

All Public Work Projects are required to use the Louisiana Uniform Public Work Bid Form

All prices must be held firm unless an escalation provision is requested in this bid. Jefferson Parish will allow one escalation during the term of the contract, which may not exceed the U.S. Bureau of Labor Statistics National Index for all Urban Consumers, unadjusted 12 month figure. The most recently published figure issued at the time an adjustment is requested will be used. A request must be made in writing by the vendor, and the escalation will only be applied to purchases made after the request is made.

Are you requesting an escalation provision?

YES XX NO _____MAXIMUM ESCALATION PERCENTAGE REQUESTED Refer to attached Sprcial Price Provision.INITIAL BID PRICES WILL REMAIN FIRM THROUGH THE DATE OF 9/30/19.

For the purposes of comparison of bids when an escalation provision is requested, Jefferson Parish will apply the maximum escalation percentage quoted by the bidder to the period to which it is applied in the bid. The initial price and the escalation will be used to calculate the total bid price. It will be assumed, for comparison of prices only, that an equal amount of material or labor is purchased each month throughout the entire contract.

DELIVERY: FOB JEFFERSON PARISH

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES

Delivery will typically be within 4-6 weeks after receipt of order.

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable) Not Applicable**THIS SECTION MUST BE COMPLETED BY BIDDER:**FIRM NAME: Mueller Systems, LLCADDRESS: 10210 Statesville Blvd PO Box 128CITY, STATE: Cleveland ZIP: 27013TELEPHONE: (704) 278-2221 FAX: (704) 278-9616EMAIL ADDRESS: marketing@muellersystems.com

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form. Bidder must acknowledge receipt of an addendum on the bid form as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: No addenda posted.

NUMBER: _____

NUMBER: _____

NUMBER: _____

TOTAL PRICE OF ALL BID ITEMS: \$ 306,500.00

AUTHORIZED

SIGNATURE: K. Anita Short

Printed Name

TITLE: Proposal Manager

SIGNING INDICATES YOU HAVE READ AND COMPLY WITH THE INSTRUCTIONS AND CONDITIONS.

NOTE: All bids should be returned with the BID NUMBER and BID OPENING DATE indicated on the outside of the envelope submitted to the Purchasing Department.

INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00123429

SEALED BID

ITEM NUMBER	QUANTITY	U/M	DESCRIPTION OF ARTICLES	UNIT PRICE QUOTED	TOTALS
1	3,000.00	EA	TWO YEAR CONTRACT FOR THE SUPPLY OF RESIDENTIAL WATER METERS AND ASSEMBLIES FOR THE JEFFERSON PARISH DEPARTMENT OF ENGINEERING.	\$ 79.00	\$237,000.00
	Hersey 420	Bronze	0010 - 5/8 INCH X 3/4 INCH POSITIVE DISPLACEMENT WATER METER RATED AT 25 GPM		
2	500.00	EA	TYPICAL OPERATING RANGE - GROUP 1 (.5 to 20 GPM)	\$ 139.00	\$ 69,500.00
	Hersey 452		0020 - 1 INCH POSITIVE DISPLACEMENT WATER METER RATED AT 70 GPM TYPICAL		
3	100.00	EA	OPERATING RANGE - GROUP 1 (2 to 50 GPM)	No Bid	
			0030 2 INCH TURBINE WATER METER RATED AT 310 GPM TYPICAL		
4	1.00	EA	0040 12 INCH TURBINE WATER METER RATED AT 8800 GPM	No Bid	

Non-Public Works Bid

AFFIDAVIT

STATE OF North Carolina

PARISH/COUNTY OF Rowan

BEFORE ME, the undersigned authority, personally came and appeared: K. Anita Short
_____, (Affiant) who after being by me duly sworn, deposed and said that
he/she is the fully authorized Proposal Manager of Mueller Systems, LLC (Entity),
the party who submitted a bid in response to Bid Number 50-00123429 to the Parish of
Jefferson.

Affiant further said:

Campaign Contribution Disclosures

(Choose A or B, if option A is indicated please include the required attachment):

Choice A _____ Attached hereto is a list of all campaign contributions, including the date and amount of each contribution, made to current or former elected officials of the Parish of Jefferson by Entity, Affiant, and/or officers, directors and owners, including employees, owning 25% or more of the Entity during the two-year period immediately preceding the date of this affidavit or the current term of the elected official, whichever is greater. Further, Entity, Affiant, and/or Entity Owners have not made any contributions to or in support of current or former members of the Jefferson Parish Council or the Jefferson Parish President through or in the name of another person or legal entity, either directly or indirectly.

