Dealer



TORNATECH

Project: _____

Customer: _____

Engineer: _____

Pump Manufacturer: _____

Technical Data Submittal Document

Model GPD

Diesel Engine Driven Fire Pump Controller



Contents:

Data Sheets
Dimensional Data
Wiring Schematics
Field Connections

Note: The drawings included in this package are for controllers covered under our standard offering. Actual AS BUILT drawings may differ from what is shown in this package.



N.Y.C.
APPROVED



November 2018



Standard, Listings, Approvals and Certifications	Built to NFPA 20 (latest edition)	
	Underwriters Laboratory (UL)	• UL218 - Fire Pump Controllers • CSA C22.2 No. 14 Industrial Control Equipment
	FM Global	Class 1321/1323
	New York City	Accepted for use in the City of New York by the Department of Buildings
	Seismic Certification	See page 5 for details
	Optional	
	☐ CE Mark	Various EN, IEC & CEE directives and standards
Enclosure	Protection Rating ☐ Standard: NEMA 2 (IP31) Optional ☐ NEMA 12 ☐ NEMA 4X-304 sst painted ☐ IP54 ☐ NEMA 3 ☐ NEMA 4X-304 sst brushed finish ☐ IP55 ☐ NEMA 3R ☐ NEMA 4X-316 sst painted ☐ IP65 ☐ NEMA 4 ☐ NEMA 4X-316 sst brushed finish ☐ IP66	
	Accessories • Bottom entry gland plate • Lifting Lugs • Keylock handle	Paint Specifications • Red RAL3002 • Powder coating • Glossy textured finish
Ambient Temperature Rating	Standard ☐ 4°C to 40°C / 39°F to 104°F Optional ☐ 4°C to 55°C / 39°F to 131°F	
General	AC	☐ 120V / 1ph / 60hz ☐ 208V to 240V / 1ph / 50-60hz
	DC	☐ 12VDC ☐ 24VDC
	Grounding system	• Negative
	Battery chargers	• Two independent fully automatic • 10A continuous charge • 500mA trickle charge
Electrical Reading	• Battery 1 & Battery 2 voltage • Battery 1 & Battery 2 charging amperage • Charging mode	
Pressure Reading	• Continuous system pressure display • Cut-in and cut-out pressure setting	
Pressure and Event Recorder	• Pressure readings with date stamp • Event recording with date stamp • Under regular maintained operation, events are stored in memory for the life of the controller. • Data viewable on operator interface display screen • Downloadable by USB port to external memory device	





Pressure sensing	• Pressure transducer and run test solenoid valve assembly for fresh water application • Pressure sensing connection 1/2" Female NPT • Drain connection 3/8" • Rated and calibrated for 0-500psi working pressure • Externally mounted with protective cover		
Audible Alarm	4" alarm bell - 85 dB at 10ft. (3m)		
Visual Indications	• Engine run • Main switch AUTO • Main switch in OFF • Main switch in HAND • Periodic test • Cranking Cycle • AC Power available • Pump room temperature (°F or °C)		
Visual & Audible Alarms	Visual only • Pump room trouble • Pump on demand • AC Failure • Charger 1 Failure • Charger 2 Failure • Weak battery 1 • Weak battery 2 • Battery 1 overvoltage • Battery 2 overvoltage • Loss of continuity 1 • Loss of continuity 2 • High fuel level • Fuel tank leak • PLD low suction pressure • High raw water temperature • Low pump room temperature • High pump room temperature • ECM warning • Weekly test cut-in not reached • Check weekly test solenoid • Pressure transducer fault • Invalid Cut-In • Service required Visual and Audible • Engine trouble • Controller trouble • Engine low oil pressure • Engine high temperature • Engine low temperature • Engine overspeed • DC Failure • Battery 1 Failure • Battery 2 Failure • Engine fail to start • Low fuel level • ECM fault • ECM SS in Alternate Position • Fuel injection malfunction		
Remote Alarm Contacts	DPDT-8A-250V.AC • Engine run • Common controller trouble • Charger #1 & Charger #2 failure • Common engine trouble • High engine temperature • Fail to start • Fuel injection malfunction** • ECM selector switch in alternate position*** • Common pump room trouble (field re-assignable)* • Low fuel level • High fuel level • Fuel tank leak • H-O-A selector switch in OFF or HAND • Free (field programmable)* • Pressure transducer fault • Battery #1 & battery #2 failure • DC failure • Loss of continuity (starter) #1 and/or #2 • PLD low suction pressure • Overspeed • Fail when running • Low oil pressure • AC Failure		

*Except if option C13 is ordered. Tornatech reserves the right to use any of these four alarm points for special specific application requirements

**Applicable to electronic engines only.

*** Applicable to electronic engines only. Alarms when ECM selector switch on the engine is in alternate mode.



Terminals for Field Connections for External Devices	• Low fuel level • Remote AUTOMATIC start • Deluge valve start (re-assignable) • Fuel tank leak (re-assignable) • High fuel level (re-assignable)		
ViZiTouch V2 Operator Interface	• Embedded microcomputer with software PLC logic • 7.0” color touch screen (HMI technology) • Upgradable software • Multi-language		
Operation	Selector Switch	• Hand-Off-Auto • Behind lockable and breakable cover	
	Automatic Start	• Start on pressure drop • Remote start signal from automatic device	
	Manual Start	• Crank 1 and Crank 2 start pushbuttons • Run test pushbutton • Deluge valve start • Remote start from manual device	
	Crank Cycle	• 6 consecutive cycle attempts • 3 X 15s crank from battery 1 or 2 alternatively • 15s rest in between each crank attempt	
	Stopping	• Manual with Stop pushbutton • Automatic after expiration of minimum run timer ****	
	Timers	Field Adjustable & Visual Countdown	• Minimum run timer ****(off delay) • Sequential start timer (on delay) • Periodic test timer
	Actuation	Visual Indication	• Pressure • Non-pressure
	Mode		• Automatic • Non-automatic
Communication Protocol Capability	• Protocol: Modbus • Connection type: Shielded female connector RJ45 • Frame Format: TCP/IP • Addresses: See bulletin MOD-GPD		

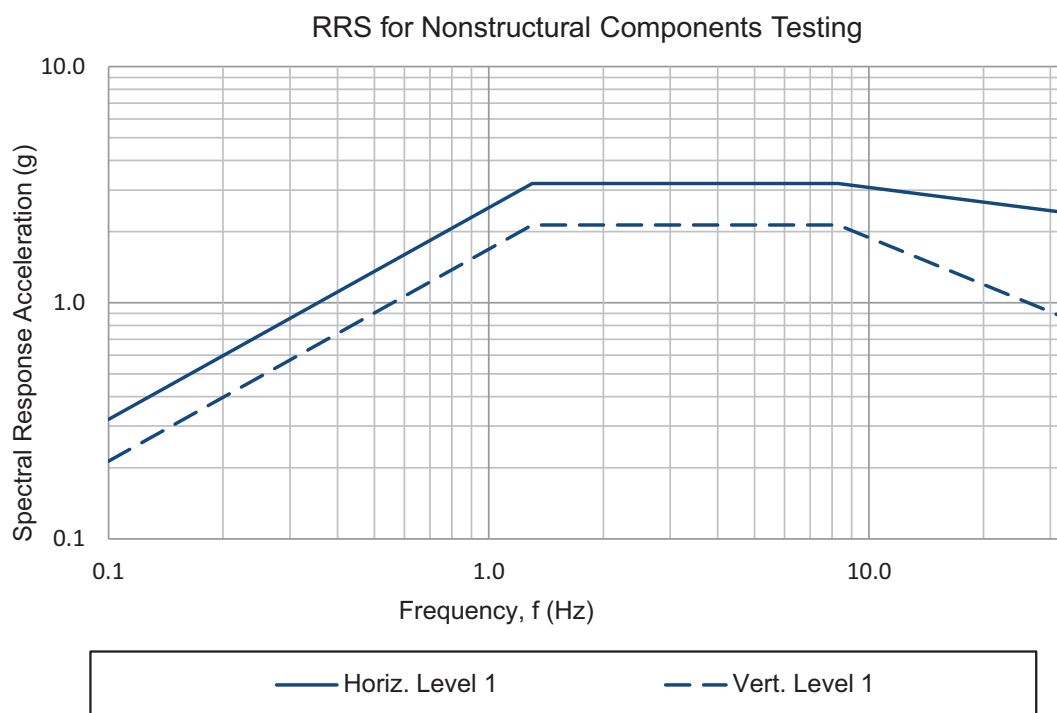
Alarm and shutdown schedule		Automatic Start	Manual or Remote Start	Run Test or Periodic Test
	High Coolant	Alarm only	Alarm only	Shutdown
	Low Oil Pressure	Alarm only	Alarm only	Shutdown
	Overspeed	Shutdown	Shutdown	Shutdown

	Wall Mount		Floor Mount	
Starting Voltage	Approx. shipping dimensions in inches (mm)	Approx. Shipping Weight in Lbs (kg)	Approx. shipping dimensions in inches (mm)	Approx. Shipping Weight in Lbs (kg)
12V.DC	32" l x 29" w x 16" h (813 x 737 x 407)	85 (39)	32" l x 29" w x 26" h (813 x 737 x 661)	115 (52)
24V.DC				

**** Automatic shutdown shall be approved by the AHJ.



Seismic Certification	Seismic Certification Company	TRU Compliance, LLC A Tobalski Watkins Affiliate					TWEI Project No.: 15014				
	Mounting details	Rigid wall mounting									
	Seismic Information	Building Code	Test Criteria	Seismic Parameters	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
		IBC 2015, CBC 2016	ICC-ES AC156	ASCE 7-10 Chapter 13	2.0	1.0	1.5	3.20	2.40	1.33	0.53
				3.2	0.0	1.5	3.20	1.28	2.13	0.85	

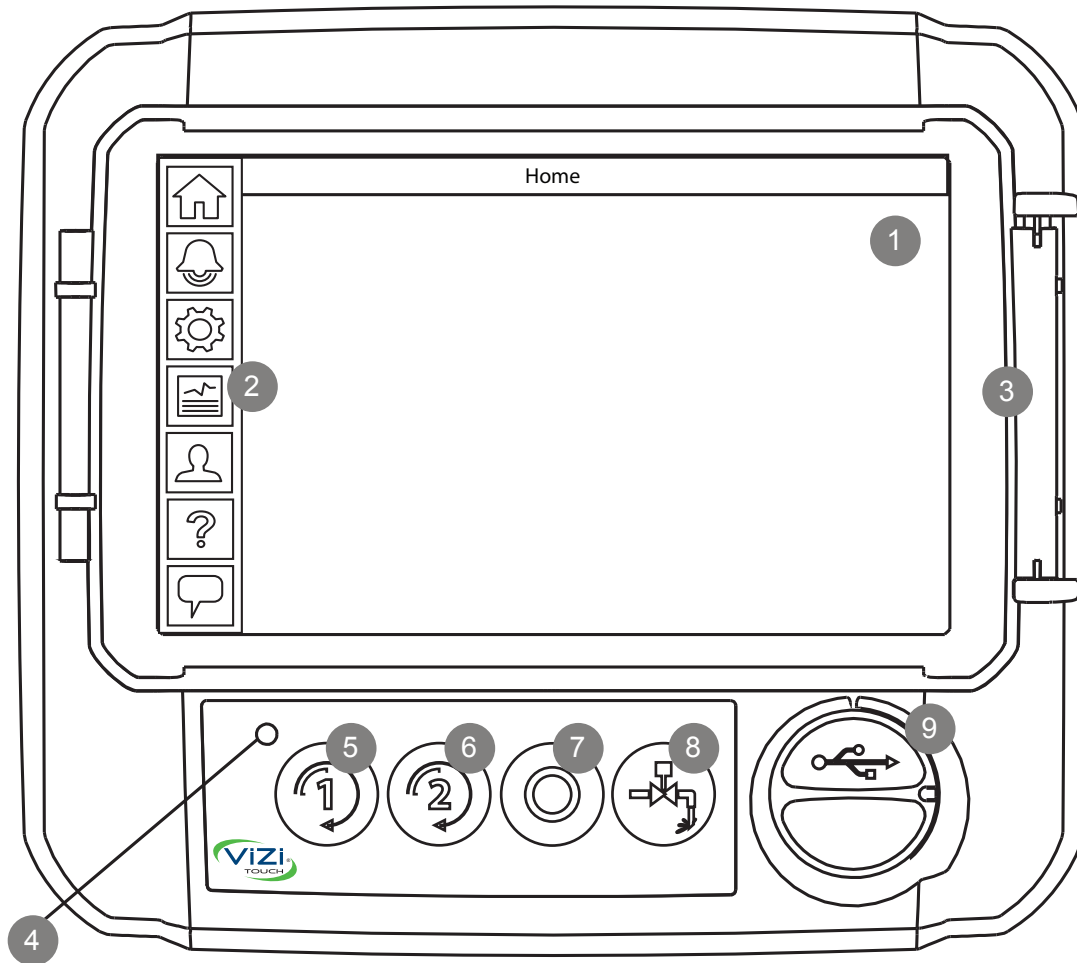


Notes:

- Components are tested in accordance with ICC-ES AC156, IBC 2015 & CBC 2016.
- OSHPD Special Seismic Certification Preapproval (OSP)



ViZiTouch V2 Operator Interface



1 - Color touch screen

2 - Onscreen menu

- HOME page
- ALARM page
- CONFIGURATION page
- HISTORY page
- SERVICE page
- MANUAL page
- LANGUAGES page

3 - Screen protector

4 - Power LED (3 colors)

5 - CRANK 1 button

6 - CRANK 2 button

7 - STOP button

8 - RUN TEST button

9 - USB port

	Vendor Ref. No. NIL
	Vendor Doc. No. A
Contractor Name:	Contractor Ref. No. -
Project Name: NA	Contractor Job No. -

ELECTRIC MOTOR
& CONTROLLER

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>

PRODUCT LINE

ODP

- Available in NEMA or IEC construction these motors are ideal for in-door applications. Lower cost and longer product life due to lower temperature windings make these a best value option.
- These motors are available from 25-500HP, 2 and 4 poles, Epact Efficiency. All motors are 12 leads for wye-delta or across-the-line start, part winding start is available in single voltage or at lower voltage for dual voltage motors. All motors have 1.15 service factor for all voltages.

