

TECHNICAL BROCHURE

BBG2MKV R3



2MK/MV **impact**[™]

SUBMERSIBLE 2" SEWAGE PUMP - DUAL SEAL WITH SEAL SENSOR PROBE



Bell & Gossett

a xylem brand

FEATURES

Impeller: Non-clog 304 stainless steel and Vortex Cast Iron style, dynamically balanced with pump out vanes for mechanical seal protection.

K model designation for non-clog impeller

V model designation for vortex impeller

Casing: Cast iron 2" NPT self-cleaning design for non-clogging.

Efficient air-filled motor

Dual Mechanical Seals: For standard and Explosion Proof models, Tungsten Carbide vs. Ceramic seal faces standard on outer seals. Carbon vs. Ceramic seal faces standard on inner seals.

Seal Sensor / High Temperature Probe: Located in motor housing. If pumpage should begin to leak past both seals it indicates to pump control panel a fault has occurred. Requires MiniCAS device in the control panel.

Capable of running dry without damage to components.

Designed for continuous operation, when fully submerged.

Explosion-proof FM available as option. FM approved.

Shaft: Corrosion resistant, 400 series stainless steel. Taper lock and impeller bolt on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Grease for life bearings



Wastewater

APPLICATIONS

Specifically designed for the following uses:

- Sewage systems
- Dewatering/Effluent
- Water transfer
- Light industrial
- Commercial applications

Anywhere waste or drainage must be disposed of quickly, quietly and efficiently.

SPECIFICATIONS

Pump:

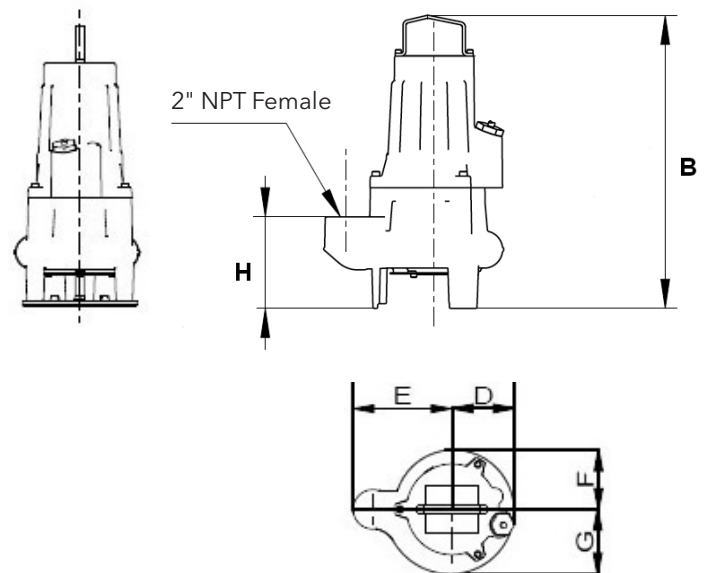
- Maximum soft solid size: 2"
- Capacities: up to 275 GPM
- Total heads: up to 82' TDH
- Discharge size: 2" NPT

Motor:

- Maximum ambient temperature: 104° F (40° C) continuous duty
- Rated for continuous duty when fully submerged
- Insulation: Class H; XP = Class F
- 60 Hertz
- Single row ball bearings
- 400 Series stainless steel tapered shaft
- Requires overload protection in panel (not included)
- Includes high temperature sensor for winding protection

AIR-FILLED MOTOR

- Efficient heat dissipation
- Run dry capability
- Class H insulation; XP = Class F
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits and can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction for precision positioning of parts and to carry thrust loads.
- High temperature winding protection
- Cord: Severe duty rated, oil and water resistant. 30 foot standard.
- O-ring: Assures positive sealing against contaminants and oil leakage.



