

DESIGN ENVELOPE 6800Q | QUINTAPLEX BOOSTER PACKAGES | (5 DUTY PUMPS OR 4 DUTY + 1 STANDBY PUMP) | SUBMITTAL

File No: 100.614IN
Date: MAY 31, 2024
Supersedes: NEW
Date: NEW

Job: _____ Representative: _____
Order No: _____ Date: _____
Contractor: _____ Submitted by: _____ Date: _____
Engineer: _____ Approved by: _____ Date: _____

BOOSTER PACKAGE DESIGN DATA

Tag: _____ Model: _____
Operation: 5 Duty 4 Duty + 1 Standby
Total Flow: _____ L/s (m³/hr) Flow per Pump: _____ L/s (m³/hr)
Suction (Supply) Pressure: _____ m (bar)
NPSHr at Design: _____ m (bar)
Boost Pressure (Head): _____ m (bar)
Discharge Pressure: _____ m (bar)
Total Installed Power: _____ kW
Absorbed Power at Design: _____ kW
Efficiency at Design: _____ %
Liquid: Water Max Temperature: 65°C ± 2 (150°F ± 4)
 Other: _____ Max Temperature: _____ °F (°C)
Specific Gravity: _____ Viscosity: _____ lbf*s/ft² (Pa*s)

NOTE: Test tolerance according to ISO 9906 Grade 2B
±8% on measured flow and ±5% on measured head

BOOSTER PACKAGE CONSTRUCTION DATA

Pump Type: 4700Q (Vertical Multi Stage)
Pump Construction: Full Stainless Steel
Piping Material: 304 Stainless Steel
Base & Stanchion Material: 304 Stainless Steel
Suction Valve Type:
 Ball Valve (less than DN50)
 Butterfly Valve (greater than or equal to DN50)
Discharge Valve Type:
 Check (NRV) + Ball Valve (less than DN50)
 Check (NRV) + Butterfly Valve (greater than or equal to DN50)
Suction Connection Orientation: Right Left
Discharge Connection Orientation: Right Left
System Connection Type: Flanged
Suction Flange Type: PN16
Discharge Flange Type: PN16
 PN25

MOTOR DATA

Motor Type (Efficiency): Induction (IE3)
 Permanent Magnet (IE5)
Voltage: 06: 400-415/3/50 03: 380/3/50
 05: 400/3/50 08: 440/3/50
Phase: 3 **Frequency:** 60 Hz **Enclosure:** TEFC

NOTE:
• Booster electrical supply is 50Hz

DRIVE DATA

Drive Type: VFD (Induction Motors)
 ECM (Permanent Magnet Motors)
Enclosure: IP55
EMI/RFI Control: Integrated filter designed to meet EN61800-3
Harmonic Suppression: Integrated DC link reactors (in all VFDs and 112 frame Permanent Magnet Motors)
Cooling: Fan-cooled through back channel
Ambient temperature:
-10°C to +45°C (-14°F to +113°F): Permanent Magnet models
-10°C to +40°C (-14°F to +104°F): IVS models up to 1000m (3280 ft) above sea level

CONTROL PANEL DATA

CE labelled
IP 54 Enclosure
PLC Controlled
4.3" Color Touchscreen
Door Interlocked Main Disconnect
MPCB (motor protection circuit breaker)
Power on Indication
Motor Run Indication
Virtual Hand-Off-Auto (HOA) for each pump
Flash Memory Storage
Modbus RTU serial communication

CONTROLS CAPABILITIES**Safety Features:**

- High Suction Pressure Shutdown
- Low Suction Shutdown w/ Auto Restart
- End of Curve Protection
- Soft Fill Mode
- Emergency Power Mode

Conformance to ASHRAE 90.1 Section 10.4:

- No-flow shutdown
- Pressure setback mode

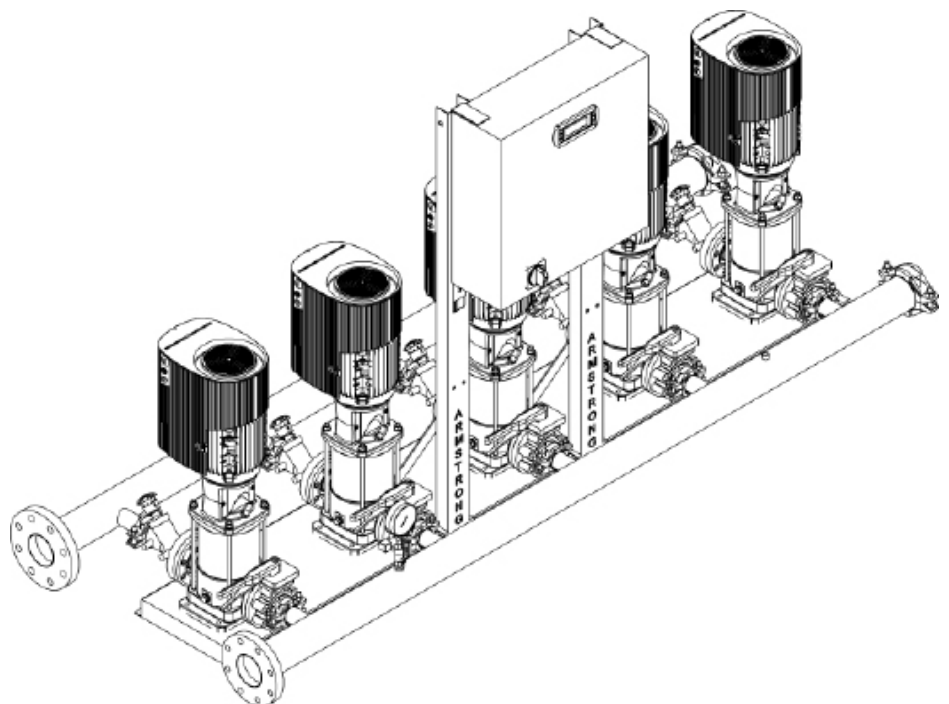
Convenience Features:

- Field Adjustable Set Points, Alarms and Timers
- Alternate Setpoints
- Auto Alternation of Pumps
- Minimal Run Timer
- Pump On Delay Timer
- Pump Switch Over (in case of lead pump failure)
- No-flow pressure optimization

OPTIONAL

BMS Communication Protocol: BACnet/IP
 BACnet MS/TP

- Low Suction Level Shutdown
- Float Switch
- Remote Pressure Transducer
- Redundant Pressure Transducer
- Certified Test Report

