

# SUBMITTAL DATA SHEET

A.Y. McDonald

## 4" Submersible Motors - Two Wire



A.Y. McDonald offers a full line of four inch asynchronous two-pole submersible motors ranging from 1/2 HP through 10 HP. Cooling and lubrication of the thrust bearing assembly is provided by a mixture of water and Glycol. Our two-wire motors have the capacitor placed in a Noryl cartridge directly connected to the motor. Two-wire motors do not require an external control box.



### 4" Water Well - Two Wire - Single Phase - 60 HZ

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	kw	Service Factor	AMP (in)	Downward Thrust	Cable length (ft.)
3132-008	SM0412 0.5HP115V	1/2	115	0.37	1.6	8.6	500	5 1/2
3132-005	SM0412 0.5HP230V	1/2	230	0.37	1.6	3.9	500	5 1/2
3132-006	SM0412 0.75HP230V	3/4	230	0.55	1.5	6.3	500	5 1/2
3132-007	SM0412 1HP230V	1	230	0.75	1.4	7.7	700	5 1/2
3132-009	SM0412 1.5HP230V	1 1/2	230	1.1	1.3	11.8	700	5 1/2



### SUBMITTAL INFORMATION

- 304 Stainless Steel for all parts that come in contact with water.
- 304 Stainless Steel motor shaft.
- Squirrel-cage rotor mounted on a self-centering thrust bearing.
- Stator housed in an airtight 304L Stainless Steel casing (can-type)
- Temp Rating 95°F.
- Two-Wire - the controls are in the motor
- Three-Wire - requires the control box
- **Do NOT use motors in swimming areas**



**NO-LEAD:** The weighted average of the wetted surface of this no-lead product contacted by consumable water contains less than one quarter of one percent (0.25%) lead.



**A.Y. McDonald Mfg. Co.**  
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**Submitted by:**

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4" A.Y. McDonald

## 4" Submersible Motors - Two Wire



4" Asynchronous two-pole submersible motor, made in AISI 304 stainless steel for parts in contact with water. Cooling and lubrication of the thrust bearing assembly and carbon bushes is provided by a mixture of water and glycol. Squirrel-cage rotor mounted on self-centering thrust bearing. Stator housed in an airtight stainless steel casing (canned-type) with both flanges and shell in AISI 304L stainless steel. Removable cable connector to allow fast and easy maintenance. The capacitor is placed in the Noryl cartridge directly connected to the motor, so the motor doesn't require an external control box. Thermal protection included in the motor from 1/2 HP to 1 HP in the 230V - 60 Hz version.

### Technical Specification

Flange	NEMA 4"	Voltage tolerance	+ 6% / -10%
Insulation class	F	Max starts	20/h
Degree of protection	IP68	Max operating depth	984 ft
Cooling flow	1.0 ft/sec @ 95 °F	Horizontal operation	1/2 HP - 1 1/2 HP

### Components



Canned stator with external shell and flanges made in AISI 304L stainless steel. The stator has 24 slots for better elasticity and regularity of operation. Class F double insulated copper wire. Thermal protection included in the motor from 1/2 HP to 1 HP in the 230V - 60 Hz version.



Kingsbury type thrust bearing unit consisting of tilting pads made of highly-resistant stainless steel and machined using the spherical lapping process.



Shafts with end part made of stainless steel AISI 304 with a special process of surface hardening and polishing of the working area of the bushes. Squirrel-cage rotor made in aluminium.

### Electrical Data 60 Hz Single Phase Motors

P2	V	SF	In	In (SF)	Is/In	Cs/Cn	P1	N	Cos φ	η	C	Ø	LC	
[HP]	[kW]	[V]	[A]	[A]			[W]	[min <sup>-1</sup> ]		%	[uF]	[AWG]	[ft]	
1/2	0.37	115	1.6	8.6	10	4.2	0.65	800	3450	0.88	46	80	3x14	5 1/2
		230	1.6	3.9	5	4.6	0.65	800	3450	0.88	46	20	3x14	5 1/2
3/4	0.55	230	1.5	6.3	6.9	4.3	0.65	1200	3450	0.82	47	25	3x14	5 1/2
1	0.75	230	1.4	7.7	8.8	4.8	0.68	1500	3450	0.84	50	35	3x14	5 1/2
1 1/2	1.1	230	1.3	11.8	12.7	4.7	0.70	2120	3450	0.85	53	40	3x14	5 1/2