DIMENSIONS

Model Number	Phase	B	C	D	E	F	G	H
2MK/MV	3Ø	19.80" [503]	12.17" [309]	4.69" [119]	7.48" [190]	4.53" [115]	4.92" [125]	6.18" [157]
2MK/MV XP	3Ø	19.80" [503]	12.17" [309]	4.69" [119]	7.48" [190]	4.53" [115]	4.92" [125]	6.18" [157]

MODEL AND MOTOR INFORMATION

Model No.	HP	Volts	Phase/Hz	Rated Current (Amps)	RPM	Imp. Dia. In (mm)	Insulation Class	Run Cap. (mfd/ volt)	Start Cap. (mfd/ volt)	Resistance (Ohms)	Aux. Resistance (Ohms)	Start Current (LR Amps)	Rated Motor kVA [Code]	Rated Motor Efficiency (%)	Rated Power Factor (cos phi)	Starting Torque (NM)	Max. Torque (NM)	Pump Weight (lbs.)	Cable Size with water detector and thermostats	
2MK3812AD	3.8 (2.8 Kw)	200	3/60	12.0	3450	"A" 4.41" (112 mm)	H	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0	21.0	85	14AWG/7	
2MK3813AD		230		10.0								1.38	65	6.9 [H]	82.7	0.84	22.0			25.0
2MK3814AD		460		5.0								5.52	32	6.8 [H]	82.7	0.84	22.0			25.0
2MK3815AD		575		3.8								4.69	23	6.1 [G]	82.3	0.89	20.0			22.0
2MK3012BD	3.0 (2.2 Kw)	200		10.3		"B" 4.09" (104 mm)						0.57	61	5.6 [G]	78.6	0.89	20.0			21.0
2MK3013BD		230		8.6								1.38	65	6.9 [H]	82.7	0.84	22.0			25.0
2MK3014BD		460		4.3								5.52	32	6.8 [H]	82.7	0.84	22.0			25.0
2MK3015BD		575		3.3								4.69	23	6.1 [G]	82.3	0.89	20.0			22.0
2MK2312CD	2.3 (1.7 Kw)	200		8.2		"C" 3.90" (99 mm)						0.57	61	5.6 [G]	78.6	0.89	20.0			21.0
2MK2313CD		230		6.8								1.38	65	6.9 [H]	82.7	0.84	22.0			25.0
2MK2314CD		460		3.4								5.52	32	6.8 [H]	82.7	0.84	22.0			25.0
2MK2315CD		575		2.6								4.69	23	6.1 [G]	82.3	0.89	20.0			22.0
2MK1812DD	1.8 (1.3 Kw)	200		7.7		"D" 3.70" (94 mm)						0.57	61	5.6 [G]	78.6	0.89	20.0			21.0
2MK1813DD		230		6.4								1.38	65	6.9 [H]	82.7	0.84	22.0			25.0
2MK1814DD		460		3.2								5.52	32	6.8 [H]	82.7	0.84	22.0			25.0
2MK1815DD		575		2.4								4.69	23	6.1 [G]	82.3	0.89	20.0			22.0
2MV3812AD	3.8 (2.8 Kw)	200		12.0		"A" 4.65" (118 mm)						0.57	61	5.6 [G]	78.6	0.89	20.0			21.0
2MV3813AD		230		10.0								1.38	65	6.9 [H]	82.7	0.84	22.0			25.0
2MV3814AD		460		5.0								5.52	32	6.8 [H]	82.7	0.84	22.0			25.0
2MV3815AD		575		3.8								4.69	23	6.1 [G]	82.3	0.89	20.0			22.0
2MV3012BD	3.0 (2.2 Kw)	200	10.3	"B" 4.37" (111 mm)	0.57	61	5.6 [G]	78.6	0.89	20.0	21.0									
2MV3013BD		230	8.6		1.38	65	6.9 [H]	82.7	0.84	22.0	25.0									
2MV3014BD		460	4.3		5.52	32	6.8 [H]	82.7	0.84	22.0	25.0									
2MV3015BD		575	3.3		4.69	23	6.1 [G]	82.3	0.89	20.0	22.0									
2MV2312CD	2.3 (1.7 Kw)	200	8.2	"C" 4.09" (104 mm)	0.57	61	5.6 [G]	78.6	0.89	20.0	21.0									
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2MV2314CD		460	3.4		5.52	32	6.8 [H]	82.7	0.84	22.0	25.0									
2MV2315CD		575	2.6		4.69	23	6.1 [G]	82.3	0.89	20.0	22.0									
2MV1812DD	1.8 (1.3 Kw)	200	7.7	"D" 3.86" (98 mm)	0.57	61	5.6 [G]	78.6	0.89	20.0	21.0									
2MV1813DD		230	6.4		1.38	65	6.9 [H]	82.7	0.84	22.0	25.0									
2MV1814DD		460	3.2		5.52	32	6.8 [H]	82.7	0.84	22.0	25.0									
2MV1815DD		575	2.4		4.69	23	6.1 [G]	82.3	0.89	20.0	22.0									