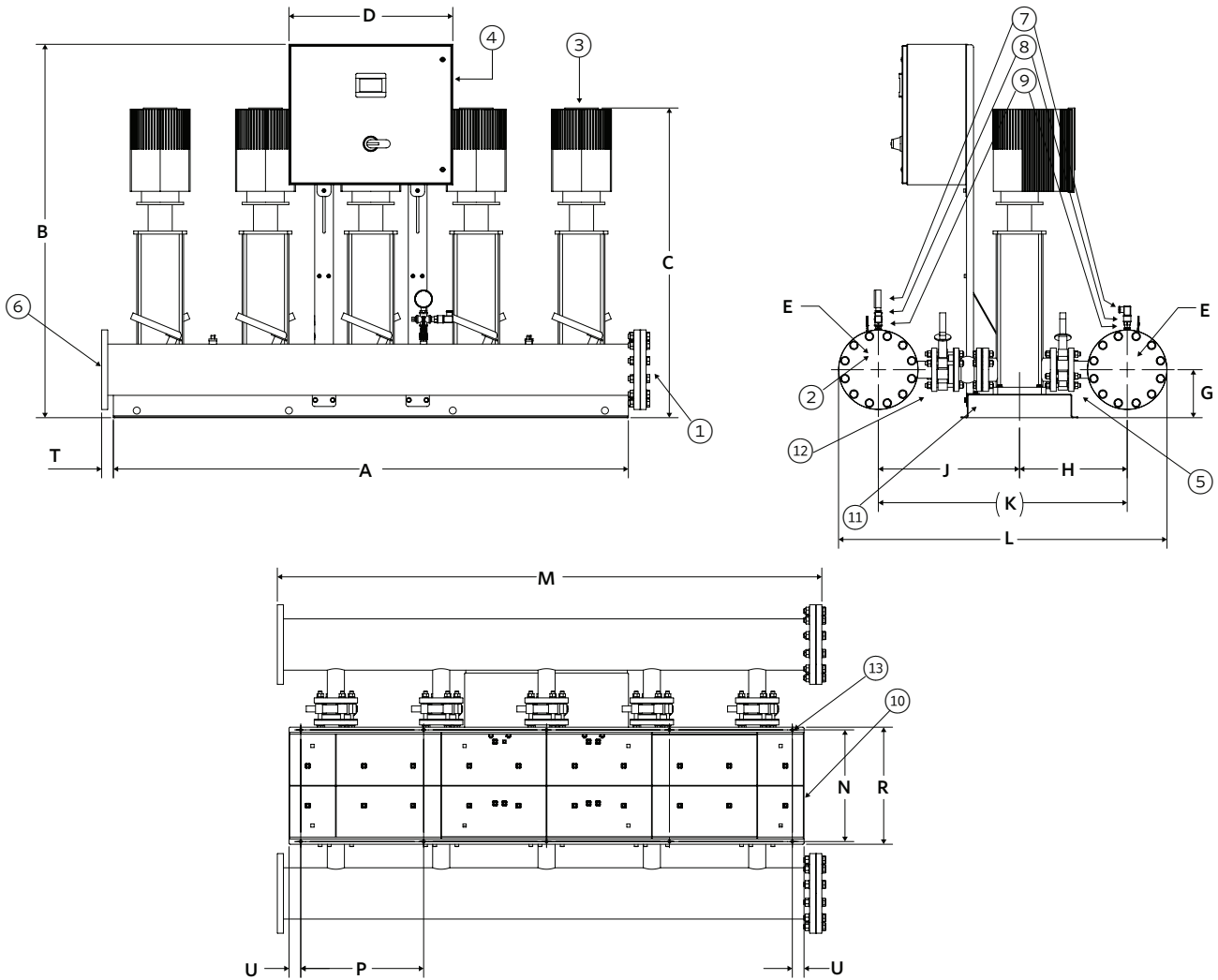


DESIGN ENVELOPE (PERMANENT MAGNET) CAPABILITY DATA

DESIGN ENVELOPE MODEL		VMS MODEL	POWER PER PUMP (kw)	MAX WORKING PRESSURE (bar)	MAX FLOW L/s (m ³ /hr)		MAX HEAD m (bar)	BEP EFFICIENCY (%)	MOTOR FRAME	DRIVER TYPE
DUTY-DUTY	DUTY-STANDBY				DUTY-DUTY	DUTY-STANDBY				
QPR-532011-XXD	QPR-432011-XXS	QVMS 32:01-1A	3	16	68.6 (246.9)	54.9 (197.5)	8.3 (0.8)	69.0%	90	DEPM
QPR-532010-XXD	QPR-432010-XXS	QVMS 32:01A	4	16	68.6 (246.9)	54.9 (197.5)	16 (1.6)	71.6%	90	DEPM
QPR-532022-XXD	QPR-432022-XXS	QVMS 32:02-2A	5.5	16	68.6 (246.9)	54.9 (197.5)	16.7 (1.6)	69.0%	90	DEPM
QPR-532032-XXD	QPR-432032-XXS	QVMS 32:03-2A	7.5	16	68.6 (246.9)	54.9 (197.5)	32.8 (3.2)	71.6%	112	DEPM
QPR-532042-XXD	QPR-432042-XXS	QVMS 32:04-2A	11	16	68.6 (246.9)	54.9 (197.5)	48.9 (4.8)	71.6%	112	DEPM
QVR-532052-XXD	QVR-432052-XXS	QVMS 32:05-2A	15	16	67.2 (242.1)	53.8 (193.6)	62.5 (6.1)	71.6%	160M	DE IVS
QVR-532060-XXD	QVR-432060-XXS	QVMS 32:06A	18.5	25	67.1 (241.4)	53.7 (193.2)	92.3 (9.1)	71.6%	160L	DE IVS
QVR-532082-XXD	QVR-432082-XXS	QVMS 32:08-2A	22	25	67.3 (242.3)	53.8 (193.8)	109.2 (10.7)	71.6%	180M	DE IVS
QVR-532102-XXD	QVR-432102-XXS	QVMS 32:10-2A	30	25	67.6 (243.4)	54.1 (194.7)	141.3 (13.9)	71.6%	200L	DE IVS
QPR-542011-XXD	QPR-442011-XXS	QVMS 42:01-1A	5.5	16	92.9 (334.3)	74.3 (267.4)	17.3 (1.7)	70.6%	90	DEPM
QPR-542010-XXD	QPR-442010-XXS	QVMS 42:01A	7.5	16	92.9 (334.3)	74.3 (267.4)	20.7 (2)	70.6%	112	DEPM
QPR-542022-XXD	QPR-442022-XXS	QVMS 42:02-2A	11	16	92.9 (334.3)	74.3 (267.4)	34.7 (3.4)	70.6%	112	DEPM
QVR-542020-XXD	QVR-442020-XXS	QVMS 42:02A	15	16	91.1 (327.8)	72.8 (262.2)	39.8 (3.9)	70.6%	160M	DE IVS
QVR-542030-XXD	QVR-442030-XXS	QVMS 42:03A	18.5	16	91.1 (327.8)	72.8 (262.2)	59.8 (5.9)	70.6%	160L	DE IVS
QVR-542042-XXD	QVR-442042-XXS	QVMS 42:04-2A	22	25	89.8 (323.2)	71.8 (258.5)	71.7 (7)	70.6%	180M	DE IVS