TEFC

- Available in NEMA or IEC construction, TEFC motors are ideal for applications in tough environments.
- These motors are available from 25-500HP, 2 and 4 poles, Epact Efficiency. All motors are 12 leads for wye-delta or across the line start, part winding start is available in single voltage or at lower voltage for duo voltage motors. All motors have 1.15 service factor for all voltages.

CLOSE COUPLED PUMP

- Available as JP or JM constructions, these motors are ideal when space is an issue. This integrated design enables a lower system cost.
- 2 and 4 poles, Epact Efficiency. Horizontal or vertical ODP construction.
- All motors have 1.15 service factor for all voltages.

VSS AND VHS

- Vertical solid shaft and hollow shaft constructions are ideal for deep well applications with turbine pumps. These motors are designed to handle the highest thrust loads of this system.
- VSS motors are available from 3-400 HP, 2 to 8 poles and are designed for normal and medium thrust, Epact Efficiency.
- All motors are 12 leads for wye-delta or across the line start, part winding start is available in single voltage or at lower voltage for duo voltage motors. All motors have 1.15 service factor for all voltages.
- VHS motors are available from 7.5HP to 300HP, 2 and 4 poles, WP1, Epact Efficiency.
- All motors are 12 leads for wye-delta or across-the-line start, part winding start is available in single voltage or at lower voltage for dual voltage motors. All motors have 1.15 service factor for all voltages.

MEDIUM VOLTAGE

- Regal also offers Medium Voltage products in NEMA and IEC constructions designed specifically for Fire Pump Applications.
- NEMA Construction, from 200 to 700HP, 2300V & 4000V 50/60HZ, 2 and 4 poles, IP22, 1.15 service factor. IEC Construction, from 185kW to 2800kW, 3kV through 10kV 50HZ & 4kV through 13.8kV 60HZ, 4 poles, IP23.



Scan the QR code
for more information on
Marathon® Fire Pump Motors

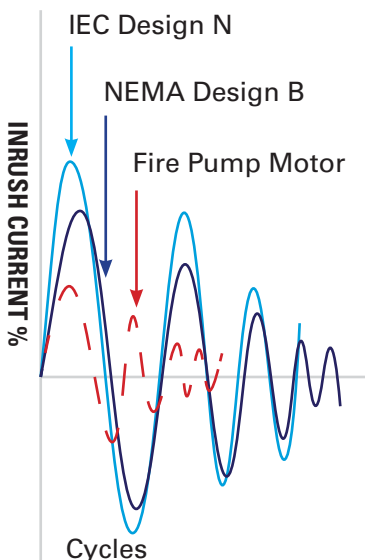
UL LISTED MOTORS

NAMEPLATES

- Fire pump motors have two nameplates, the normal nameplate with UL label and special fire pump nameplate with the UL listing for fire pumps.



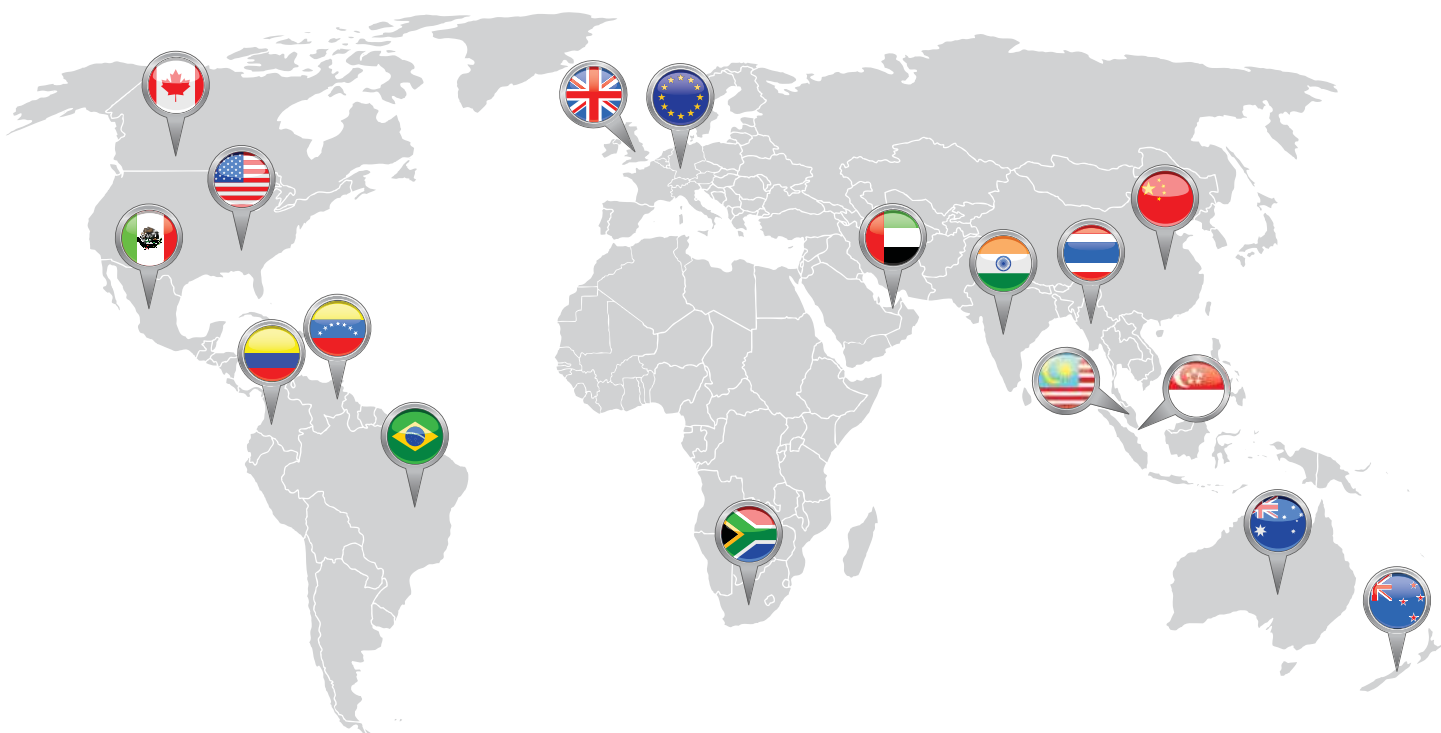
FIRE PUMP MOTOR INRUSH CURRENTS



Classification	Locked-Rotor Torque (% Rated-Load Torque)	Breakdown Torque (% Rated-Load Torque)	Locked-Rotor Current (% Rated-Load Current)
UL Fire Pump Motor	70-275*	175-300*	300-600
Design B – Normal locked-rotor torque and normal locked-rotor current	70-275*	175-300*	600-700
IEC 34-12 Design N locked-rotor torques and currents	75-190*	160-200*	800-1000

*Higher values are for motors having lower horsepower ratings.

REGAL WORLD FOOTPRINT *The motor you want, where you are, when you need.*



CODES & CERTIFICATIONS

FIRE PUMP SYSTEM – A fire pump system is part of a fire sprinkler system's water supply either connected to the public underground water supply piping, or a static water source.

A fire pump system is tested and listed for its use specifically for fire service by a third-party accredited testing and listing laboratory, such as FM, LPCB, UL, VdS. Additionally, installation of fire pump systems is coordinated by Comité Européen Des Assurances in Europe and the National Fire Protection Code in the U.S.

FIRE PUMP MOTORS – A fire pump motor is a definite purpose motor designed to meet *UL Standard of Safety 1004-1 Rotating Electrical Machines - General Requirements - and UL 1004-5 Fire Pump Motors*. These motors are designed and built with a low KVA code to reduce inrush currents, offer extended life, and are tested to meet the highest standards in the industry.

Fire pump motors consist of low voltage NEMA Open Dripproof motors, NEMA JM/JMV/JP/JPV Close-Coupled pump motors, NEMA vertical solid shaft P-base motors, NEMA vertical hollow shaft motors, NEMA Totally Enclosed motors. We manufacture a line of low voltage IEC Totally Enclosed motors and Marine Duty IEC Totally Enclosed motors. These motors carry the UL mark and file number for fire pump motors. Additionally, we manufacture a line of low voltage IEC non-UL motors in IE1, IE2, and IE3 efficiencies for Europe, certain areas of the Middle East, Asia, Africa, and portions of Latin America.

UL also defines requirements for fire pump motors above 500 HP and greater than 600 volts, Marathon markets a line of high efficiency 2300V, 4160V and 7.2kV NEMA and IEC open motors for fire pump applications. These motors meet the same high standards as Marathon's low voltage UL listed motors.

COMITÉ EUROPÉEN DES ASSURANCES (CEA) – Insurance Europe (known as *Comité Européen des Assurances* until March 2012) is the European insurance and reinsurance federation. Through its 34 member bodies — the national insurance associations — it represents all types of insurance and reinsurance undertakings. *Standard CEA 4046 – CEA Rules for the approval of Installers of Fire Fighting Systems in accordance with CEA 4046* covers the installation of fire pump systems.

FACTORY MUTUAL (FM) – Factory Mutual specializes in loss prevention services throughout the world in the Highly Protected Risk (HPR) property insurance market sector. The company employs a business model whereby risk and premiums are determined by engineering analysis as opposed to historically based actuarial calculations. FM engineering personnel regularly visit insured locations to evaluate hazards and recommend improvements.

FM Approved fire pump packages are produced using components that have been subjected to rigorous tests to ensure that they will perform when called upon throughout the duration of a fire event. A FM Approved fire pump system will test the driver (motor, diesel or steam), pump and controller as a system to assure the performance

characteristics of the system meet the protection requirements for the property.

LOSS PREVENTION CERTIFICATION BOARD (LPCB) – The LPCB has been working with industry and government for more than 100 years to set the standards necessary to ensure that fire and security products and services work effectively.

In that time the LPCB Mark has become an internationally recognized mark of trust. Under the LPCB label, third-party certification and listing of fire and security products and services are available, so that: architects and specifiers can be sure that those they select will perform as required, and manufacturers and suppliers can demonstrate the quality of their products and services.

NATIONAL FIRE PROTECTION CODE 20 (NFPA 20) – *NFPA 20 – The Standard for Installation of Stationary Pumps for Fire Protection* codifies the requirements for safe electrical installations of a fire pump system into a single, standardized source. The NFPA 20 code covers water supply requirements, pump requirements, pump sizing, pump types, pump drivers, and accessory equipment such as valves and flow meters used in a fire pump system. It is part of the National Fire Codes series published by the National Fire Protection Association (NFPA), and while not itself a U.S. law, NEC use is commonly mandated by state or local law.

UNDERWRITERS LABORATORY – Underwriters Laboratories (UL) is a global independent safety science company with more than a century of expertise innovating safety solutions. UL helps safeguard people, products and places by certify, validating, testing, inspecting, auditing, advising, and educating. *The UL Mark is the single most accepted certification for fire pump systems and motors in the world.*

VDS 2095 – VdS is an independent institution which has been ensuring safety and trust in the fields of fire protection and security for many decades. The activities of VdS in the field of fire protection are targeted at the effectiveness and reliability of installed fire protection systems. The basis of the VdS approval process are the coordinated European specifications for installers of fire protection and security systems (CEA 4048 and CEA 4049) of the Comité Européen des Assurances (CEA). Furthermore, the approval process takes full account of the requirements of DIN 14675 with regard to the proof of competence of the installers (described in DIN 14675 as specialist companies). VdS is accredited for the certification of BMA installers by Deutsche Akkreditierungs GmbH (DAkkS) according to DIN EN 45011.