Choice B XX there are **NO** campaign contributions made which would require disclosure under Choice A of this section.

Debt Disclosures

(Choose A or B, if option A is indicated please include the required attachment):

Choice A _____ Attached hereto is a list of all debts owed by the affiant to any elected or appointed official of the Parish of Jefferson, and any and all debts owed by any elected or appointed official of the Parish to the Affiant.

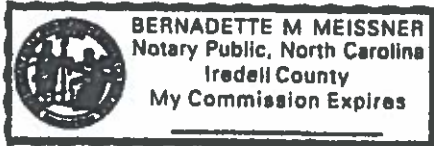
Choice B xx There are NO debts which would require disclosure under Choice A of this section.

Affiant further said:

That Affiant has employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the Affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for Affiant; and

[The remainder of this page is intentionally left blank.]

That no part of the contract price received by Affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the Affiant whose services in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for Affiant.



K. Anita Short
Signature of Affiant

K. Anita Short
Printed Name of Affiant

SWORN AND SUBSCRIBED TO BEFORE ME

ON THE 9th DAY OF July, 2018.

Bernadette M. Meissner
Notary Public

Bernadette M. Meissner
Printed Name of Notary

201618906233
Notary/Bar Roll Number

My commission expires July 6, 2021.



10210 Statesville Blvd.
P. O. Box 128
Cleveland, NC 27013
Office: 704.278.2221
Fax: 704.278.9616

July 9, 2018

Jefferson Parish Purchasing Department
General Government Building, Suite 4400
200 Derbigny Street
Gretna, LA 70053

RE: Bid No. 50-00123429 Two Year Contract for the Supply of Residential Water Meters and Assemblies for the Jefferson Parish Department of Engineering
Due: July 10 2:00 PM

Exceptions to Jefferson Parish Bid Specifications

Special Price Provision: At the conclusion of the first contract year and prior to the commencement of the second contract year, or any subsequent contract extension period, Mueller Systems may request unit price increases. The revised selling price will be adjusted for the subsequent period based on the twelve month net change to the United States Bureau of Labor Statistics PPI Series ID: PCU334514334514 for Totalizing Fluid Meters and Counting Devices.

Warranty Terms and Conditions: Mueller Systems' standard warranty terms and conditions apply. Refer to the enclosed document for details. With regard to any conflicting terms and conditions, Mueller Systems' standard terms and conditions shall govern. Mueller Systems' standard return policy applies. Only authorized returns are accepted. Repair or replacement of authorized returns is at the discretion of Mueller Systems. Any replacement or repair receives the remaining term of the warranty period of the original product.

Positive Displacement Meters: Mueller Systems' positive displacement meters include thrust rollers composed of an engineered polymer. The 5/8" Model 420 Bronze runs at a typical operating range of .5 to 20 GPM, for a flow rating of 20 GPM. The 1" Model 452 runs at a typical operating range 2 to 50 GPM, for a flow rating of 50 GPM.

Encoder Register: The 8 digit absolute encoder register offered by Mueller Systems (Model ME-8) utilizes Light Emitting Diodes for the encoding of each wheel position.

Delivery: Mueller Systems will typically delivery products within 4-6 weeks after receipt of order.

A handwritten signature in blue ink, appearing to read "K. Anita Short", written over a horizontal line.

K. Anita Short
Proposal Manager

**CERTIFICATE OF LIABILITY INSURANCE**

DATE (MM/DD/YYYY)