QVR-542050-XXD	QVR-442050-XXS	QVMS 42:05A	30	25	90.2 (324.7)	72.1 (259.7)	97.7 (9.6)	70.6%	200L	DE IVS
QVR-542060-XXD	QVR-442060-XXS	QVMS 42:06A	37	25	91.4 (329.1)	73.1 (263.3)	120.5 (11.8)	70.6%	200L	DE IVS
QVR-542070-XXD	QVR-442070-XXS	QVMS 42:07A	45	25	91.6 (329.7)	73.3 (263.7)	141 (13.8)	70.6%	225M/S	DE IVS
QPR-565011-XXD	QPR-465011-XXS	QVMS 65:01-1A	7.5	16	128.1 (461.3)	102.5 (369.1)	15.9 (1.6)	67.0%	112	DEPM
QPR-565010-XXD	QPR-465010-XXS	QVMS 65:01A	11	16	128.6 (462.9)	102.9 (370.3)	25.1 (2.5)	68.3%	112	DEPM
QVR-565022-XXD	QVR-465022-XXS	QVMS 65:02-2A	15	16	125.7 (452.3)	100.5 (361.9)	30.6 (3)	67.0%	160M	DE IVS
QVR-565020-XXD	QVR-465020-XXS	QVMS 65:02AE	18.5	16	124.8 (449.2)	99.8 (359.4)	47.2 (4.6)	68.3%	160L	DE IVS
QVR-565032-XXD	QVR-465032-XXS	QVMS 65:03-2A	22	16	126.4 (454.9)	101.1 (363.9)	55.4 (5.4)	68.2%	180M	DE IVS
QVR-565030-XXD	QVR-465030-XXS	QVMS 65:03A	30	16	126.8 (456.4)	101.4 (365.1)	73.1 (7.2)	68.3%	200L	DE IVS
QVR-565042-XXD	QVR-465042-XXS	QVMS 65:04-2A	37	16	126.4 (454.9)	101.1 (363.9)	79.9 (7.8)	68.2%	200L	DE IVS
QVR-565052-XXD	QVR-465052-XXS	QVMS 65:05-2A	45	16	126.4 (454.9)	101.1 (363.9)	104.5 (10.2)	68.2%	225M/S	DE IVS
QPR-585011-XXD	QPR-485011-XXS	QVMS 85:01-1A	11	16	171.4 (617.1)	137.1 (493.7)	8.2 (0.8)	65.2%	112	DEPM
QVR-585010-XXD	QVR-485010-XXS	QVMS 85:01A	15	16	167.7 (603.6)	134.1 (482.9)	19.4 (1.9)	66.4%	160M	DE IVS
QVR-585022-XXD	QVR-485022-XXS	QVMS 85:02-2A	18.5	16	168.1 (605.1)	134.5 (484.1)	15.8 (1.5)	65.3%	160L	DE IVS
QVR-585021-XXD	QVR-485021-XXS	QVMS 85:02-1A	22	16	168.6 (607.1)	134.9 (485.6)	27.8 (2.7)	64.8%	180M	DE IVS
QVR-585020-XXD	QVR-485020-XXS	QVMS 85:02A	30	16	168.6 (607.1)	134.9 (485.6)	39.2 (3.8)	66.4%	200L	DE IVS
QVR-585031-XXD	QVR-485031-XXS	QVMS 85:03-1A	37	16	168.6 (607.1)	134.9 (485.6)	47.5 (4.7)	64.8%	200L	DE IVS
QVR-585042-XXD	QVR-485042-XXS	QVMS 85:04-2A	45	16	169.1 (608.6)	135.2 (486.9)	54.9 (5.4)	65.1%	225M/S	DE IVS