ODP 50 HZ

MODEL	FRAME	POLES	HP	EFF(%)	P F	V	Hz	FLA (A)	LRA (A)	Rpm	Tst/Tn	Tm/Tn
256TTDBD4024	256T	2	20	89.5	0.87	190/380	50	58/29	431/215	2945	1.3	2
256TTDBD4009	256T	2	25	91	0.87	208/415	50	66/33	492/246	2940	1.3	2
256TTDBD4024	256T	2	20	90.2	0.87	200/400	50	54/27	409/204	2950	1.3	2
284TSTDBD4002	284TS	2	25	90.2	0.86	190/380	50	72/36	539/269	2955	1.3	2
284TSTDBD4002	284TS	2	30	90.2	0.85	208/415	50	81/40.6	591/296	2955	1.3	2
284TSTDBD4002	284TS	2	25	90.2	0.85	200/400	50	70/35	512/256	2960	1.3	2
286TSTDBD4022	286TS	2	30	91	0.87	190/380	50	87/43.5	647/323	2958	1.3	2
286TSTDBD4022	286TS	2	40	90.2	0.86	208/415	50	106/53	788/395	2950	1.25	2
286TSTDBD4022	286TS	2	30	91	0.85	200/400	50	84/42	614/307	2962	1.3	2
324TSTDCD4010	324TS	2	40	91.7	0.88	190/380	50	110/55	863/431	2965	1.25	2
324TSTDCD4009	324TS	2	50	92.4	0.88	208/415	50	128/64	985/493	2962	1.2	2
324TSTDCD4010	324TS	2	40	91.7	0.87	200/400	50	108/54	819/409	2970	1.25	2
326TSTDCD4009	326TS	2	50	92.4	0.88	190/380	50	139/70	1078/539	2962	1.2	2
326TSTDCD4009	326TS	2	60	91.7	0.88	208/415	50	152/76	1182/592	2962	1.2	2
326TSTDCD4024	326TS	2	50	92.4	0.87	200/400	50	132/66	1024/512	2965	1.2	2
364TSTDCD4025	364TS	2	60	92.4	0.88	190/380	50	166/83	1294/647	2970	1.2	2
364TSTDCD4009	364TS	2	75	93	0.88	208/415	50	190/95	1478/740	2965	1.05	2
364TSTDCD4025	364TS	2	60	93	0.87	200/400	50	160/80	1229/614	2972	1.2	2
365TSTDCD4025	365TS	2	75	93	0.88	190/380	50	210/105	1618/809	2970	1.05	2
365TSTDCD4010	365TS	2	100	93	0.88	208/415	50	256/128	1970/987	2965	1.05	2
365TSTDCD4025	365TS	2	75	93	0.87	200/400	50	200/100	1537/768	2972	1.05	2
404TSTDCD4017	404TS	2	100	93	0.88	380	50	135	1078	2975	1.05	2
404TSTDCD4009	404TS	2	125	93	0.88	415	50	155	1234	2970	1	2
404TSTDCD4017	404TS	2	100	93	0.87	400	50	130	1024	2978	1.05	2
405TSTDCD4009	405TS	2	125	93	0.89	380	50	168	1348	2970	1	2
405TSTDCD4009	405TS	2	150	93.6	0.89	415	50	185	1481	2970	1	2
405TSTDCD4006	405TS	2	125	93	0.88	400	50	160	1281	2975	1	2
444TSTDCD4010	444TS	2	150	94.1	0.88	380	50	200	1618	2978	1	2
444TSTDCD4009	444TS	2	200	94.5	0.89	415	50	245	1975	2975	1	2
444TSTDCD4010	444TS	2	150	94.5	0.87	400	50	190	1537	2980	1	2
445TSTDCD4007	445TS	2	200	94.1	0.88	380	50	265	2157	2975	1	2
445TSTDCD4010	445TS	2	250	94.5	0.89	415	50	305	2469	2975	0.7	1.75
445TSTDCD4007	445TS	2	200	94.2	0.87	400	50	252	2049	2978	1	2
447TSTDCD4009	447TS	2	300	95	0.90	380	50	393	3236	2975	0.7	1.75
447TSTDCD4009	447TS	2	300	95	0.9	415	50	360	2963	2975	0.7	1.75
	447TS	2	300	95	0.91	400	50	374	3074	2975	0.7	1.75
	449TS	2	350	95	0.91	380	50	459	3775	2975	0.7	1.75
	449TS	2	350	95	0.91	415	50	420	3457	2975	0.7	1.75
	449TS	2	350	95	0.91	400	50	436	3586	2975	0.7	1.75
	449TS	2	400	95.4	0.91	380	50	522	4315	2975	0.7	1.75

	449TS	2	400	95.4	0.91	415	50	478	3951	2975	0.7	1.75
	449TS	2	400	95.4	0.91	400	50	496	4099	2975	0.7	1.75
284TTDBD4027	284T	4	20	90.2	0.83	190/380	50	60/30	431/215	1472	1.5	2
284TTDBD4027	284T	4	25	90.2	0.83	208/415	50	70/35	492/246	1470	1.5	2
284TTDBD4027	284T	4	20	91	0.82	200/400	50	58/29	409/204	1475	1.5	2
286TTDBD4041	286T	4	25	91	0.85	190/380	50	73/37	539/269	1468	1.5	2
286TTDBD4041	286T	4	30	91	0.84	208/415	50	82/41	591/296	1468	1.4	2
286TTDBD4041	286T	4	25	91.7	0.84	200/400	50	70/35	512/256	1472	1.5	2
324TTDCD4038	324T	4	30	92.4	0.85	190/380	50	86/43	647/323	1478	1.5	2
324TTDCD4038	324T	4	40	91.7	0.84	208/415	50	108/54	788/395	1475	1.4	2
324TTDCD4038	324T	4	30	92.4	0.83	200/400	50	84/42	614/307	1480	1.5	2
326TTDCD4345	326T	4	40	92.4	0.85	190/380	50	115/57.5	863/431	1475	1.4	2
326TTDCD4345	326T	4	50	91.7	0.84	208/415	50	136/68	985/493	1472	1.4	2
326TTDCD4345	326T	4	40	92.4	0.84	200/400	50	111/55.5	819/409	1478	1.4	2
364TSTDCD4332	364TS	4	50	93	0.87	190/380	50	140/70	1078/539	1478	1.4	2
364TSTDCD4332	364TS	4	60	92.4	0.86	208/415	50	155/77.5	1182/592	1478	1.4	2
364TSTDCD4332	364TS	4	50	93	0.86	200/400	50	134/67	1024/512	1480	1.4	2
365TSTDCD4332	365TS	4	60	93.6	0.87	190/380	50	165/82.5	1294/647	1480	1.4	2
365TSTDCD4332	365TS	4	75	93.6	0.87	208/415	50	190/95	1478/740	1478	1.4	2
365TSTDCD4332	365TS	4	60	93.6	0.86	200/400	50	157/78.5	1229/614	1482	1.4	2
404TSTDCD4332	404TS	4	75	93.6	0.87	190/380	50	210/105	1618/809	1485	1.4	2
404TSTDCD4332	404TS	4	100	93.6	0.87	208/415	50	256/128	1970/987	1485	1.25	2
404TSTDCD4332	404TS	4	75	93.6	0.86	200/400	50	200/100	1537/768	1488	1.4	2
405TSTDCD4332	405TS	4	100	94.1	0.87	380	50	138	1078	1485	1.25	2
405TSTDCD4332	405TS	4	125	93.6	0.87	415	50	158	1234	1482	1.1	2
405TSTDCD4332	405TS	4	100	94.1	0.86	400	50	132	1024	1485	1.25	2
444TSTDCD4332	444TS	4	125	94.5	0.87	380	50	172	1348	1485	1.1	2
444TSTDCD4332	444TS	4	150	94.5	0.87	415	50	190	1481	1486	1.1	2
444TSTDCD4332	444TS	4	125	94.5	0.86	400	50	164	1281	1488	1.1	2
445TSTDCD4332	445TS	4	150	95	0.87	380	50	205	1618	1488	1.1	2
445TSTDCD4332	445TS	4	200	95	0.87	415	50	250	1975	1486	1	2
445TSTDCD4332	445TS	4	150	95.4	0.86	400	50	195	1537	1490	1.1	2
445TSTDCD14051	445TS	4	200	95.5	0.86	380	50	278	2157	1488	1	2
	445TS	4	250	95.4	0.86	415	50	316	2469	1486	0.8	1.75
	445TS	4	200	95.4	0.86	400	50	262	2049	1488	1	2
	447TS	4	300	95.4	0.86	380	50	414	3236	1480	0.8	1.75
	447TS	4	300	95.4	0.86	415	50	379	2963	1480	0.8	1.75
	447TS	4	300	95.4	0.86	400	50	394	3074	1480	0.8	1.75
	449TS	4	350	95.4	0.86	380	50	484	3775	1480	0.8	1.75
	449TS	4	350	95.4	0.86	415	50	443	3457	1480	0.8	1.75
	449TS	4	350	95.4	0.86	400	50	459	3586	1480	0.8	1.75
	449TS	4	400	95.4	0.86	380	50	553	4315	1480	0.8	1.75
	449TS	4	400	95.4	0.86	415	50	506	3951	1480	0.8	1.75
	449TS	4	400	95.4	0.86	400	50	525	4099	1480	0.8	1.75



BRAZIL

Regal Beloit do Brazil Ltda.

Trav. Vitor Emanuel, 2889
Bairro de Pedancino
95047-610 Caiza Postal 34
Caxias do Sul RS Brazil
Tel: 54.32249600

DUBAI

Regal Beloit FZE

1810, JAFZA ONE
Jebel Ali Free Zone - UAE
Tel: 971 4 8107444
Fax: 971 4 8812662

NETHERLANDS

Regal Beloit B.V.

Mors 2-4 & 1-5a
Eibergen, Gelderland, Netherlands 7151
Tel: (31) 0545-464640
Fax: (31) 0545-475065

ITALY

Cemp Srl

Via Piemonte, 16
20030 Senago (Milano) - Italy
Customer Service: +39 029443540 1
Fax: +39 029989177

LATIN AMERICA

Regal Beloit de México S. de R.L. de C.V.

José Timoteo Rosales #4616
Colonia Niño Artillero,
Monterrey, Nuevo Leon, México 64280
Tel: +52 (81) 50 00 79 00
Fax: +52(81) 50 00 79 01

UNITED KINGDOM

Regal Beloit UK Ltd.

Marshall Way Heapham Road Industrial Est
Gainsborough, Lincolnshire, UK DN21 1XU
Tel: (44) 1427-614141

UNITED STATES

Regal Beloit America, Inc.

100 E. Randolph Street, PO Box 8003
Wausau, WI 54401-8003
Customer Service: 715-675-3311
Fax: 800-262-3292
Technical Service: 800-626-2093

www.marathonelectric.com

APPLICATION CONSIDERATIONS

The proper selection and application of power transmission products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, lubrication requirements, loading supports, and other factors can materially affect the application and operating results of the products and components and the customer should carefully review its requirements. Any technical advice or review furnished by Regal Beloit America, Inc. and/or its affiliates ("Regal") with respect to the use of products and components is given in good faith and without charge, and Regal assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.

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TORNATECH

Project: _____

Customer: _____

Engineer: _____

Pump Manufacturer: _____

Technical Data Submittal Document

Model GPY

Full Service Reduced Voltage
Wye-delta Open
Electric Fire Pump Controller



Contents:

Data Sheets
Dimensional Data
Wiring Schematics
Field Connections

Note: The drawings included in this package are for controllers covered under our standard offering. Actual AS BUILT drawings may differ from what is shown in this package.