MODEL AND MOTOR INFORMATION

Model No.	HP	Volts	Phase/Hz	Rated Current (Amps)	RPM	Imp. Dia. In (mm)	Insulation Class	Run Cap. (mfd/volt)	Start Cap. (mfd/volt)	Resistance (Ohms)	Aux. Resistance (Ohms)	Start Current (LR Amps)	Rated Motor kVA [Code]	Rated Motor Eff. (%)	Rated Power Factor (cos phi)	Starting Torque (NIM)	Max. Torque (NIM)	Pump Weight (lbs.)	Cable Size with water detector and thermostats	
2MK3812ADX	3.8 (2.8 Kw)	200	3 / 60	12.0	3450	"A" 4.41" (112 mm)	F	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0	21.0	84	14AWG/7	
2MK3813ADX		230		10.0						0.69		65	6.9 [H]	82.7	0.84	22.0	25.0			
2MK3814ADX		460		5.0						3.06		32	6.8 [H]	82.7	0.84	22.0	25.0			
2MK3815ADX		575		3.8						4.69		23	6.1 [G]	82.3	0.89	20.0	22.0			
2MK3012BDX	3.0 (2.2 Kw)	200	3 / 60	10.3		"B" 4.09" (104 mm)		N/A	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0			21.0
2MK3013BDX		230		8.6							0.69		65	6.9 [H]	82.7	0.84	22.0			25.0
2MK3014BDX		460		4.3							3.06		32	6.8 [H]	82.7	0.84	22.0			25.0
2MK3015BDX		575		3.3							4.69		23	6.1 [G]	82.3	0.89	20.0			22.0
2MK2312CDX	2.3 (1.7 Kw)	200	3 / 60	8.2		"C" 3.90" (99 mm)		N/A	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0			21.0
2MK2313CDX		230		6.8							0.69		65	6.9 [H]	82.7	0.84	22.0			25.0
2MK2314CDX		460		3.4							3.06		32	6.8 [H]	82.7	0.84	22.0			25.0
2MK2315CDX		575		2.6							4.69		23	6.1 [G]	82.3	0.89	20.0			22.0
2MK1812DDX	1.8 (1.3 Kw)	200	3 / 60	7.7		"D" 3.70" (94 mm)		N/A	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0			21.0
2MK1813DDX		230		6.4							0.69		65	6.9 [H]	82.7	0.84	22.0			25.0
2MK1814DDX		460		3.2							3.06		32	6.8 [H]	82.7	0.84	22.0			25.0
2MK1815DDX		575		2.4							4.69		23	6.1 [G]	82.3	0.89	20.0			22.0
2MV3812ADX	3.8 (2.8 Kw)	200	3 / 60	12.0	3450	"A" 4.65" (118 mm)	F	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0	21.0	84	14AWG/7	
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2MV3012BDX	3.0 (2.2 Kw)	200	3 / 60	10.3		"B" 4.37" (111 mm)		N/A	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0			21.0
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2MV3015BDX		575		3.3							4.69		23	6.1 [G]	82.3	0.89	20.0			22.0
2MV2312CDX	2.3 (1.7 Kw)	200	3 / 60	8.2		"C" 4.09" (104 mm)		N/A	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0			21.0
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2MV2315CDX		575		2.6							4.69		23	6.1 [G]	82.3	0.89	20.0			22.0
2MV1812DDX	1.8 (1.3 Kw)	200	3 / 60	7.7		"D" 3.86" (98 mm)		N/A	N/A	N/A	0.57	N/A	61	5.6 [G]	78.6	0.89	20.0			21.0
2MV1813DDX		230		6.4							0.69		65	6.9 [H]	82.7	0.84	22.0			25.0
2MV1814DDX		460		3.2							3.06		32	6.8 [H]	82.7	0.84	22.0			25.0
2MV1815DDX		575		2.4							4.69		23	6.1 [G]	82.3	0.89	20.0			22.0

