

## MDEQ List of Approved Meters for Irrigation, Fish Culture, and Wildlife Management Wells

### BADGER METER, INC.

Model Number	Type and Size	MDEQ Requirements
160	Turbine 1½”	
200	Turbine 2”	
450	Turbine 3”	
1000	Turbine 4”	
2000	Turbine 6”	
3500	Turbine 8”	
5500	Turbine 10”	
6200	Turbine 12”	
6600	Turbine 16”	
10000	Turbine 20”	
Recordall 170	Positive Displacement 2”	With wire seal per drawing S-907
SDI-1D1-BN1-0200	Insert Style Impeller for 2-10”	
SDI-1D2-BN1-0200	Insert Style Impeller for 12-36”	

### ELSTER\AMCO\ABB\KENT WATER METERING SYSTEMS

Model Number	Type and Size	MDEQ Requirements
Watermaster FEV111, FEV121, FEV181, FEV191	Full-Bore Electromagnetic 1½” to 12”	Read only MID switch set to “on”
Watermaster FEF121, FEF181	Full-Bore Electromagnetic 10” to 84”	Read only MID switch set to “on”
T-3000	Turbine 1½” to 8”	
T-4000	Turbine 1½” to 12”	
TS-4000	Turbine 1½” to 12”	
H-3000	Turbine 3”	
HT-4000	Turbine 3”	
C-3000	Compound 2”, 3”, 6”, 8”	
C-4000	Compound 2” to 4”	
C-700	Positive displacement 5/8” to 2”	
M-700	Multijet 5/8” to 2”	
MFE w/MRE4 register	Full Bore Electromagnetic ½” to 24”	Vendor provided cover bolt with hole
MFF w/MFE4 register	Full Bore Electromagnetic 28” to 84”	Vendor provided cover bolt with hole

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Aquamaster Electronic Water Meter	Full Bore Electromagnetic 5/8" to 24"	
evoQ4	Full Bore Electromagnetic 2" to 12"	

### EMERSON\DIETRICH\STANDARD\ROSEMONT

Model Number	Type and Size	MDEQ Requirements
Probar, PBR+25S HAMSO MP4C0 2 A 1 A M T1 QD1	Differential Pressure Insertion tubes, 4" to 42"	Totalizer by M&D Controls, Flowtube with Straightening Vanes
Probar, PNF+10S HVMS0 FAS 2 A 1 A M T1 QD1	Differential Pressure Insertion tubes, ½" to 2"	Totalizer by M&D Controls, Flowtube with Straightening Vanes
ES Pro, PSR+26S MM4C0 2 2 MD4C0 QD1 QD2 QS1 T1	Differential Pressure Insertion tubes, 4 to 42"	Totalizer by M&D Controls, Flowtube with Straightening Vanes
8700 Series w/8712 remote register	Full Bore Electromagnetic .5" to 36"	Equipped with Integral Tamperproof Kit, part# 08721-0547-0001
8700 Series w/8732 C integral register	Full Bore Electromagnetic .5" to 36"	T-1non-volatile config only and equipped with Integral Tamperproof Kit, part# 08721-0547-0001
8700 Series w/8732 E integral transmitter	Full Bore Electromagnetic .5" to 36"	equipped with Integral Tamperproof Kit, part# 08721-0547-0001

### ENDRESS + HAUSER, INC.

Model Number	Type and Size	MDEQ Requirements
Proline Promag 50W	Full Bore Electromagnetic 1" to 78"	
Proline Promag 50P	Full Bore Electromagnetic ½" to 24"	
Proline Promag 50H	Full Bore Electromagnetic 1/12" to 4"	
Promag 10W	Full Bore Electromagnetic 1" to 78"	*Custody mode
Promag 10P	Full Bore Electromagnetic ½" to 24"	*Custody mode
Promag 10H	Full Bore Electromagnetic 1/12" to 4"	*Custody mode
Promag 23W	Full Bore Electromagnetic 1" to 78"	*Custody mode
Promag 23P	Full Bore Electromagnetic ½" to 24"	*Custody mode
Promag 23H	Full Bore Electromagnetic 1/12" to 4"	*Custody mode
Promag 53W	Full Bore Electromagnetic 1" to 78"	*Custody mode
Promag 53P	Full Bore Electromagnetic ½" to 24"	*Custody mode
Promag 53H	Full Bore Electromagnetic 1/12" to 4"	*Custody mode
<b>Custody mode:</b> Internal jumpers placed to prevent totalizer reset. Cross-drilled screws to secure transmitters. Blanking plate inside transmitter cover to prevent access to buttons to reset totalizers.		