N.Y.C.
APPROVED



February 2019

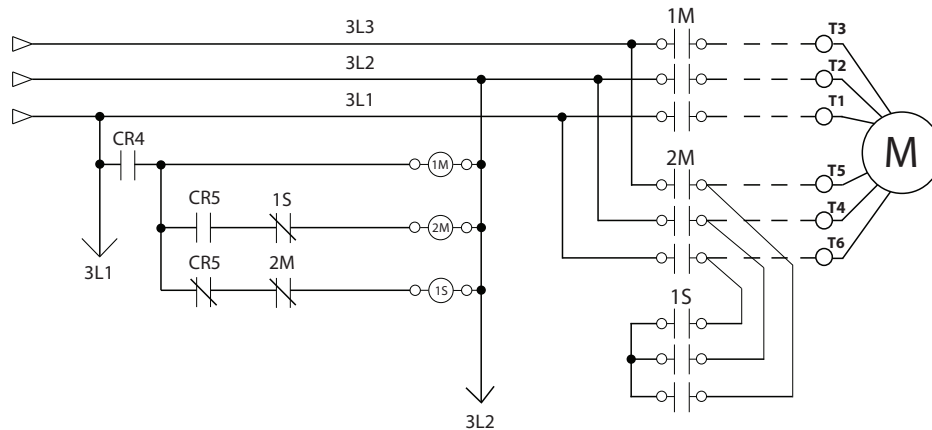


TORNATECH

Technical Data

Model GPY Electric Fire Pump Controller

From normal incoming power through Disconnecting Means (IS/CB)*



Standard, Listings, Approvals and Certifications	Built to NFPA 20 (latest edition)	
	Underwriters Laboratory (UL)	• UL218 - Fire Pump Controllers • CSA C22.2 No. 14 Industrial Control Equipment
	FM Global	Class 1321/1323
	New York City	Accepted for use in the City of New York by the Department of Buildings
	Seismic Certification	See page 7 for details
	Optional	
	☐ CE Mark	Various EN, IEC & CEE directives and standards
Enclosure	Protection Rating ☐ Standard: NEMA 2 (IP31) Optional ☐ NEMA 12 ☐ NEMA 4X-304 sst painted ☐ IP54 ☐ NEMA 3 ☐ NEMA 4X-304 sst brushed finish ☐ IP55 ☐ NEMA 3R ☐ NEMA 4X-316 sst painted ☐ IP65 ☐ NEMA 4 ☐ NEMA 4X-316 sst brushed finish ☐ IP66	
	Accessories • Bottom entry gland plate • Lifting Lugs • Keylock handle	
	Paint Specifications • Red RAL3002 • Powder coating • Glossy textured finish	

Shortcircuit Withstand Rating	200V to 208V 60Hz	220V to 240V 60Hz	380V to 416V 50 Hz / 60Hz	440V to 480V 60Hz	575V to 600V 60Hz
	HP (kw)				
☐ Standard 100kA	5-150 (3.7 - 110)	5-200 (3.7 - 147)	5-300 (3.7 - 220)	5-400 (3.7 - 335)	n/a
☐ Optional 150kA					
☐ Standard 50kA	200 (147)	250 (184)	350 - 450 (257-335)	450-500 (373)	5-500 (3.7- 373)
☐ Optional 100kA	n/a	n/a	n/a	450-500	

*Please see Disconnecting Means details on page 3



Ambient Temperature Rating	Standard: ☐ 4°C to 40°C / 39°F to 104°F Optional: ☐ 4°C to 55°C / 39°F to 131°F Controllers built in Dubai, UAE (Tornatech FZE) are supplied standard with 55°C rating.
Surge Suppression	Surge arrestor rated to suppress surges above line voltage
Disconnecting Means	- Isolating switch and circuit breaker assembly: - Door interlocked in the ON position - Isolating switch rated not less than 115% of motor full load current - Circuit breaker continuous rating not less than 115% of motor full load current - Overcurrent sensing non-thermal type, magnetic only - Instantaneous trip setting of not more than 20 times the motor full load current - Common flange mounted operating handle
Service Entrance Rating	Suitable as service entrance equipment
Emergency Start Handle	- Flange mounted - Integrated limit switch - Pull and latch activation - Across the line start (direct on line)
Locked Rotor Protector	- Operate shunt trip to open circuit breaker - Factory set at 600% of motor full load current - Trip between 8 and 20 seconds
Electrical Readings	- Voltage phase to phase (normal power) - Amperage of each phase when motor is running
Pressure Readings	- Continuous system pressure display - Cut-in and Cut-out pressure settings
Pressure and Event recorder	- Pressure readings with date stamp - Event recording with date stamp - Under regular maintained operation, events are stored in memory for the life of the controller. - Data viewable on operator interface display screen - Downloadable by USB port to external memory device
Pressure Sensing	- Pressure transducer and run test solenoid valve assembly for fresh water application - Pressure sensing line connection 1/2" Female NPT - Drain connection 3/8" - Rated for 0-500PSI working pressure (standard display at 0-300PSI) - Externally mounted with protective cover



Audible Alarm	4" alarm bell - 85 dB at 10ft. (3m)		
Visual Indications	• Power available • Motor run • Periodic test • Manual start	• Deluge valve start • Remote automatic start • Remote manual start • Emergency start	• Pump on demand/Automatic start • Pump room temperature (°F or °C) • Lockout
Visual & Audible Alarms	Visual • Control voltage not healthy • Invalid cut-in • Lock rotor current • Loss of power • Low ambient temperature • Low water level • Motor trouble • Phase reversal (normal power) Audible and visual • Fail to start Overcurrent • Overcurrent • Overvoltage • Phase loss L1 • Phase loss L2 • Phase loss L3 • Phase unbalanced • Pressure transducer fault detected Pump on demand • Pump on demand • Pump room alarm • Service required • Undercurrent • Undervoltage • Check weekly test solenoid • Weekly test cut-in reached		
Remote Alarm Contacts	DPDT-8A-250V.AC • Power available • Phase reversal • Motor run • Common pump room alarm (field re-assignable)** • Overvoltage • Undervoltage • Phase unbalance • Low pump room temperature • High pump room temperature • Common motor trouble (field re-assignable)** • Overcurrent • Fail to start • Undercurrent • Ground fault • Free (field programmable)**		

**Tornatech reserves the right to use any of these three alarm points for special specific application requirements.

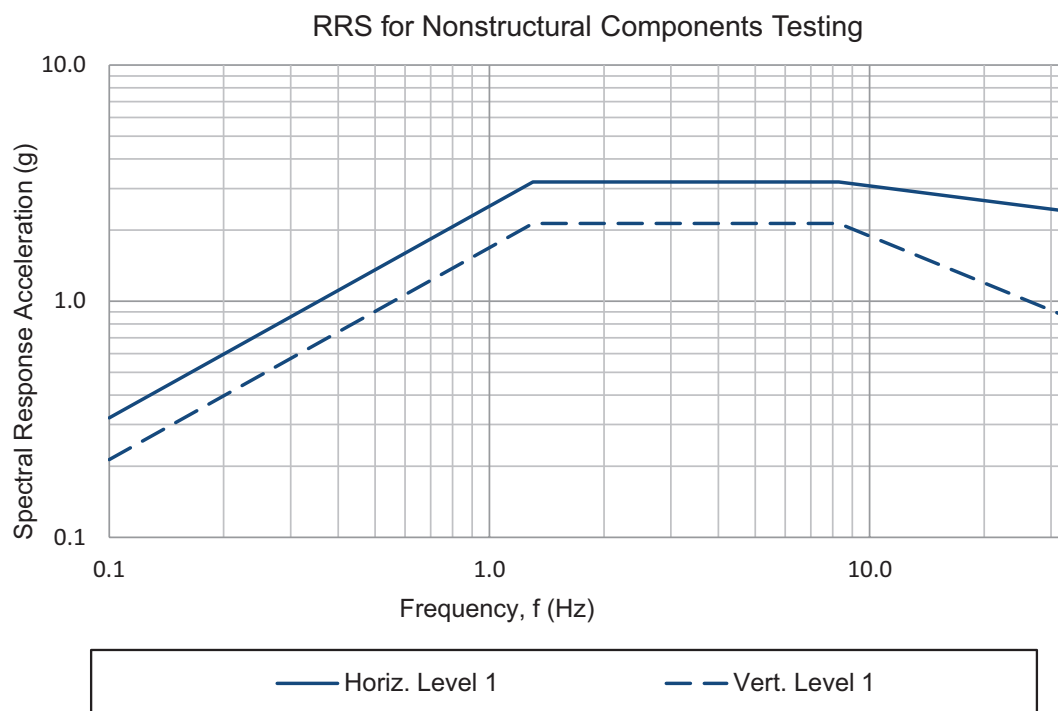


ViZiTouch V2 Operator Interface	• Embedded microcomputer with software PLC logic • 7.0" color touch screen (HMI technology) • Upgradable software • Multi-language		
Communication Protocol Capability	• Protocol: Modbus • Connection type: Shielded female connector RJ45 • Frame Format: TCP/IP • Addresses: See bulletin MOD-GPx		
Operation	Automatic Start	• Start on pressure drop • Remote start signal from automatic device • Deluge valve start	
	Manual Start	• Start pushbutton • Run test pushbutton • Remote start from manual device	
	Stopping	• Manual with Stop pushbutton • Automatic after expiration of minimum run timer ***	
	Timers	Field Adjustable & Visual Countdown	• Minimum run timer ***(off delay) • Sequential start timer (on delay) • Periodic test timer
	Actuation	Visual Indication	• Pressure • Non-pressure
	Mode		• Automatic • Non-automatic

***Can only be used if approved by the AHJ



Seismic Certification	Seismic Certification Company	TRU Compliance, LLC A Tobalski Watkins Affiliate					TWEI Project No.: 15014				
	Mounting details	Rigid base and wall mounting									
	Seismic Information	Building Code	Test Criteria	Seismic Parameters	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
		IBC 2015, CBC 2016	ICC-ES AC156	ASCE 7-10 Chapter 13	2.0	1.0	1.5	3.20	2.40	1.33	0.53
					3.2	0.0	1.5	3.20	1.28	2.13	0.85

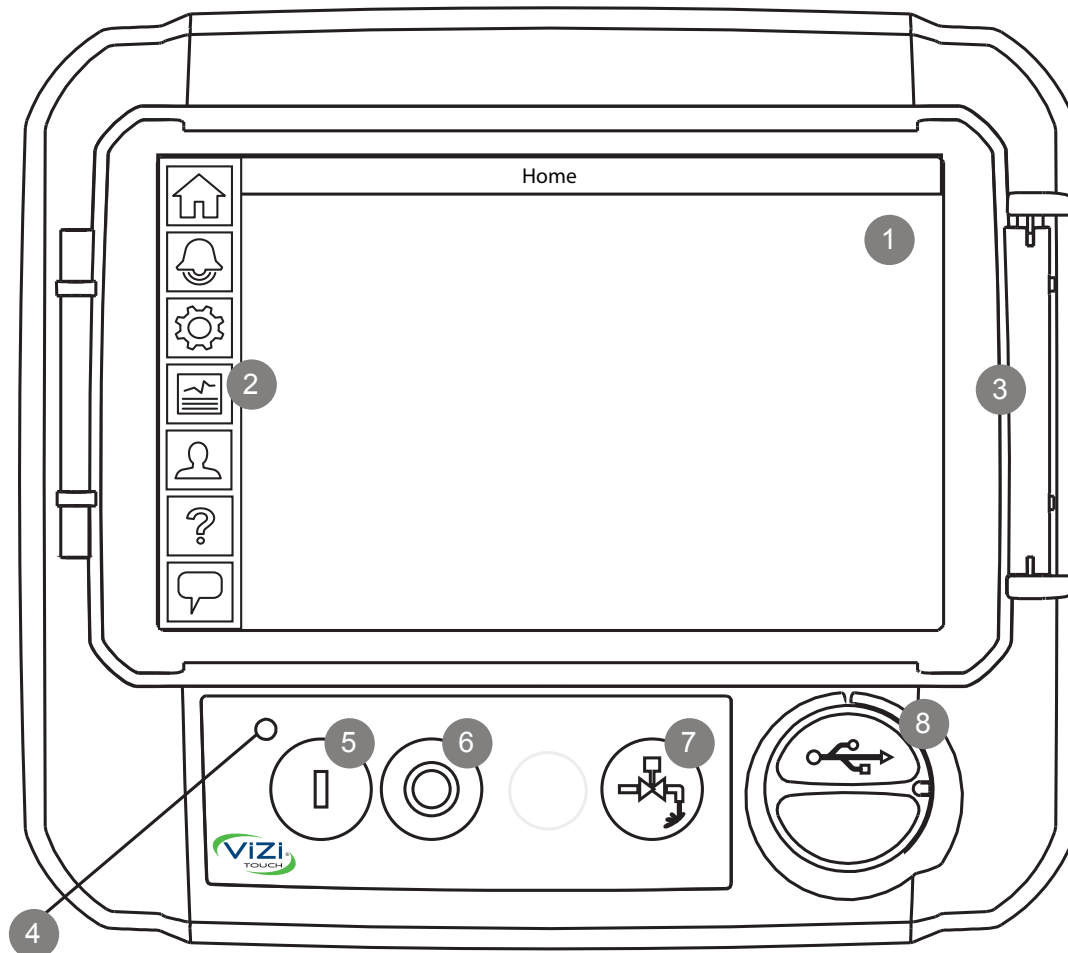


Notes:

- Components are tested in accordance with ICC-ES AC156, IBC 2015 & CBC 2016.
- OSHPD Special Seismic Certification Preapproval (OSP)



ViZiTouch V2 Operator Interface



- 1 - Color touch screen
- 2 - Onscreen menu
 - HOME page
 - ALARM page
 - CONFIGURATION page
 - HISTORY page
 - SERVICE page
 - MANUAL page
 - LANGUAGES page