APPLICATION DATA

Maximum Working Pressure	75 PSI (5 bar) - Standard
	150 PSI (10 bar) - Explosion Proof
Maximum Submergence	66 feet (20 m)
Minimum Submergence	Fully submerged for continuous operation
Maximum Environmental Temperature	40°C (104°F) continuous operation

CONSTRUCTION DETAILS

Power / Sensor Cable	14/7, type SOW: three phase
Motor Cover	Gray Cast Iron - ASTM A48 Class 30
Seal / Bearing Housing	Gray Cast Iron - ASTM A48 Class 30
Casing	Gray Cast Iron - ASTM A48 Class 30
Impeller	Non-Clog 304SS and Vortex Cast Iron
Motor Shaft	AISI 400 Series Stainless Steel
Motor Design	Air filled Class H; XP = Class F
Motor Overload Protection	Three Phase: require ambient compensated Class 10, quick trip overloads in the control panel.
Motor Seal Fail / High Temp. Detection	Seal fail sensor and high temp. in motor chamber. Connect to optional relays in the control panel.
External Hardware	300 Series Stainless steel
Impeller Type	Vortex with pump out vanes on back shroud or non-clog
Oil Capacity - Seal Chamber	20.3 ounces

MATERIALS OF CONSTRUCTION

Item No.	Part Name	Material Standard				
		Mech. Seal	Service	Rotary	Stationary	Elasto-mers
1	Impeller	Cast Iron or Stainless Steel				
2	Motor Cover	Cast Iron				
3	Shaft	400 Series SS				
4	Fasteners	300 Series SS				
5	Ball Bearings	Steel				
6	Cord	SOW, 30 feet				
7	O-Ring	BUNA-N				
8	STD	Mild abrasives	Carbon / Ceramic - Upper Tung. Carb. / Ceramic - Lower		Nitrile or Viton*	300 Series SS

* Depending on size and style.

NOMENCLATURE DESCRIPTION**1st Character - Discharge Size**

2 = 2" discharge

2nd and 3rd Characters - Series/Solids Size

MV = Vortex

MK = Non-clog

4th Character - HP

18 = 1.8 HP

23 = 2.3 HP

30 = 3.0 HP

38 = 3.8 HP

5th Character - Speed/RPM

1 = 60 Hz/3500 RPM

6th Character - Phase/Voltage

2 = three phase, 200 V

3 = three phase, 230 V

4 = three phase, 460 V

5 = three phase, 575 V

7th Character - Impeller DiameterVortexNon-Clog

A = 4.65" A = 4.41"

B = 4.37" B = 4.09"

C = 4.09" C = 3.90"

D = 3.86" D = 3.70"

8th Character - Cord Length

D = 30' (standard)

J = 100' (optional)

9th Character

X = FM Approved Explosion Proof

E = Epoxy Coat

XE = FM Approved Explosion Proof and Epoxy Coat

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to www.xylem.com



Xylem Inc.
2881 East Bayard Street Ext., Suite A
Seneca Falls, NY 13148
Phone: (866) 325-4210
Fax: (888) 322-5877
www.bellgossett.com

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