9/29/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Commercial Lines - (404) 923-3700 Wells Fargo Insurance Services USA, Inc. 3475 Piedmont Road NE, Suite 800 Atlanta, GA 30305-2886	CONTACT NAME: Kristin Dempsey PHONE (A/C, No, Ext): 404-923-3526 FAX (A/C, No): 877-362-9069 E-MAIL ADDRESS: kristin.dempsey@wellsfargo.com																					
INSURED Mueller Water Products, Inc.; Mueller Group, LLC & Mueller Systems, LLC 1200 Abernathy Road, NE Suite 1200 Atlanta, GA 30328	<table border="1"><thead><tr><th colspan="2">INSURER(S) AFFORDING COVERAGE</th><th>NAIC #</th></tr></thead><tbody><tr><td>INSURER A:</td><td>ACE American Insurance Company</td><td>22667</td></tr><tr><td>INSURER B:</td><td>National Union Fire Ins. Co. of Pittsburgh, PA</td><td>19445</td></tr><tr><td>INSURER C:</td><td>Indian Harbor Insurance Company</td><td>36940</td></tr><tr><td>INSURER D:</td><td></td><td></td></tr><tr><td>INSURER E:</td><td></td><td></td></tr><tr><td>INSURER F:</td><td></td><td></td></tr></tbody></table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A:	ACE American Insurance Company	22667	INSURER B:	National Union Fire Ins. Co. of Pittsburgh, PA	19445	INSURER C:	Indian Harbor Insurance Company	36940	INSURER D:			INSURER E:			INSURER F:		
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INSURER F:																						

COVERAGES**CERTIFICATE NUMBER:** 12307926**REVISION NUMBER:** See below

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		XSLG27871033 SIR applies per policy terms & conditions	10/01/2017	10/01/2018	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 0 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 10,000,000 PRODUCTS - COMP/OP AGG \$ 5,000,000 SIR/Deductible \$ 500,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		ISAH09063201	10/01/2017	10/01/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$		28189312	10/01/2017	10/01/2018	EACH OCCURRENCE \$ 25,000,000 AGGREGATE \$ 25,000,000 \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input checked="" type="checkbox"/> N/A	WLRC64417575 (All states)	10/01/2017	10/01/2018	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
C	E&O PL-Primary		MTP004231004	10/01/2017	10/01/2018	Limit: \$10,000,000 Deductible: \$100,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Proof of Insurance

CERTIFICATE HOLDER

For Information Only
Mueller Group, LLC
Mueller Systems, LLC
1200 Abernathy Road NE, Suite 1200
Atlanta, GA 30328

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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ACORD 25 (2016/03)

420 Series Bronze

420 Bronze PD Meter

Sizes 5/8" x 1/2" and 5/8" x 3/4"

Mueller SYSTEMS

Features

APPLICATIONS: The Hersey® 420 bronze is a nutating disc style, positive displacement meter designed for residential and small commercial applications where water volumes are low and low flow sensitivity is important.

CONFORMANCE TO STANDARDS: All Hersey 420 bronze meters meet or exceed the latest revision of the AWWA C-700 Standard for positive displacement meters. Every 420 bronze no lead meter is compliant with the latest initiatives of NSF, ANSI and EPA standards.

CONSTRUCTION: Hersey 420 water meters consist of three basic parts: maincase; measuring chamber; and permanently sealed register. The maincase is made of bronze for long life. Direction of flow arrows and model are cast into each maincase for ease of identification. The bottom cover is epoxy-coated cast iron with a molded plastic liner separating it from the waterway. Optional bronze and plastic bottom covers are available. The measuring chambers are designed for reduced wear during operation. The measuring chamber, integral strainer, nutating disc and thrust roller are thermoplastic, which is dimensionally stable and will not corrode. The register housing and lid are available in your choice of plastic or bronze for standard visual read registers. The meter is designed so that the register can be replaced easily without removing the meter from the service line.

REGISTER: The permanently sealed visual read register has a unique triple "L" seal and heat treated, glass lens to eliminate dirt, moisture infiltration and fogging. An integral tamper-proof locking feature is provided to resist tampering with the register. The totalizing register has a straight-reading odometer type display, a 360° test circle with center sweep hand and a low flow (leak) detector. Standard gearing is used, making registers interchangeable by size. The 420 bronze meter is available with all AMR and AMI options for increased reading efficiency.

OPERATION: Water flows through the meter's strainer where debris is screened out. The incoming water fills a known volume of the measuring chamber on one or the other side of a movable disc that separates the chamber into two sections. As water enters, it moves the disc (nutates), forcing a known volume of water out of the meter from the opposite side of the disc. The process repeats as the sections refill and empty in turn. The nutating action of the disc is coupled magnetically to the register to indicate the volume of water that passes through the meter.