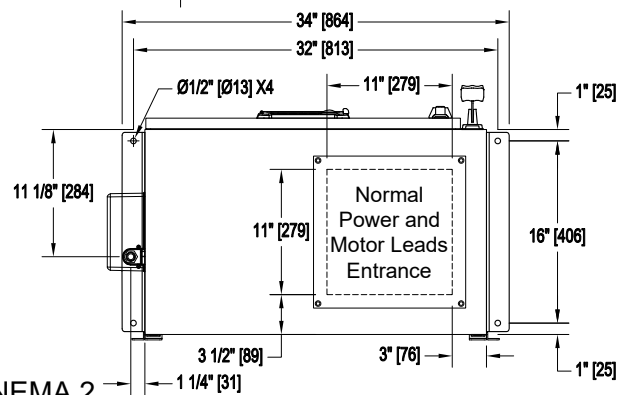
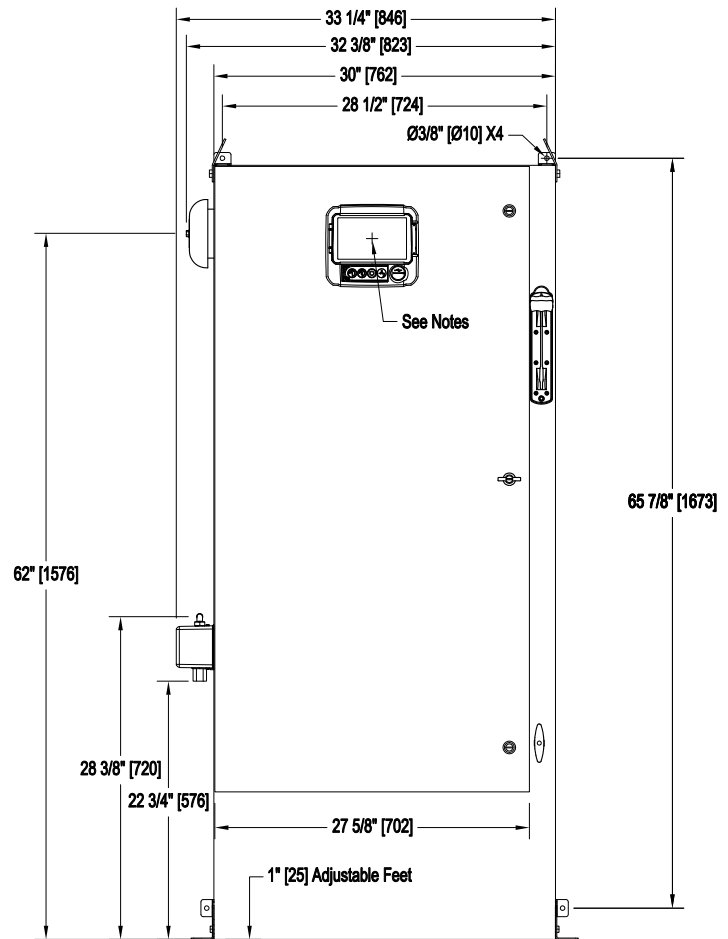
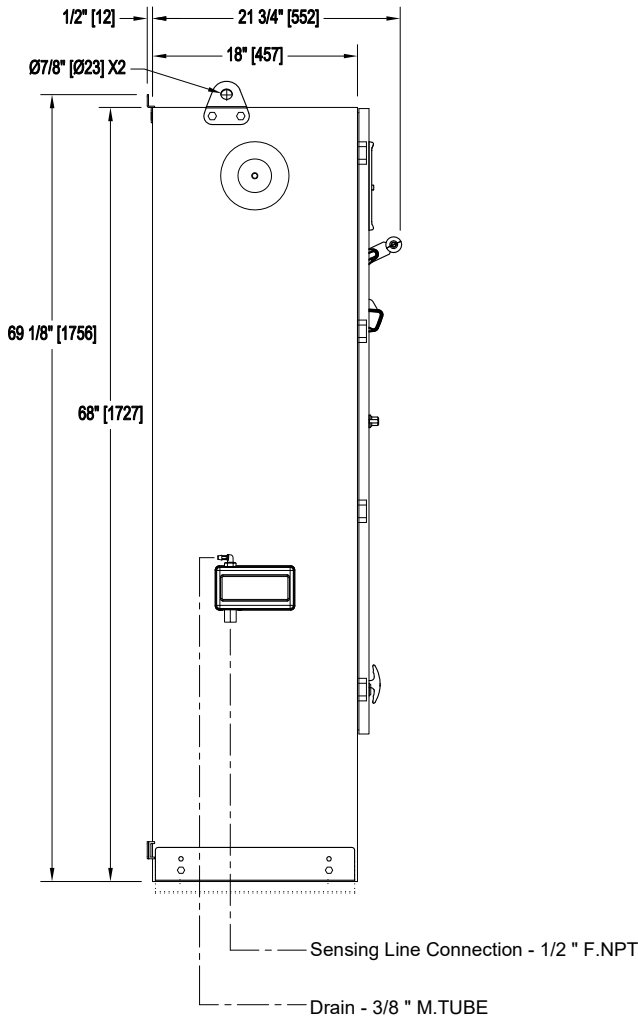
- 3 - Screen protector
- 4 - Power LED (3 colors)
- 5 - START button
- 6 - STOP button
- 7 - RUN TEST button
- 8 - USB port

Electric Fire Pump Controller

Model: GPA/GPY

Dimensions

Built to the latest edition of the NFPA 20 standard

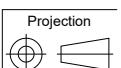


Notes:

- Standard NEMA: NEMA 2
- Standard paint : textured red RAL 3002.
- All dimensions are in inches [millimeters].
- Center of ViZiTouch screen: 61-5/8" [1564] from Bottom.
- Bottom conduit entrance through removable gland plate recommended.
- Use watertight conduit and connector only.
- Protect equipment against drilling chips.
- Door swing equal to door width.
- Seismic mounting to be rigid wall and base only.

Voltage / Power Table		
Voltage	Min HP	Max HP
208	75	150
220 - 240	75	200
380 - 400 - 415	150	300
440 - 480	200	400
600	200	500

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.



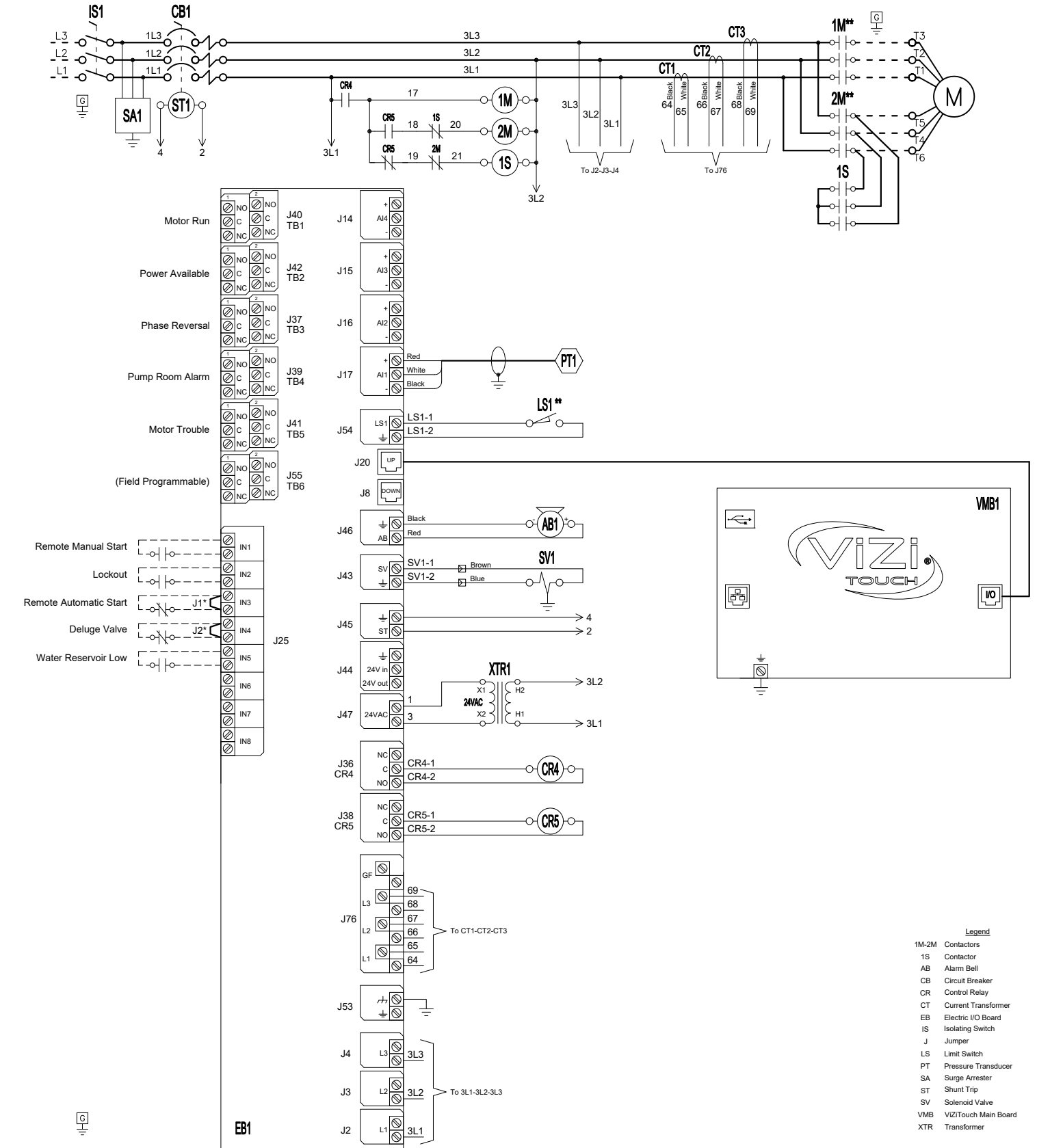
REV.	DESCRIPTION	DD/MM/YY	Drawing number
2.	New Logo	10/05/18	GPX-DI361 / E
1.	Box Size Revision and Valve Change	21/11/17	
0.	First issue	16/11/16	

Electric Fire Pump Controller
Reduced Voltage / Wye-Delta (Open Transition)

Model: GPY

Wiring schematic

Built to the latest edition of the NFPA 20 standard



* Remove jumper to use this feature

** Contact closes when emergency start is in "ON" position

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.



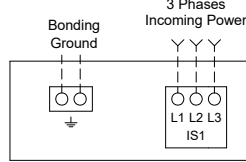
Electric Fire Pump Controller

Model: GPX

Terminal Diagram and Sizing for Isolating Switch

Built to the latest edition of the NFPA 20 standard

Power Terminals



Notes:

- 1 - For proper wire sizing, refer to NFPA70 and NEC (USA) or CEC (Canada) or local code.
- 2 - Controller suitable for service entrance in USA.
- 3 - For more accurate motor connections refer to motor manufacturer or motor nameplate.
- 4 - Controller is phase sensitive. Incoming lines must be connected in ABC sequence.

COPPER CONDUCTORS for Isolating Switch (IS1).

Field Wiring According to Bending Space (AWG or MCM). Terminals L1 - L2 - L3

Bending Space	5 " (127 mm)							8 " (203 mm)		
HP Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (2 to 1/0)	1x (1/0 to 250)	1x (3/0 to 250)	1x (4/0 to 250)
220 to 240	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)
380 to 416	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (3 to 1/0)
440 to 480	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)
600	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)

Bending Space	12 " (305 mm)				16 " (406 mm)						
HP Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (300 to 500)	1x (500)	2x (4/0 to 500)	2x (250 to 500)	2x (400 to 600)	-----	-----	-----	-----	-----	-----
220 to 240	1x (250 to 500)	1x (350 to 500)	2x (3/0 to 500)	2x (4/0 to 500)	2x (350 to 500)	2x (500 to 600)	-----	-----	-----	-----	-----
380 to 416	1x (1/0 to 250)	1x (3/0 to 250)	1x (250)	1x (300 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (300 to 500)	2x (400 to 600) 2x (400 to 500)	2x (500 to 600)	2x (600)	-----
440 to 480	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)	1x (4/0 to 250)	1x (350 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (300 to 500)	2x (350 to 500)	2x (400 to 600)	2x (500 to 600)
600	1x (3 to 1/0)	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)	1x (250 to 500)	1x (350 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (250 to 500)	2x (300 to 500)	2x (350 to 500)
Bending Space	5 " (127 mm)				8 " (203 mm)				12 " (305 mm)		

ALUMINUM CONDUCTORS for Isolating Switch (IS1).