Notes:

- 1 -xx(D or S) in the model number represents booster voltage.
400-415/3/50: -06(D or S)
380/3/50: -03(D or S)
400/3/50: -05(D or S)
440/3/50: -08(D or S)



Quintaplex Booster Package

ITEM	DESCRIPTION
①	304 Stainless steel suction header
②	304 Stainless steel discharge header
③	Stainless Steel pump with integrated controls (IVS or DEPM)
④	Control Panel with PLC & Full Colour Touch HMI
⑤	Suction isolation valve
⑥	Flanged connections
⑦	Pressure gauge
⑧	Pressure transducer
⑨	Pressure gauge isolation valve
⑩	Stainless steel base and panel support
⑪	Discharge check (NRV) valve
⑫	Discharge isolation valve
⑬	6x12.50 bolting /AV mounting holes

Notes:

- 1 Standard right hand orientation illustrated
- 2 All pumps are the same

DESIGN ENVELOPE MODEL (DUTY-DUTY)	DESIGN ENVELOPE MODEL (DUTY-STAND- BY)	VMS MODEL	A*	B*	C**	D*	HEADER FLANGE RATING	HEADER SIZE E	G*	H**	J**	K*	L*	M*	N**	P**	R**	T*	U*	WEIGHT kg
QPR-532011-XXD	QPR-432011-XXS	QVMS 32:01-1A	2200.0	1560.0	930.0	700.0	PN16	DN 200	205.0	460.0	603.2	1063.2	1403.2	2326.0	641.0	525.0	664.0	50.0	50.0	768
QPR-532010-XXD	QPR-432010-XXS	QVMS 32:01A	2200.0	1560.0	930.0	700.0	PN16	DN 200	205.0	460.0	603.2	1063.2	1403.2	2326.0	641.0	525.0	664.0	50.0	50.0	813
QPR-532022-XXD	QPR-432022-XXS	QVMS 32:02-2A	2200.0	1560.0	1000.0	700.0	PN16	DN 200	205.0	460.0	603.2	1063.2	1403.2	2326.0	641.0	525.0	664.0	50.0	50.0	901
QPR-532032-XXD	QPR-432032-XXS	QVMS 32:03-2A	2200.0	1560.0	1148.0	700.0	PN16	DN 200	205.0	460.0	603.2	1063.2	1403.2	2326.0	641.0	525.0	664.0	50.0	50.0	1001
QPR-532042-XXD	QPR-432042-XXS	QVMS 32:04-2A	2200.0	1560.0	1323.0	700.0	PN16	DN 200	205.0	460.0	603.2	1063.2	1403.2	2326.0	641.0	525.0	664.0	50.0	50.0	1383
QVR-532052-XXD	QVR-432052-XXS	QVMS 32:05-2A	2200.0	1560.0	1541.0	700.0	PN16	DN 200	205.0	460.0	603.2	1063.2	1403.2	2326.0	641.0	525.0	664.0	50.0	50.0	1886
QVR-532060-XXD	QVR-432060-XXS	QVMS 32:06A	2200.0	1560.0	1611.0	700.0	PN25	DN 200	205.0	460.0	603.2	1063.2	1423.2	2332.0	641.0	525.0	664.0	50.0	50.0	2136
QVR-532082-XXD	QVR-432082-XXS	QVMS 32:08-2A	2200.0	1560.0	1886.0	700.0	PN25	DN 200	205.0	460.0	603.2	1063.2	1423.2	2332.0	641.0	525.0	664.0	50.0	50.0	2825
QVR-532102-XXD	QVR-432102-XXS	QVMS 32:10-2A	2200.0	1560.0	2078.0	700.0	PN25	DN 200	205.0	460.0	603.2	1063.2	1423.2	2332.0	641.0	525.0	664.0	50.0	50.0	3170
QPR-542011-XXD	QPR-442011-XXS	QVMS 42:01-1A	2500.0	1560.0	986.0	700.0	PN16	DN 250	240.0	492.5	665.7	1158.2	1563.2	2578.0	727.0	600.0	750.0	25.0	50.0	1010
QPR-542010-XXD	QPR-442010-XXS	QVMS 42:01A	2500.0	1560.0	1064.0	700.0	PN16	DN 250	240.0	492.5	665.7	1158.2	1563.2	2578.0	727.0	600.0	750.0	25.0	50.0	1090
QPR-542022-XXD	QPR-442022-XXS	QVMS 42:02-2A	2500.0	1560.0	1251.0	700.0	PN16	DN 250	240.0	492.5	665.7	1158.2	1563.2	2578.0	727.0	600.0	750.0	25.0	50.0	1472
QVR-542020-XXD	QVR-442020-XXS	QVMS 42:02A	2500.0	1560.0	1399.0	700.0	PN16	DN 250	240.0	492.5	665.7	1158.2	1563.2	2578.0	727.0	600.0	750.0	25.0	50.0	1942
QVR-542030-XXD	QVR-442030-XXS	QVMS 42:03A	2500.0	1560.0	1678.0	700.0	PN16	DN 250	240.0	492.5	665.7	1158.2	1563.2	2578.0	727.0	600.0	750.0	25.0	50.0	2192