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### HERSEY METERS

Model Number	Type and Size	MDEQ Requirements
Horizon	Turbine 1½", 2", 3", 4", 6", 8", 10"	
MVR 30	Vertical turbine ¾" x ½"	
MVR 30A	Vertical turbine ¾"	
MVR 30B	Vertical turbine ¾" x 1"	
MVR 50	Vertical turbine 1"	
MVR 100	Vertical turbine 1½"	
MVR 160	Vertical turbine 2"	
MVR 350	Vertical turbine 3"	
MVR 1300	Vertical turbine 6"	
430IIS	Positive Displacement (5/8")	
442IIS	Positive Displacement (¾")	
452IIS	Positive Displacement (1")	
562IIS	Positive Displacement (1½")	
572IIS	Positive Displacement (2")	

### INVENSYS\FOXBORO

Model Number	Type and Size	MDEQ Requirements
9100A w/integral or remote mount IMT25 transmitter	Full Bore Electromagnetic 1" to 78"	(ECEP 14356 configuration, sealed by FoxBoro rep)
9200A w/integral or remote mount IMT25 transmitter	Full Bore Electromagnetic 1" to 78"	(ECEP 14356 configuration, sealed by FoxBoro rep)
9300A w/integral or remote mount IMT25 transmitter	Full Bore Electromagnetic 1" to 78"	(ECEP 14356 configuration, sealed by FoxBoro rep)

### JM GEYSER

Model Number	Type and Size	MDEQ Requirements
GFMS-302	Saddle 3-12"	
GFMF-351	Flange 3-12"	

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### KROHNE, INC.

Model Number	Type and Size	MDEQ Requirements
IFS 4000 KC (Enviromag) w/IFC 010K signal converter	Full Bore Electromagnetic 1" to 12"	
Enviromag 2000/IFC 100 or IFC 300	Full Bore Electromagnetic 1/10" to 120"	Converter housing with 2 predrilled holes and passcode protected programming

### MASTER METER, INC.

Model Number	Type and Size	MDEQ Requirements
MJ04	MM2, MM2FP	Multi-jet 5/8" x 1/2"
MJ05	MM3	Multi-jet 5/8" x 3/4"
MJ06	MM4	Multi-jet 3/4" to 7 1/2" long
MJ07		Multi-jet 3/4" to 9" long
MJ08		Multi-jet 3/4" x 1"
MJ09	MM5, MM5FP	Multi-jet 1"
MJ10	MM6T	Multi-jet 1 1/2" threaded end
MJ11	MM6F	Multi-jet 1 1/2" flanged end
MJ12	MM7T	Multi-jet 2" threaded end
MJ13	MM7F	Multi-jet 2" flanged end
TM11	1 1/2" MMT	Turbine 1 1/2"
TM13	2" MMT, 2" MMTII	Turbine 2"
TM14	3" MMT	Turbine 3"
TM15	4" MMT	Turbine 4"
TM16	6" MMT	Turbine 6"
TM17	8" MMT	Turbine 8"