Field Wiring According to Bending Space (AWG or MCM). Terminals L1 - L2 - L3

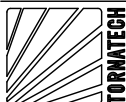
Bending Space	5 " (127 mm)							8 " (203 mm)		10 " (254 mm)
HP Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (10 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (1 to 1/0)	1x (1/0)	1x (3/0 to 250)	1x (4/0 to 250)	1x (300) ** or 1x (250) 90°C *
220 to 240	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (2 to 1/0)	1x (1 to 1/0)	1x (2/0 to 250)	1x (4/0 to 250)	1x (250)
380 to 416	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (4 to 1/0)	1x (2 to 1/0)	1x (1 to 1/0)	1x (1/0)
440 to 480	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (2 to 1/0)	1x (1 to 1/0)
600	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (4 to 1/0)	1x (2 to 1/0)

Bending Space	12 " (305 mm)				16 " (406 mm)						
HP Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (400 to 500)	1x(500) 90°C or 2x(4/0 to 250) **	2x (300 to 500)	2x (350 to 500)	2x (600)	-----	-----	-----	-----	-----	-----
220 to 240	1x (350 to 500)	1x (500)	2x (250 to 500)	2x (300 to 500)	2x (500)	2x (600) 90°C *	-----	-----	-----	-----	-----
380 to 416	1x (3/0 to 250)	1x (250)	1x (350) ** N/A **	1x (400 to 500)	2x (4/0 to 250)	2x (300 to 500)	2x (400 to 500)	2x (500 to 600) 2x (500)	2x (600) 90°C *	2x (600) 90°C *	-----
440 to 480	1x (1/0 to 250)	1x (3/0 to 250)	1x (250)	1x (300) ** or 1x (250) 90°C *	1x (500)	2x (250)	2x (300 to 500)	2x (400 to 500)	2x (500)	2x (600)	2x (600) 90°C *
600	1x (1 to 1/0)	1x (2/0 to 250)	1x (3/0 to 250)	1x (4/0 to 250)	1x (350 to 500)	1x (500)	2x (4/0 to 250)	2x (300 to 500)	2x (350 to 500)	2x (400 to 500)	2x (500)
Bending Space	5 " (127 mm)				8 " (203 mm)				12 " (305 mm)		

*For standard enclosure, use 90°C aluminium wire. Consult Factory for Use of Conductors Rated Lower than 90°C.

** Consult Factory

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.



REV.	DESCRIPTION	DD/MM/YY	Drawing number
2	Revised logo	18/06/18	GPX-TD602 1/2 /E
1	General Revision (added AL coverage)	10/07/17	
0	First issue	16/03/17	

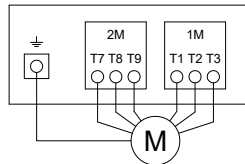
Electric Fire Pump Controller

Model: GPX

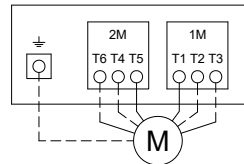
Terminal Diagram and Sizing For GPP, GPY & GPW

Built to the latest edition of the NFPA 20 standard

Motor Terminals



Model : GPP



Models : GPW & GPY

Notes:

- 1 - For proper wire sizing, refer to NFPA70 and NEC (USA) or CEC (Canada) or local code.
- 2 - Controller suitable for service entrance in USA.
- 3 - For more accurate motor connections refer to motor manufacturer or motor nameplate.
- 4 - Controller is phase sensitive. Incoming lines must be connected in ABC sequence.

COPPER CONDUCTORS for Motor Connection (1M-2M).

Field Wiring According to Bending Space (AWG or MCM). Terminals T1-T2-T3-T4-T5-T6-T7-T8-T9

HP Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (14 to 10)	1x (12 to 10)	1x (10)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 1/0)	1x (4 to 2/0)	1x (2 to 3/0)	1x (1 to 2/0)
220 to 240	1x (14 to 10)	1x (12 to 10)	1x (10)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 1/0)	1x (4 to 2/0)	1x (3 to 2/0)	1x (2 to 2/0)
380 to 416	1x (14 to 10)	1x (14 to 10)	1x (14 to 10)	1x (12 to 10)	1x (10)	1x (10)	1x (8 to 2)	1x (6 to 2)	1x (6 to 2)	1x (4 to 1/0)
440 to 480	1x (14 to 10)	1x (14 to 10)	1x (14 to 10)	1x (12 to 10)	1x (12 to 10)	1x (10)	1x (10 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 2)
600	1x (14 to 10)	1x (14 to 10)	1x (14 to 10)	1x (14 to 10)	1x (12 to 10)	1x (12 to 10)	1x (10)	1x (10 to 2)	1x (8 to 2)	1x (8 to 2)

HP Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (2/0 to 3/0)	1x (3/0 to 300)	1x (250 to 300)	2x (1/0 to 300)	2x (3/0 to 350)	-----	-----	-----	-----	-----	-----
220 to 240	1x (1/0 to 2/0)	1x (3/0)	1x (4/0 to 300)	1x (300)	2x (2/0 to 300)	2x (4/0 to 350)	-----	-----	-----	-----	-----
380 to 416	1x (4 to 2/0)	1x (2 to 2/0)	1x (1/0 to 2/0)	1x (2/0 to 3/0)	1x (4/0 to 300)	1x (300)	2x (2/0 to 300)	2x (3/0 to 300)	2x (4/0 to 350)	2x (4/0 to 350)	-----
440 to 480	1x (4 to 2/0)	1x (3 to 2/0)	1x (2 to 2/0)	1x (1/0 to 3/0)	1x (2/0 to 3/0)	1x (4/0 to 300)	1x (300)	2x (1/0 to 300)	2x (2/0 to 300)	2x (3/0 to 350)	2x (4/0 to 350)
600	1x (6 to 2)	1x (4 to 2/0)	1x (3 to 2/0)	1x (2 to 3/0)	1x (1/0 to 3/0)	1x (2/0 to 3/0)	1x (4/0 to 300)	1x (250 to 300)	1x (300)	2x (1/0 to 300)	2x (2/0 to 300)

ALUMINUM CONDUCTORS for Contactor (1M-2M).

Field Wiring According to Bending Space (AWG or MCM). Terminals T1-T2-T3-T4-T5-T6-T7-T8-T9

HP Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (12 to 10)	1x (10)	1x (10)	1x (8 to 2)	1x (6 to 2)	1x (4 to 2)	1x (4 to 1/0)	1x (2 to 2/0)	1x (1/0 to 3/0)	1x (2/0)
220 to 240	1x (12 to 10)	1x (10)	1x (10)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (4 to 1/0)	1x (2 to 2/0)	1x (1 to 2/0)	1x (1/0 to 2/0)
380 to 416	1x (12 to 10)	1x (12 to 10)	1x (12 to 10)	1x (10)	1x (10)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (4 to 2)	1x (3 to 1/0)
440 to 480	1x (12 to 10)	1x (12 to 10)	1x (12 to 10)	1x (12 to 10)	1x (10)	1x (10)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (4 to 2)
600	1x (12 to 10)	1x (12 to 10)	1x (12 to 10)	1x (12 to 10)	1x (10)	1x (10)	1x (10)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)

HP Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (3/0)	Consult Factory	1x (300) 90°C *	2x (3/0 to 300)	2x (250 to 350)	-----	-----	-----	-----	-----	-----
220 to 240	1x (2/0) 90°C *	Consult Factory	1x (300)	1x (300) 90°C *	2x (4/0 to 300)	2x (300 to 350)	-----	-----	-----	-----	-----
380 to 416	1x (2 to 2/0)	1x (1/0 to 2/0)	1x (1/0 to 2/0)	1x (3/0) 90°C *	1x (300)	1x (300) 90°C *	2x (4/0 to 300)	2x (250 to 300)	2x (300 to 350)	2x (300 to 350)	-----
440 to 480	1x (3 to 2/0)	1x (2 to 2/0)	1x (2/0) 90°C *	1x (2/0 to 3/0)	1x (3/0) 90°C *	1x (300)	1x (300) 90°C *	2x (3/0 to 300)	2x (4/0 to 300)	2x (250 to 350)	2x (300 to 350)
600	1x (4 to 2)	1x (3 to 2/0)	1x (2 to 2/0)	1x (1/0 to 3/0)	1x (3/0)	1x (3/0) 90°C *	1x (300)	1x (300) 90°C *	Consult Factory	2x (3/0 to 300)	2x (4/0 to 300)

*For standard enclosure, use 90°C aluminium wire. Consult Factory for Use of Conductors Rated Lower than 90°C.

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.



REV.	DESCRIPTION	DD/MM/YY	Drawing number
2	Revised logo	18/06/18	GPX-TD602 2/2 /E
1	General Revision (added AL coverage)	10/07/17	
0	First issue	16/03/17	

	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:		Contractor Ref. No. -
Project Name: NA		Contractor Job No. -