MAINTENANCE: The Hersey 420 positive displacement meter is designed and manufactured to provide long service life with virtually no maintenance required. Repair components available include complete chamber assemblies and bottom plate gaskets. All components can be accessed without removing the meter body from the service line for simplified maintenance.

CONNECTIONS: Supplied with external straight pipe threads (NPSM) per ANSI B1.20.1



5/8" x 3/4" 420 Bronze PD Meter

420 Bronze

Materials and Specifications

MODEL	420 Bronze Meter
SIZES	5/8" X 1/2", 5/8" X 3/4"
STANDARDS	AWWA C-700, Most current NSF-61, ANSI, & EPA Initiatives
SERVICE	Measurement of flow in forward direction only
INSTALLATION	Horizontal or Vertical
OPERATING FLOW RANGE	See Charts on the following pages
ACCURACY	See Charts on the following pages
MAXIMUM WORKING PRESSURE	150 PSI
TEMPERATURE RANGE	33° F to 100° F water temperature
MEASURING ELEMENT	Nutating Disc PD Chamber
REGISTER TYPE	Straight reading, permanently sealed, magnetic drive with low flow indicator and remote reading capability
METER CONNECTIONS	External straight pipe threads (NPSM)
MATERIALS	Meter case – Bronze Bolts – Stainless Steel Measuring Element Chamber and Disc – Thermoplastic Disc Pin – SST Strainer – Thermoplastic
OPTIONS	AMR/AMI Reading Systems

Meter Registration

Meter Size	Initial Dial*	Capacity	Initial Dial*	Capacity
5/8"	10 Gallons	10 Million	1 Cubic Ft.	1 Million

*Registration equal to one full revolution of the sweep hand.

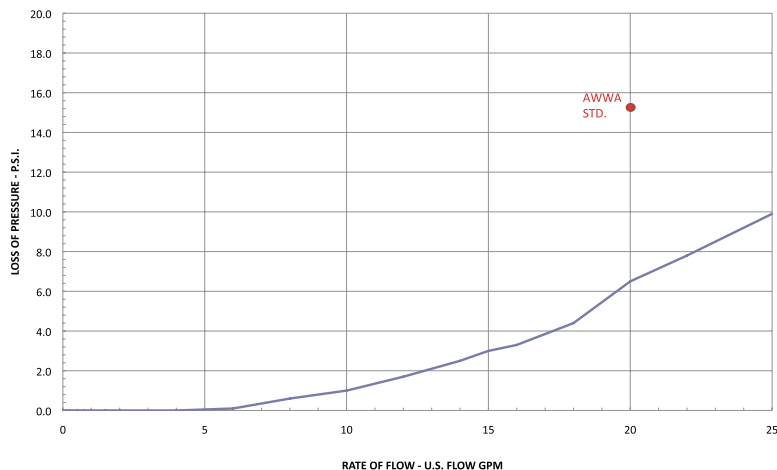
Flow Characteristics

Meter Size	Typical Low Flow (95% Minimum)	Typical Operating Range (100% \pm 1.5%)	Maximum Continuous Operation
5/8"	1/8 GPM	1/2 to 20 GPM	15 GPM

Performance

Head loss

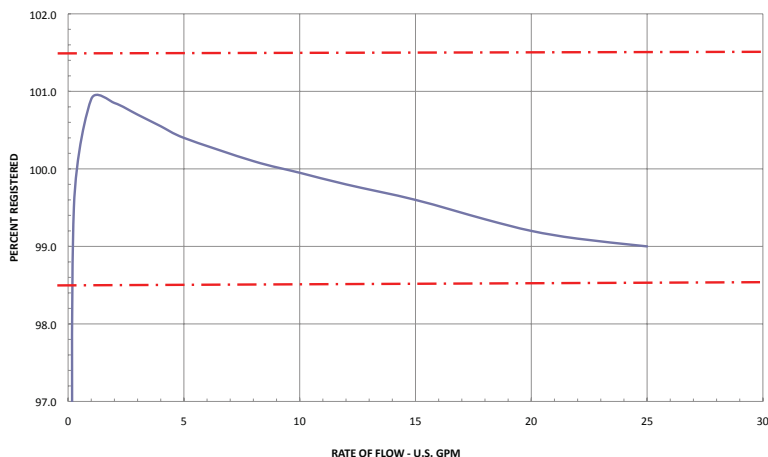
Head Loss on 5/8" 420 Bronze



NOTE: Performance curves are typical only and NOT a guarantee of performance.