- P2:** Rated output
- In:** Rated current (Full-Load AMP)
- Cs/Cn:** Locked rotor Torque/Rated Torque
- Cos φ:** Power factor
- Ø:** Cable section
- V:** Rated voltage
- In (SF):** Service factor current (Max AMP)
- P1:** Power consumption
- η:** Efficiency
- LC:** Cable length
- SF:** Service factor
- Is/In:** Locked rotor current/Rated current
- N:** R.P.M
- C:** Capacitor

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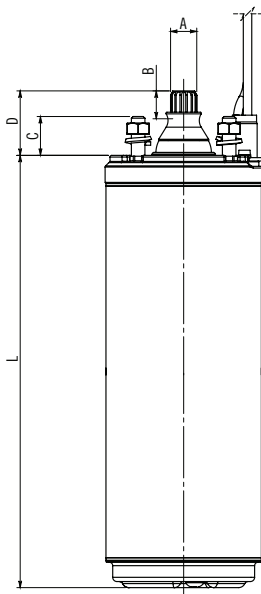
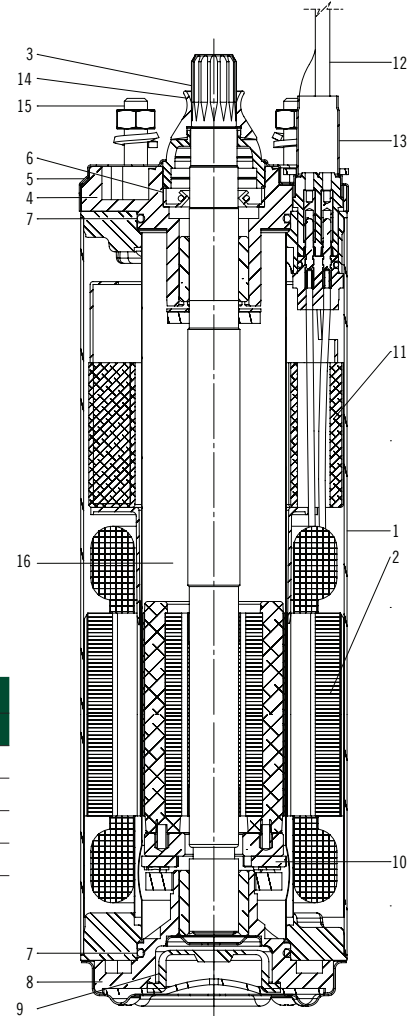
4" A.Y. McDonald

## 4" Submersible Motors - Two Wire



### Materials

COMPONENTS		
1	Int. and external sleeve	AISI 304
2	Stator	AISI 304L
3	Shaft	AISI 304
4	Upper bracket	Cast Iron
5	Bracket cover	AISI 304
6	Lip seal	NBR
7	Gasket	NBR
8	Lower Bracket	Cast Iron
9	Diaphragm	EPDM
10	Thrust Bearing	Stainless Steel - Graphite
11	Capacitor	Internal Capacitor
12	Cable	EPDM
13	Connecting Plug	AISI 316
14	Sand guard (fixed-removable)	NBR
15	Bolts & Screws	AISI 304
16	Cooling Liquid	Glycol + water

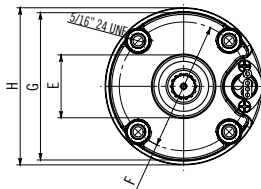


### 60 Hz Dimensions Single Phase Motors

Type			L	Wt.	Axial Thrust
	[HP]	[kW]	[inch]	[lbs]	[lbf]
60 Hz	1/2 / 115V	0.37	13.425	21.4	500
	1/2 / 230V	0.37	13.031	21.0	500
	3/4	0.55	13.819	23.2	500
	1	0.75	16.772	28.9	700
	1 1/2	1.1	18.543	33.3	700

### 60 Hz Dimensions

Pos.	inch	Pos.	inch
A	0.61 <sup>+0.002</sup> <sub>-0.003</sub>	E	1.465 <sup>+0.016</sup> <sub>-0.016</sub>
B	0.591 <sup>+0.02</sup> <sub>-0</sub>	F	3 <sup>+0.004</sup> <sub>-0</sub>
C	0.906 <sup>+0.005</sup> <sub>-0.005</sub>	G	3.437 <sup>+0</sup> <sub>-0.004</sub>
D	1 1/2 <sup>+0.02</sup> <sub>-0.02</sub>	H	3.662 <sup>+0.004</sup> <sub>-0.004</sub>



- CSA Certified



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