JOCKEY PUMP

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>

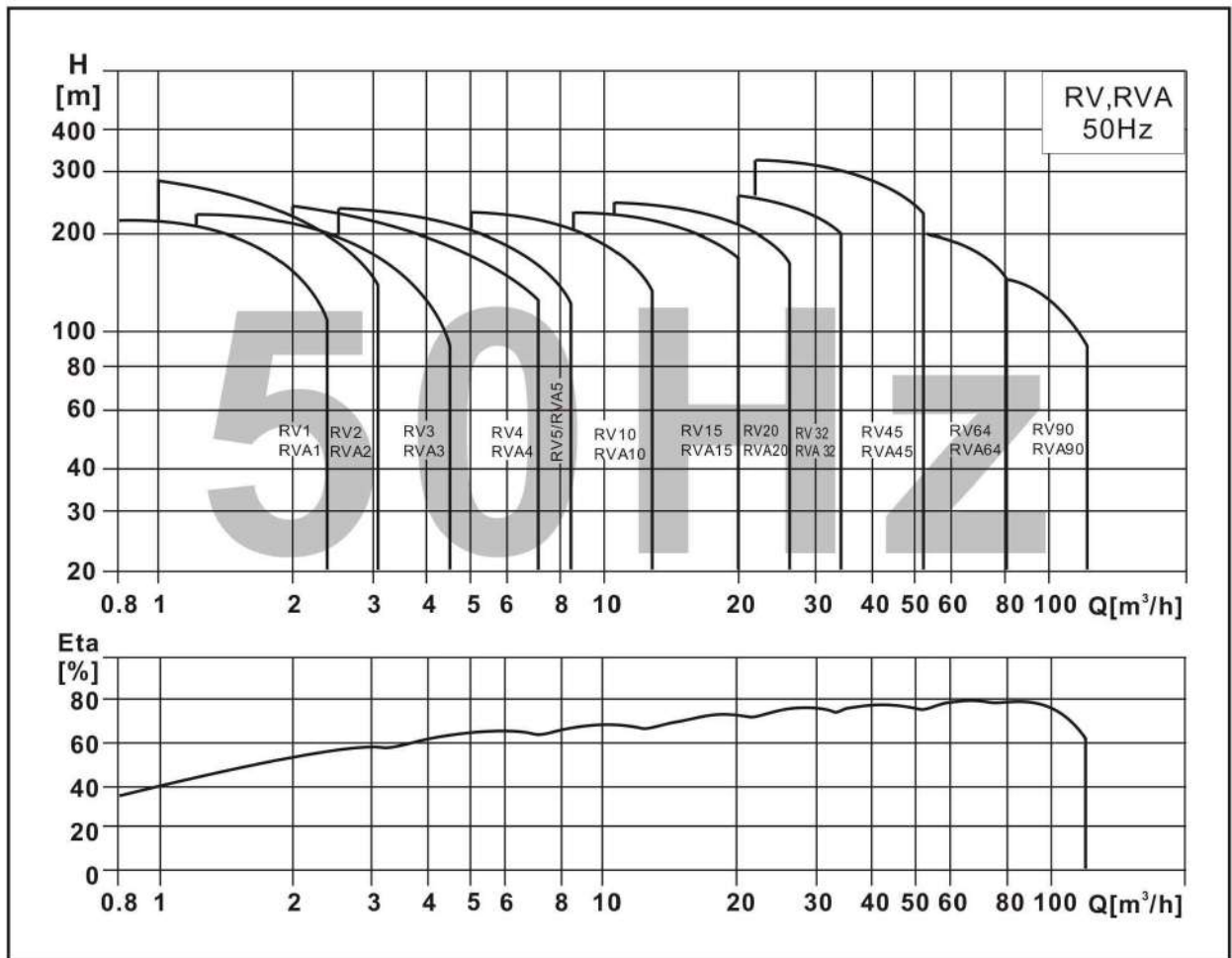


Vertical Multistage Centrifugal Pump

Product introduction

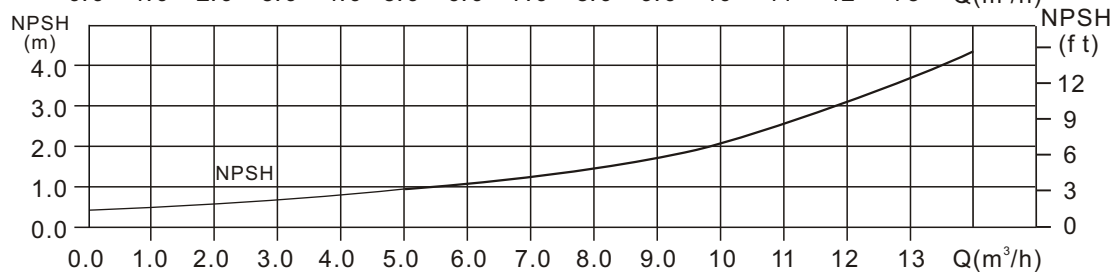
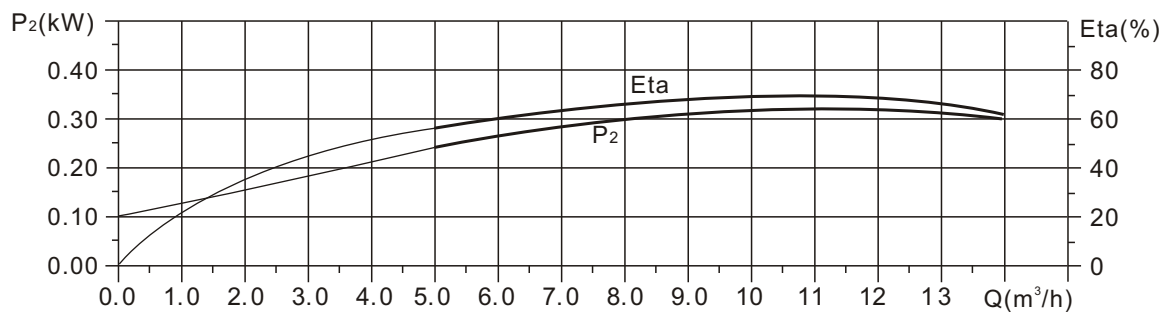
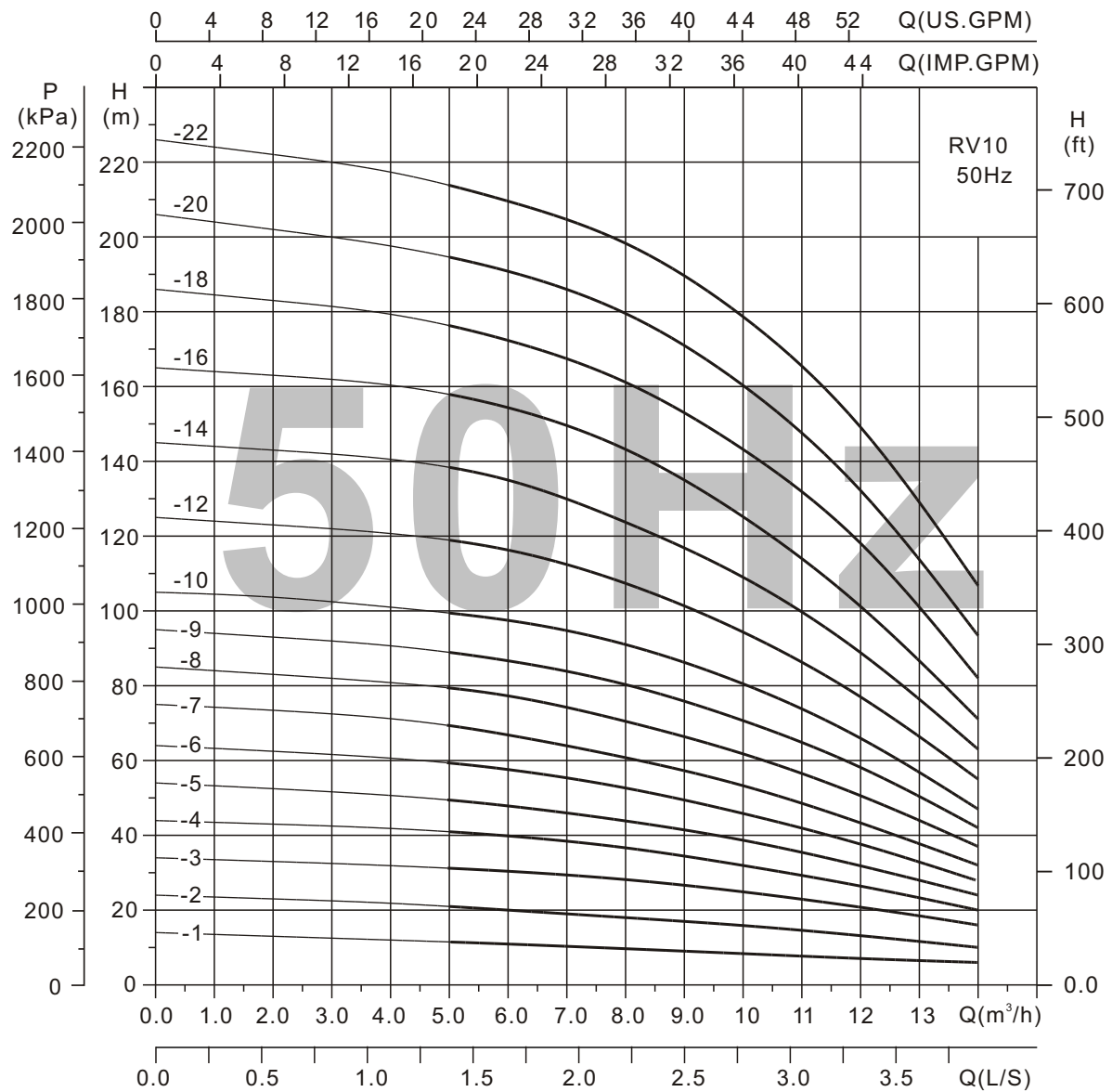
Vertical Multistage Centrifugal Pump

Performance range



Performance Curve

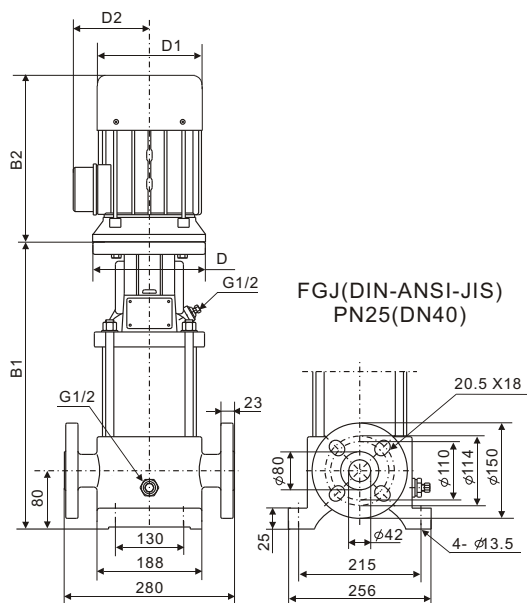
RV10-50Hz



Performance table

Model	Power P ₂ (kW)	Q (m ³ /h)	2.0	4.0	6.0	8.0	10	12	14
RV10-1	0.37	H (m)	13	12	11	9.5	8.5	7	6
RV10-2	0.75		23	22	20	18	16	13	10
RV10-3	1.1		33	32	31	28	25	21	16
RV10-4	1.5		43	42	40	37	32	27	20
RV10-5	2.2		53	51	48	44	39	32	24
RV10-6	2.2		62	61	58	53	46	38	28
RV10-7	3.0		73	72	67	61	54	43	32
RV10-8	3.0		83	81	78	71	62	51	37
RV10-9	3.0		93	91	87	81	71	59	42
RV10-10	4.0		104	101	98	91	81	67	47
RV10-12	4.0		123	121	117	108	95	78	55
RV10-14	5.5		143	141	136	124	110	90	63
RV10-16	5.5		163	161	154	143	125	102	71
RV10-18	7.5		183	179	173	161	144	118	82
RV10-20	7.5		202	198	191	180	160	133	93
RV10-22	7.5		222	217	209	198	178	149	106

Installation sketch



Dimensions and weights

Model	Dimensions(mm)						Weight (kg)
	B1	B2	B1+B2	D	D1	D2	
RV10-1	322	205	527	—	133	102	38
RV10-2	352	205	557	—	133	102	40
RV10-3	388	241	629	—	154	111	43
RV10-4	418	241/293	659/711	—	154	111	50
RV10-5	456	275/293	731/749	—	177	116	53
RV10-6	486	275/293	761/779	—	177	116	55
RV10-7	516	293	791	—	177	116	60
RV10-8	546	293	818	—	177	116	61
RV10-9	576	293	848	—	177	116	63
RV10-10	626	305	931	—	197	148	65
RV10-12	686	305	991	—	197	148	68
RV10-14	761	390	1151	300	275	210	98
RV10-16	821	390	1211	300	275	210	100
RV10-18	881	390	1271	300	275	210	125
RV10-20	941	390	1331	300	275	210	128
RV10-22	1001	390	1361	300	275	210	130



TORNATECH

Project: _____

Customer: _____

Engineer: _____

Pump Manufacturer: _____

Technical Data Submittal Document

Model JP3

Across the Line Start
Jockey Pump Controller



Contents:

Data Sheets

Dimensional Data

Wiring Schematics

Field Connections

Note: The drawings included in this package are for controllers covered under our standard offering. Actual AS BUILT drawings may differ from what is shown in this package.



N.Y.C.
APPROVED



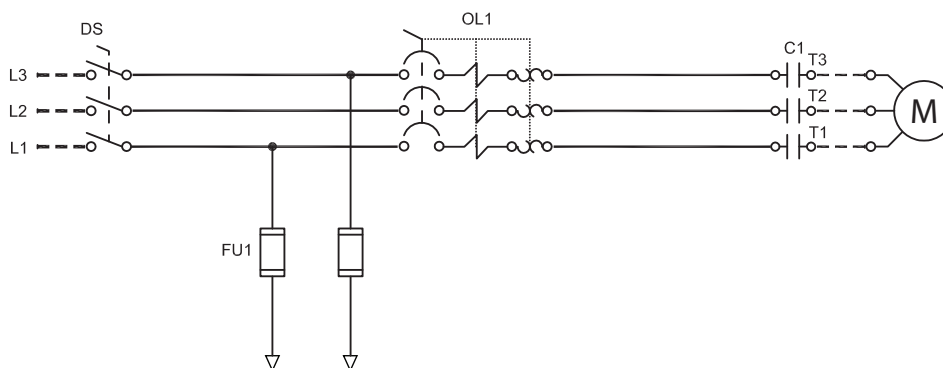
August 2018



TORNATECH

Technical Data

Model JP3 Jockey Pump Controller



N.Y.C.
APPROVED



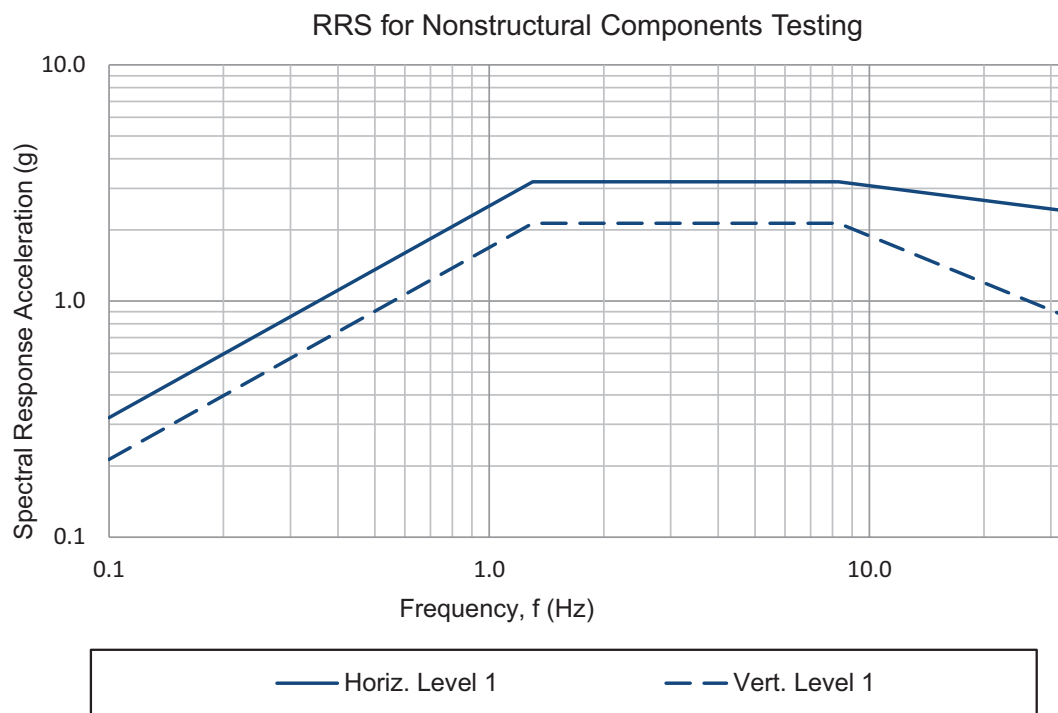
Listing	Underwriters Laboratory (UL)	UL508A - Industrial Pump Controllers
	CSA	CSA C22.2 No. 14 Industrial Control Equipment
	New York City	Accepted for use in the City of New York by the Department of Buildings
	Seismic Certification	See page 4 for details
	Optional	
	☐ CE Mark	Various EN, IEC & CEE directives and standards
Enclosure	Protection Rating ☐ Standard: NEMA 2 (IP31)	
	Optional ☐ NEMA 12 ☐ NEMA 4X-304 sst painted ☐ NEMA 3 ☐ NEMA 4X-304 sst brushed finish ☐ NEMA 3R ☐ NEMA 4X-316 sst painted ☐ NEMA 4 ☐ NEMA 4X-316 sst brushed finish	
	Accessories • Wall mounting lugs (x4)	Paint Specifications • Red RAL3002 • Powder coating • Glossy textured finish