Accuracy

Accuracy on 5/8" 420 Bronze



NOTE: Performance curves are typical only and NOT a guarantee of performance.

420 Series Bronze

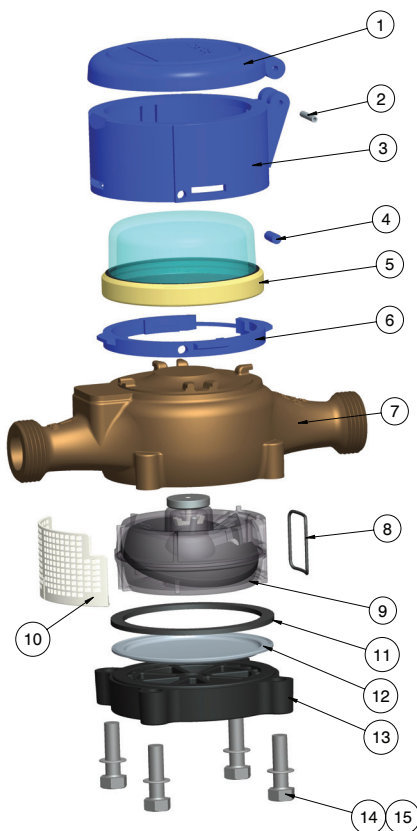
420 Bronze PD Meter

Sizes 5/8" x 1/2" and 5/8" x 3/4"

Mueller SYSTEMS

420 Bronze

MODEL 420 BRONZE METER ASSEMBLY COMPONENTS			
ITEM	PART #	DESCRIPTION	QTY
1	C5768	PLASTIC REGISTER COVER	1
	C5774	BRONZE REGISTER COVER	
2	C5769	PLASTIC REGISTER HOUSING BASE	1
	C5772	BRONZE REGISTER HOUSING BASE	
3	AS41122	PLASTIC LID SPIROL PIN	1
	AS41123	BRONZE LID SPIROL PIN	
4	AS12658	BLUE COLOR REGISTER LOCKING PIN	1
	AS126581	BRONZE COLOR REGISTER LOCKING PIN	
5	D36981	MODEL 420 VISUAL REGISTER SG	1
	D36982	MODEL 420 VISUAL REGISTER CF	
	D36983	MODEL 420 VISUAL REGISTER CM	
	D36991XX	MODEL 420 TRANSLATOR REGISTER SG	
	D36992XX	MODEL 420 TRANSLATOR REGISTER CF	
	D36993XX	MODEL 420 TRANSLATOR REGISTER CM	
6	C5770	REGISTER HOUSING INSERT	1
7	D3680SI	5/8" X 3/4" MODEL 420 MAIN CASE	1
	D3681-1SI	5/8" X 1/2" MODEL 420 MAIN CASE	
8	A13120	MODEL 420 CHAMBER O-RING	1
9	D3635PO	MODEL 420 CHAMBER ASSEMBLY	1
10	C6681	MODEL 420 BRONZE STRAINER RETAINER	1
11	B8664	MODEL 420 BRONZE GASKET	1
12	B8665	MODEL 420 LINER (IRON/BRZ ONLY)	1
13	B8663	MODEL 420 IRON BOTTOM PLATE	1
	B8662	MODEL 420 BRONZE BOTTOM PLATE	
	C6682	MODEL 420 PLASTIC BOTTOM PLATE	
14	90026	5/16-18 X 7/8" HEX BOLT SS (IRON/BRZ BTM)	4
	90010	5/16-18 X 1-1/8" HEX BOLT SS (PLASTIC BTM)	
15	90018	5/16 FLAT WASHER SS (PLASTIC BTM)	4