QVR-542042-XXD	QVR-442042-XXS	QVMS 42:04-2A	2500.0	1560.0	1695.0	700.0	PN25	DN 250	240.0	492.5	665.7	1158.2	1583.2	2578.0	727.0	600.0	750.0	25.0	50.0	2567
QVR-542050-XXD	QVR-442050-XXS	QVMS 42:05A	2500.0	1560.0	1827.0	700.0	PN25	DN 250	240.0	492.5	665.7	1158.2	1583.2	2578.0	727.0	600.0	750.0	25.0	50.0	3178
QVR-542060-XXD	QVR-442060-XXS	QVMS 42:06A	2500.0	1560.0	1893.0	700.0	PN25	DN 250	240.0	492.5	665.7	1158.2	1583.2	2578.0	727.0	600.0	750.0	25.0	50.0	3403
QVR-542070-XXD	QVR-442070-XXS	QVMS 42:07A	2500.0	1560.0	1994.0	700.0	PN25	DN 250	240.0	492.5	665.7	1158.2	1583.2	2578.0	727.0	600.0	750.0	25.0	50.0	4510
QPR-565011-XXD	QPR-465011-XXS	QVMS 65:01-1A	2500.0	1560.0	1064.0	700.0	PN16	DN 250	240.0	499.0	722.2	1221.2	1626.2	2578.0	727.0	600.0	750.0	25.0	50.0	1121
QPR-565010-XXD	QPR-465010-XXS	QVMS 65:01A	2500.0	1560.0	1175.0	700.0	PN16	DN 250	240.0	499.0	722.2	1221.2	1626.2	2578.0	727.0	600.0	750.0	25.0	50.0	1484
QVR-565022-XXD	QVR-465022-XXS	QVMS 65:02-2A	2500.0	1560.0	1405.0	700.0	PN16	DN 250	240.0	499.0	722.2	1221.2	1626.2	2578.0	727.0	600.0	750.0	25.0	50.0	1954
QVR-565020-XXD	QVR-465020-XXS	QVMS 65:02AE	2500.0	1560.0	1405.0	700.0	PN16	DN 250	240.0	499.0	722.2	1221.2	1626.2	2578.0	727.0	600.0	750.0	25.0	50.0	2384
QVR-565032-XXD	QVR-465032-XXS	QVMS 65:03-2A	2500.0	1560.0	1625.0	700.0	PN16	DN 250	240.0	499.0	722.2	1221.2	1626.2	2578.0	727.0	600.0	750.0	25.0	50.0	2579
QVR-565030-XXD	QVR-465030-XXS	QVMS 65:03A	2500.0	1560.0	1675.0	700.0	PN16	DN 250	240.0	499.0	722.2	1221.2	1626.2	2578.0	727.0	600.0	750.0	25.0	50.0	3310
QVR-565042-XXD	QVR-465042-XXS	QVMS 65:04-2A	2500.0	1560.0	1344.0	700.0	PN16	DN 250	240.0	499.0	722.2	1221.2	1626.2	2578.0	727.0	600.0	750.0	25.0	50.0	3400
QVR-565052-XXD	QVR-465052-XXS	QVMS 65:05-2A	2500.0	1560.0	1848.0	700.0	PN16	DN 250	240.0	499.0	722.2	1221.2	1626.2	2578.0	727.0	600.0	750.0	25.0	50.0	4485
QPR-585011-XXD	QPR-485011-XXS	QVMS 85:01-1A	2500.0	1560.0	1084.0	700.0	PN16	DN 250	250.0	506.5	729.7	1236.2	1776.2	2578.0	727.0	600.0	750.0	25.0	50.0	1484
QVR-585010-XXD	QVR-485010-XXS	QVMS 85:01A	2500.0	1560.0	1231.0	700.0	PN16	DN 250	250.0	506.5	729.7	1236.2	1776.2	2578.0	727.0	600.0	750.0	25.0	50.0	1959
QVR-585022-XXD	QVR-485022-XXS	QVMS 85:02-2A	2500.0	1560.0	1434.0	700.0	PN16	DN 250	250.0	506.5	729.7	1236.2	1776.2	2578.0	727.0	600.0	750.0	25.0	50.0	2199
QVR-585021-XXD	QVR-485021-XXS	QVMS 85:02-1A	2500.0	1560.0	1560.0	700.0	PN16	DN 250	250.0	506.5	729.7	1236.2	1776.2	2578.0	727.0	600.0	750.0	25.0	50.0	2559
QVR-585020-XXD	QVR-485020-XXS	QVMS 85:02A	2500.0	1560.0	1712.0	700.0	PN16	DN 250	250.0	506.5	729.7	1236.2	1776.2	2578.0	727.0	600.0	750.0	25.0	50.0	3150
QVR-585031-XXD	QVR-485031-XXS	QVMS 85:03-1A	2500.0	1560.0	1700.0	700.0	PN16	DN 250	250.0	506.5	729.7	1236.2	1776.2	2578.0	727.0	600.0	750.0	25.0	50.0	3370
QVR-585042-XXD	QVR-485042-XXS	QVMS 85:04-2A	2500.0	1560.0	1813.0	700.0	PN16	DN 250	250.0	506.5	729.7	1236.2	1776.2	2578.0	727.0	600.0	750.0	25.0	50.0	4455