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### MCCROMETER

Model Number	Type and Size	MDEQ Requirements
FC100	Electronic Register for listed propeller meters	Must be mounted directly on the meter sensor housing and such mounting must be equipped with cross-drilled screws so that a sealing wire secured with a lead seal bearing either a Great Plains Meters stamp or a McCrometer stamp can be installed. Internal reed switch needed for programming the FC100 must be internally disabled on the FC100 circuit board. Register enclosure must be equipped with cross-drilled screws so that a sealing wire secured with a lead seal bearing either a Great Plains Meters stamp or a McCrometer stamp can be installed. Only McCrometer, Inc., or Great Plains Meters will be allowed to calibrate, repair, or otherwise work on the FC100.
MF100	Propeller 2" to 12"	
MG100	Propeller 3" to 24"	
ML100	Propeller 6" to 12"	
MS100	Propeller 3" to 24"	
MT100	Propeller 3" to 4"	
MO300 *(See GPM approved flowtube section)	Propeller 4" to 16"	
MD300 *(See GPM approved flowtube section)	Propeller 4" to 16"	
MW500	Propeller 2" to 24"	
MZ500	Propeller 2" to 24"	
QW500	Propeller 2" to 24"	
QZ500	Propeller 2" to 24"	
SW500	Propeller 4" to 36"	
SZ500	Propeller 4" to 36"	
MM800	Propeller 3" to 24"	
MW800	Propeller 3" to 24"	
MG900	Propeller 2" to 24"	
MT900	Propeller 2" to 24"	
MW900	Propeller 2" to 24"	
M1400	Propeller 18" to 36"	
V2150	Differential Pressure 4" to 18"	V2-KS-Spec

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V2300	Differential Pressure 4" to 18"	V2-KS-Spec
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**NEPTUNE TECHNOLOGY** \*E-Coder Absolute Encoder Register is an acceptable register for these models.

Model Number	Type and Size	MDEQ Requirements
T-10 *	Positive displacement 5/8" to 2"	
T-10 Double Check *	Positive displacement 5/8"	
HP Turbine *	Turbine 1½" to 20"	Install with optional strainer upstream and with minimum 2 special order SB44 bolts
HP Fire Service Turbine *	Turbine 3" to 10"	Install with optional strainer upstream and with minimum 2 special order SB44 bolts
TRU/FLO Compound	Positive displacement/turbine 2" to 8"	Install with optional strainer upstream and with minimum 2 special order SB44 bolts

### **NETAFIM USA \ ARAD**

Model Number	Type and Size	MDEQ Requirements
WT	Turbine 2" to 12"	
WMR	Turbine 2"	
WST	Turbine 2" to 8"	

### **SEAMETRICS**

Model Number	Type and Size	MDEQ Requirements
AG1000 w/built in register display	Full Bore Electromagnetic 4" to 12"	
AG1100 w/built in register display	Full Bore Electromagnetic 4" to 12"	
AG2000 w/built in register display	Full Bore Electromagnetic 4" to 12"	
AG2100 w/built in register display	Full Bore Electromagnetic 4" to 12"	
WMP104	Full Bore Electromagnetic 1" and 2"	With tamper-evident seal and cross-drilled screws to prevent register from being removed from sensor without evidence. Must have two C lithium batteries.

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### SENNINGER IRRIGATION, INC.

Model Number	Type and Size	MDEQ Requirements
Flo-Wise SC Ag Rotor	Propeller 6" to 12"	

### SENSUS METERING\INVENSYS\PRECISION\ROCKWELL

Model Number	Type and Size	MDEQ Requirements
101	Propeller 3" to 36"	
SRH compound	Compound turbine, piston 2" to 6"	
Series W	Turbo 1½" to 16"	
PMX	Multi-jet 5/8" to 2"	
PMM	Multi-jet 5/8" to 2"	
Magnum II Type-C	Turbine 2" to 12"	
Magnum II Type-S	Turbine 1½" to 8"	
Omni T2	Turbine 1½", 2", 3", 4", 6", 8", 10"	
Omni C2	Turbine 1½", 2", 3", 4", 6", 8", 10"	
Omni F2	Turbine 1½", 2", 3", 4", 6", 8", 10"	
accuMag	Full Bore Electromagnetic 3", 4", 6", 8", 10", 12", 14", 16", 18", 20", 24"	Register capabilities locked and wire seal to prevent register from being opened without evidence.
SR	Displacement 5/8" to 2	Drilled capscrews
SRII	Displacement 5/8" to 1"	Drilled capscrews
SR accuStream (SR-A)	Displacement 5/8" to 1"	Drilled capscrews