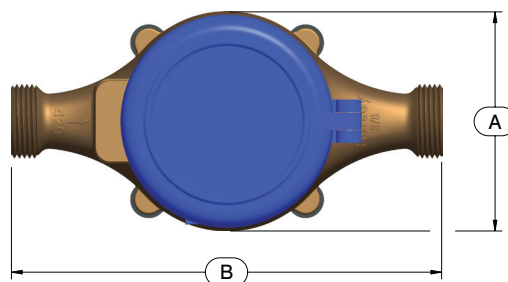


Dimensions, Weights and Parts

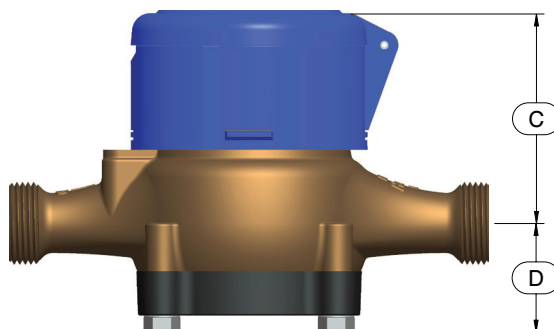
Meter Size	5/8"	
Model	420 Bronze Standard Register	420 Bronze Translator Register
Dimension		
A	3.8125"	3.8125"
B	7.5"	7.5"
C	3.3125	4.25
D	1.375"	1.375"
Weight	3.7	3.7

Weights are in pounds and are approximate.
Inlet and outlet 1/2" or 3/4"

420 Bronze Meter



420 Bronze Meter



452 Series

Mueller SYSTEMS

Magnetic Drive Positive Displacement Disc Meters Size 1"

Features

APPLICATIONS: Measurement of cold water for residential and small commercial applications where water volumes are low, and low flow sensitivity is important.

CONFORMANCE TO STANDARDS: Hersey Series 400 Water Meters comply with latest version of ANSI/AWWA Standard C700, NSF-61 372 and the Safe Water Drinking Act. Each meter is tested to ensure compliance.

CONSTRUCTION: Hersey 400 Water Meters consist of three basic parts: maincase; measuring chamber; and permanently sealed register. The maincase is made of bronze for long life. Direction of flow arrows and model are cast into each maincase. The bottom cover is epoxy-coated cast iron with a molded plastic liner separating it from the waterway. Optional plastic and bronze bottom covers are available. The measuring chambers are large for reduced wear during operation. The measuring chamber, integral strainer, nutating disc and thrust roller are thermoplastic, which is dimensionally stable and will not corrode. The thrust roller moves smoothly along a stainless steel wear plate to reduce friction and maintain accuracy. The register box and lid are available in plastic or bronze. The meter is designed so that the register can be replaced without removing the meter from the line.

REGISTER: The permanently sealed register has a unique seal and heat-treated glass to eliminate dirt, moisture infiltration and lens fogging. An integral tamper-proof locking feature is provided to resist tampering with the register. The totalizing register has a straight-reading odometer type display, a 360° test circle with center sweep hand and a low flow (leak) detector. Standard gearing is used, making registers interchangeable by size. All Hersey meter Models have electronic meter reading systems available for increased reading efficiency (see Meter Reading Systems.)

OPERATION: Water flows through the meter's strainer where debris is screened out. The incoming water fills a known volume of the measuring chamber on one or the other side of a movable disc that separates the chamber into two sections. As water enters, it moves the disc (nutates), forcing a known volume of water out of the meter from the opposite side of the disc. The process repeats as the sections refill and empty in turn. The nutating action of the disc is coupled magnetically to the register to indicate the volume of water that passes through the meter. The large capacity measuring chamber requires fewer nutations of the disc for each gallon measured, which helps to limit wear, extend the life of the meter, and reduce pressure loss.

MAINTENANCE: The Hersey Series 400 Water Meters are designed and manufactured to provide long service life with virtually no maintenance required.

CONNECTIONS: Supplied with external straight pipe threads (NPSM) per ANSI B1.20.1.