Note:

1 Tolerances are

* ±25.40 mm

** ±12.70 mm

*** ±6.35 mm

2 Dimension are in mm.

3 -xx(d or s) in the model number represents booster voltage.

400-415/3/50: -06(d or s)

380/3/50: -03(d or s)

400/3/50: -05(d or s)

440/3/50: -08(d or s)

TORONTO

23 BERTRAND AVENUE,
TORONTO, ONTARIO,
CANADA, M1L 2P3
+1 416 755 2291

BUFFALO

93 EAST AVENUE, NORTH
TONAWANDA, NEW YORK,
U.S.A., 14120-6594
+1 716 693 8813

DROITWICH SPA

POINTON WAY, STONEBRIDGE CROSS
BUSINESS PARK, DROITWICH SPA,
WORCESTERSHIRE,
UNITED KINGDOM, WR9 0LW
+44 121 550 5333

MANCHESTER

WOLVERTON STREET, MANCHESTER
UNITED KINGDOM, M11 2ET
+44 161 223 2223

BANGALORE

#18, LEWIS WORKSPACE, 3RD FLOOR,
OFF MILLERS - NANDIDURGA ROAD,
JAYAMAHAL CBD, BENSON TOWN,
BANGALORE, INDIA 560 046
+91 80 4906 3555

SHANGHAI

UNIT 903, 888 NORTH SICHUAN RD.
HONGKOU DISTRICT, SHANGHAI
CHINA, 200085
+86 21 5237 0909

BEIJING

ROOM 1612, NANYIN BUILDING NO.2
NORTH EAST THRID RING ROAD
CHAOYANG DISTRICT, BEIJING,
CHINA 100027
+86 21 5237 0909

SÃO PAULO

RUA JOSÉ SEMIÃO RODRIGUES
AGOSTINHO, 1370 GALPÃO 6 EMBU
DAS ARTES, SAO PAULO, BRAZIL
+55 11 4785 1330

LYON

93 RUE DE LA VILLETTE
LYON, 69003 FRANCE
+33 4 20 10 26 21

DUBAI

JAFZA VIEW 19, OFFICE 402
P.O.BOX 18226 JAFZA,
DUBAI - UNITED ARAB EMIRATES
+971 4 887 6775

JIMBOLIA

STR CALEA MOTILOR NR. 2C
JIMBOLIA 305400, JUD.TIMIS
ROMANIA
+40 256 360 030

FRANKFURT

WESTERBACHSTRASSE 32,
D-61476 KRONBERG IM TAUNUS
GERMANY
+49 6173 999 77 55

ARMSTRONG FLUID TECHNOLOGY®
ESTABLISHED 1934

ARMSTRONGFLUIDTECHNOLOGY.COM