### SIEMENS

Model Number	Type and Size	MDEQ Requirements
MAG 3100 w/5000CT transmitter	Full Bore Electromagnetic ½" to 78"	Configured in the custody transfer cold water pattern approval (PTB OIML R49) and wire sealed
MAG 3100 w/6000CT transmitter	Full Bore Electromagnetic ½" to 78"	Configured in the custody transfer cold water pattern approval (PTB OIML R49) and wire sealed
MAG 5100 w/5000CT transmitter	Full Bore Electromagnetic 1" to 48"	Configured in the custody transfer cold water pattern approval (PTB OIML R49) and wire sealed
MAG 5100 w/6000CT transmitter	Full Bore Electromagnetic 1" to 48"	Configured in the custody transfer cold water pattern approval (PTB OIML R49) and wire sealed
MAG 8000	Full Bore Electromagnetic 1" to 24"	

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### SPARLING

Model Number	Type and Size	MDEQ Requirements
FM 102 w/FT190, FT191 or FT193 totalizer	Propeller 4" to 14"	4" pipe size must have bolt in vanes in tube
FM 103 w/FT190, FT191 or FT193 totalizer	Propeller 4" to 14"	4" pipe size must have bolt in vanes in tube
FM 104 w/FT194 totalizer	Propeller 4" to 14"	4" pipe size must have bolt in vanes in tube
FM 182 w/FT190, FT191 or FT193 totalizer	Propeller 16" to 72"	
FM 183 w/FT190, FT191 or FT 193 totalizer	Propeller 16" to 30"	
FM 184 w/FT194 totalizer	Propeller 16" to 72"	
FM 312 w/FT190, FT191 or FT193 totalizer	Propeller 4" to 14"	4" pipe size must have bolt in vanes in tube
FM 314 w/FT194 totalizer	Propeller 4" to 14"	4" pipe size must have bolt in vanes in tube
Tigermag EP FM 626	Full Bore Electromagnetic 0.1" to 4"	EP models must be ordered with custom password
Tigermag EP FM 627	Full Bore Electromagnetic 1" to 4"	EP models must be ordered with custom password
Tigermag EP FM 656	Full Bore Electromagnetic 0.5" to 72"	EP models must be ordered with custom password
Tigermag EP FM 657	Full Bore Electromagnetic 6" to 48"	EP models must be ordered with custom password

### WATER SPECIALITIES, INC.

Model Number	Type and Size	MDEQ Requirements
LP-31 and LP-31-D	Propeller 4" to 20"	Flowtube & straightening vane insert
LP-32 and LP-32-D	Propeller 6" to 20"	Flowtube & straightening vane insert
LP-03	Propeller 4" to 16"	
LP-04 and LP-04-D	Propeller 4" to 16"	
LP-11	Propeller 4" to 12"	
LP-12 and LP-12-D	Propeller 4" to 16"	
ML-03	Propeller 3" to 48"	
ML-04 and ML-04-D	Propeller 3" to 48"	
ML-07	Propeller 3" to 48"	
ML-08 and ML-08-D	Propeller 3" to 48"	
ML-11	Propeller 3" to 48"	
ML-12 and ML-12-D	Propeller 3" to 48"	



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VF-29	Propeller 4" to 20"	
VF-30 and VF-30-D	Propeller 4" to 20"	
UltraMag UM-06	Full Bore Electromagnetic 2" to 48"	
UltraMag UM-08	Full Bore Electromagnetic 2" to 20"	

### YOKOGAWA CORP.

Model Number	Type and Size	MDEQ Requirements
Digital Yewflo(DYxx)	Vortex 0.5" to 12"	With straightening vanes
Admag AE series	Full Bore Electromagnetic 0.1" to 16"	
Admag AM series	Full Bore Electromagnetic 0.1" to 8"	
Admag AXF w/integral or remote AXFA14 or AXF11 converter	Full Bore Electromagnetic 0.1 to 104"	Admag AXF & SE models must be tagged and password protected by vendor
Admag SE w/SE14 converter	Full Bore Electromagnetic 0.5" to 104"	Admag AXF & SE models must be tagged and password protected by vendor