Fuseless Motor Starter	• Main disconnect – padlockable – rotary type handle – door interlocked • Thermo-magnetic motor protector • Contactor		
Control Circuit	• 24V.AC		
iPD+ Operator Interface	• Solid state controls • All adjustments on door front • Navigation pushbuttons		
Pressure Sensing	• Pressure transducer for fresh water application 316 stainless steel construction • Rated for 0-600psi working pressure • Pressure sensing line connection 1/4" Male NPT		
Visual Indications	• Manual motor start/run LED • Automatic motor start/run LED • Motor overload • Pressure reading • Start pressure • Stop pressure • System pressure • System pressure diagnostic LED's • Green: system pressure at or above stop pressure • Yellow: system pressure between start and stop pressure • Red: system pressure at or below start pressure • AUTO mode • OFF mode		
Timers	• Minimum run timer (off delay) • Delay start timer (on delay) • Visual countdown		
Counters	• Pump start counter • Elapsed timer meter (hours / non-resettable)		
Operators	• OFF-AUTO pushbutton • Start and Stop pushbutton		
Operation	Automatic Start	Start on pressure drop	
	Manual Start	Start pushbutton	
	Stopping	Stop pushbutton	
	Timers	Field adjustable & visual countdown	• Minimum run timer (off delay) • Delay start timer (on delay)



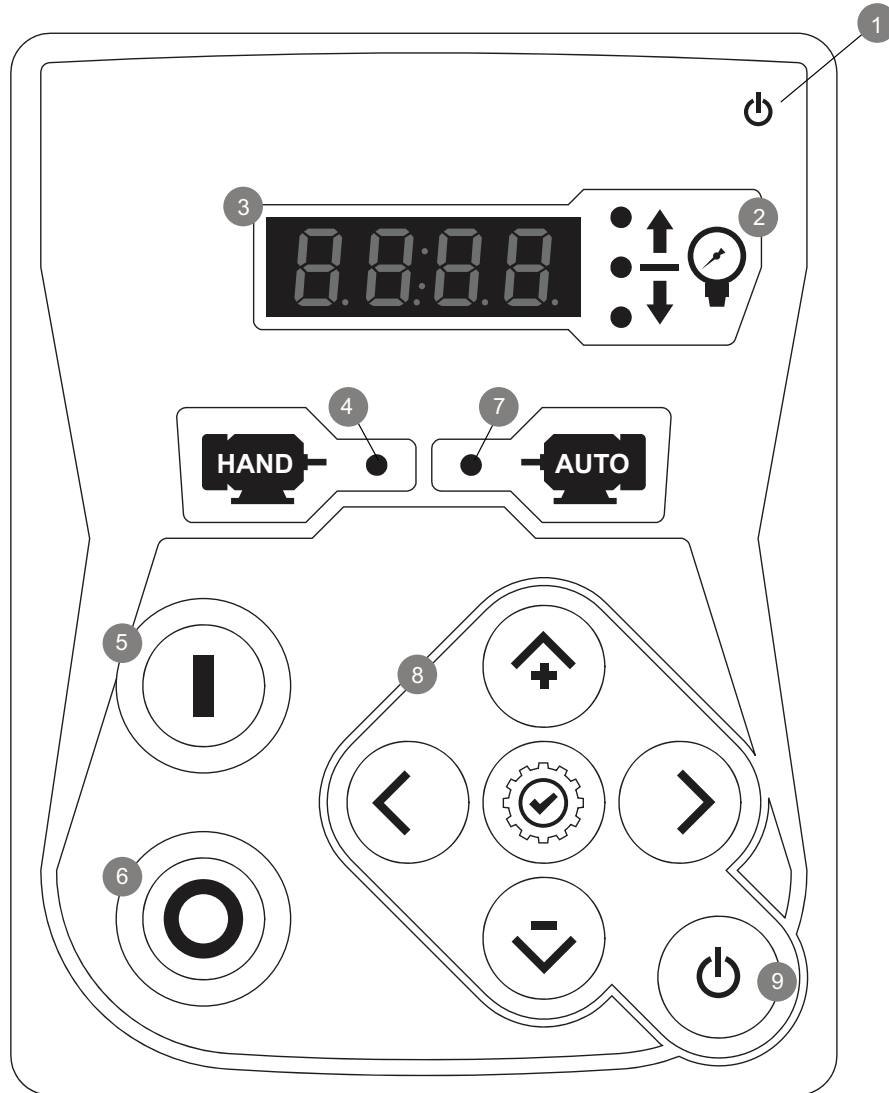
Seismic Certification	Seismic Certification Company	TRU Compliance, LLC A Tobalski Watkins Affiliate					TWEI Project No.: 15014				
	Mounting details	Rigid wall mounting									
	Seismic Information	Building Code	Test Criteria	Seismic Parameters	S _{Ds}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
		IBC 2015, CBC 2016	ICC-ES AC156	ASCE 7-10 Chapter 13	2.0	1.0	1.5	3.20	2.40	1.33	0.53
					3.2	0.0	1.5	3.20	1.28	2.13	0.85



Notes:

- Components are tested in accordance with ICC-ES AC156, IBC 2015 & CBC 2016.
- OSHPD Special Seismic Certification Preapproval (OSP)

iPD+ Operator Interface



- | | |
|-----------------------|-------------------------|
| 1 - Power on LED | 6 - STOP pushbutton |
| 2 - System status LED | 7 - Auto start LED |
| 3 - Digital display | 8 - Navigation keypad |
| 4 - Hand start LED | 9 - ON - OFF pushbutton |
| 5 - START pushbutton | |

	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:		Contractor Ref. No. -
Project Name: NA		Contractor Job No. -

FLOW METER

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>



GERAND ENGINEERING

"MODEL G" FIRE PUMP TEST METERS

Accurate Pump Performance and Quality Service for 50 Years

NEW

**BEST VALUE
IN THE
INDUSTRY**

**5 YEAR
WARRANTY**

**MANUFACTURED
IN THE USA**

**HIGH GRADE
MATERIALS:**

*CARBON STEEL,
STAINLESS STEEL,
EPOXY AND
MONEL*

FM

APPROVED

MODEL-G METERS

-- RATING 500 PSI --
(Buttweld, Grooved,
300# Flanged)

-- RATING 275 PSI --
(150# Flanged)

CALIBRATED VENTURI &
ATTACHED GPM METER

4½" DIAL METER
MOUNTS ON
VENTURI BRACKET



**ADDITIONAL SIZES LISTED
AT WWW.GERAND.COM**

PUMP GPM	PIPE SIZE	VENTURI STYLE	METER RANGE (GPM)	VENTURI LENGTH (BUTTWELD OR GROOVED)	VENTURI LENGTH (150# FLANGED)	VENTURI LENGTH (300# FLANGED)
50	2"	685	25-100	4½" THREADED	-	-
100	2 1/2"	746	50-200	3" BUTTWELD 4" GROOVED	9½"	10"
250	4"	744	125-500	2½" BUTTWELD 2½" GROOVED	9½"	10½"
300	4"	744	150-600			
450	4"	744	225-900	5"	12"	13½"
500	5"	715	250-1000			
500	6"	743	250-1000			
750	6"	743	375-1500			
1000	6"	743	500-2000	6"	13"	14½"
1250	6"	743	625-2500			
1500	8"	750	750-3000	7"	15"	16½"
2000	8"	750	1000-4000			
2500	8"	750	1250-5000			

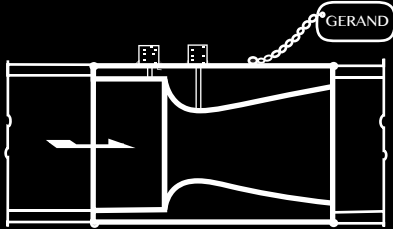
WWW.GERAND.COM FOR MORE INFORMATION

*Venturi available in Raised or Flat Face; Steel, Stainless Steel or Monel

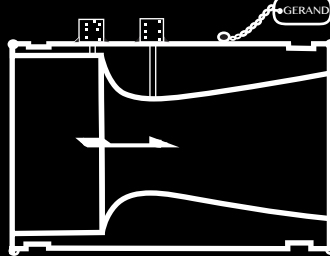
**Dual LPM/GPM Scales Available

VENTURI STYLES

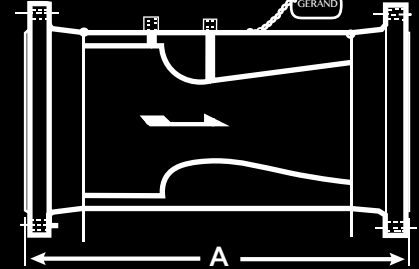
BUTTWELD



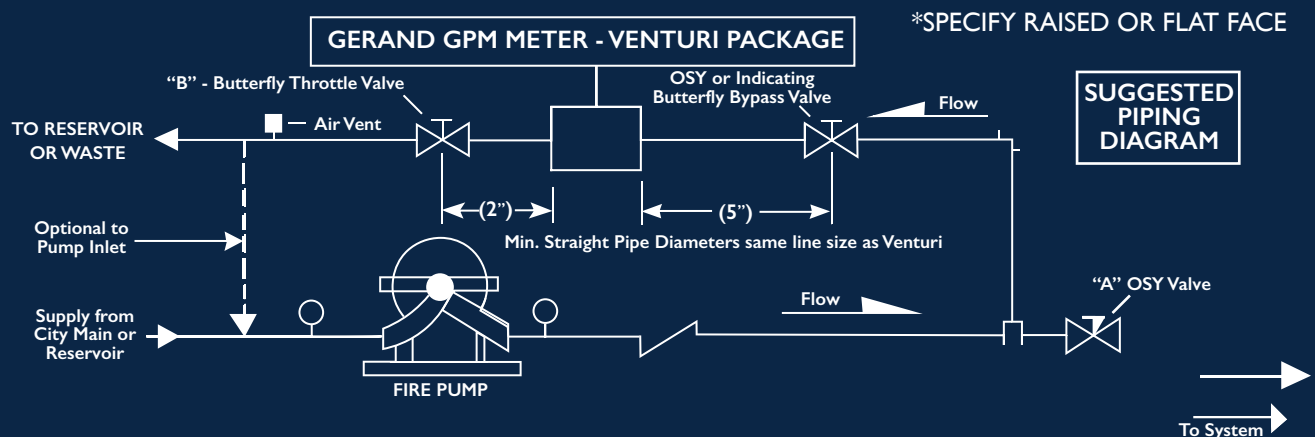
GROOVED



FLANGED



OPERATING INSTRUCTIONS



1. Close system OSY valve "A"
2. Open by-pass valve and "B" butterfly throttle valve
3. Purge meter, located on venturi, as follows:
 - a) Open station shut-off valves on venturi & vent valves attached to meter. When a steady stream of water passes through hose, meter is purged of air.
 - b) Close the vent valves after purging.

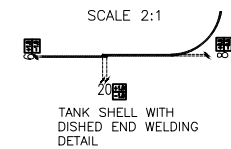
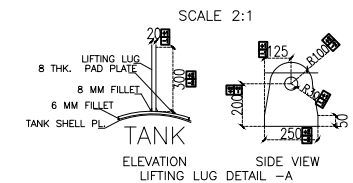
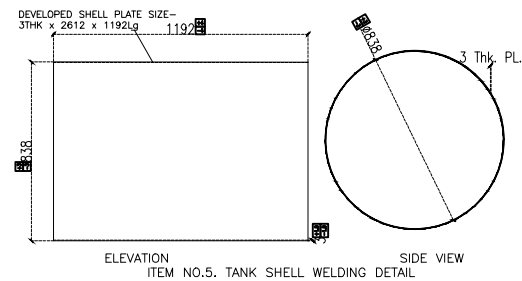
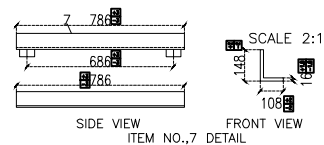
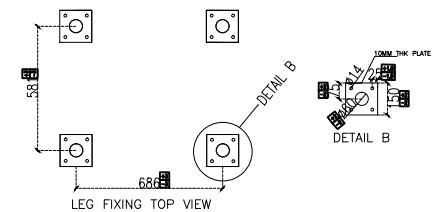
4. Start the fire pump, and read meter in GPM.
5. Refer to pump GPM requirement and adjust throttle valve to meet the requirement.
6. After the test, open valve "A" and close the by-pass and "B" valves.



	Vendor Ref. No. NIL	
	Vendor Doc. No. A	
Contractor Name:		Contractor Ref. No. -
Project Name: NA		Contractor Job No. -

DIESEL TANK

0	Issued for approval	LL	PG		
<i>Rev.</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>	<i>Date</i>



PAINTING SPECIFICATION
RAL-3002 RED COLOUR

				DIESEL TANK DRAWING				180 GAL.	
Worker	Revise	Partition	Signature	Date					
Design			Standardized		Drawing N.		Weight	Scale	
Drawing			HASSAN MAIEN		W	D	T	004	
Review			HAMZA NIDAL						
Process			Audit		DATE		1/8/2018		WATEX PUMPS INDUSTRIES UAE - AJMAN - NEW STREET
INDUSTRIAL AREA - AJMAN									