452 with Translator Register and Hot Rod

Materials and Specifications

MODEL NUMBER	452
SIZES	1"x1"
STANDARDS	Manufactured and tested to meet or exceed all applicable parts of ANSI/AWWA C700 Standard NSF-61 372 and the Safe Water Drinking Act
SERVICE	cold water measurement with flow in only one direction
OPERATING FLOW RANGE	See Chart on the following page
ACCURACY	See Chart on the following page
PRESSURE LOSS	See Chart on the following page
MAXIMUM WORKING PRESSURE	150 PSI
TEMPERATURE RANGE	33F to 100F Water Temperature
MEASURING ELEMENT	Nutating Disc
DISC NUTATIONS (per Gallon)	452: 11.7
REGISTER TYPE	Straight reading, permanently sealed, magnetic drive with low flow indicator. Remote reading units optional.
METER CONNECTIONS	1" external (NPSM) straight pipe threads per ANSI B1.20.1
MATERIALS	Meter case – No Lead Bronze; Bottom cover – cast iron ASTM A126 CL. B; Chamber top/bottom – thermoplastic; Nutating disc – thermoplastic; Disc pin – stainless steel; Thrust roller – thermoplastic; Wear plate – stainless steel; Coupling – Ceramic magnet; Strainer – thermoplastic; Coupling shaft – stainless steel ANSI B18; Top cover bolts – stainless steel ANSI B18; Bottom cover bolts – stainless steel ANSI B18; Register box and lid – thermoplastic.
OPTIONS	Bottom cover – bronze UNSC84400 or thermoplastic; Register box and lid – bronze UNSC85700; AMR/AMI Reading Systems

Meter Registration

Meter Size	Initial Dial*	Capacity	Initial Dial*	Capacity
1"	10 Gallons	10 Million	1 Cubic Feet	1 Million

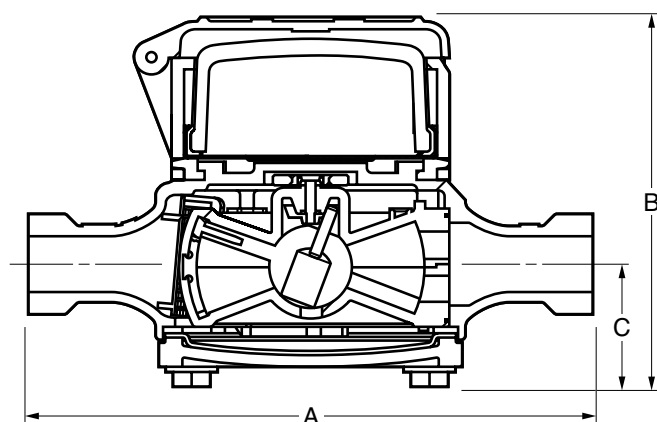
*Registration equal to one full revolution of the sweep hand.

Flow Characteristics

Meter Size	Typical Low Flow (95% Minimum)	Typical Operating Range (100% \pm 1.5%)	Maximum Continuous Operation
1"	3/4 GPM	2 to 50 GPM	35 GPM

NOTE: Performance curves are typical only and NOT a guarantee of performance.

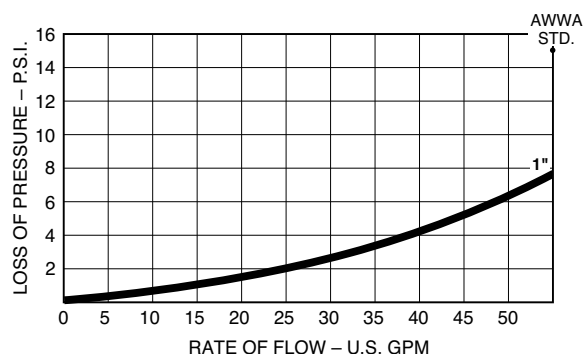
Dimensions and Weights



Meter Size	1"
	Ends External (NPSM) straight pipe threads
Model	452
Dimensions	
A	10-3/4"
B Visual Reg	6-5/8"
B Translator Reg	5.5
C	2-1/8"
Width	7.22"
inlet & outlet	1"
Net weight	11

Performance

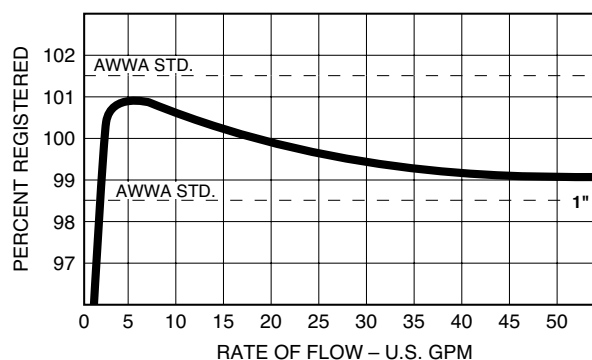
HEAD LOSS – 1" (Figure 1)



NOTE: Performance curves are typical only and NOT a guarantee of performance.

Performance

ACCURACY – 1" (Figure 2)



452 Series

Mueller SYSTEMS

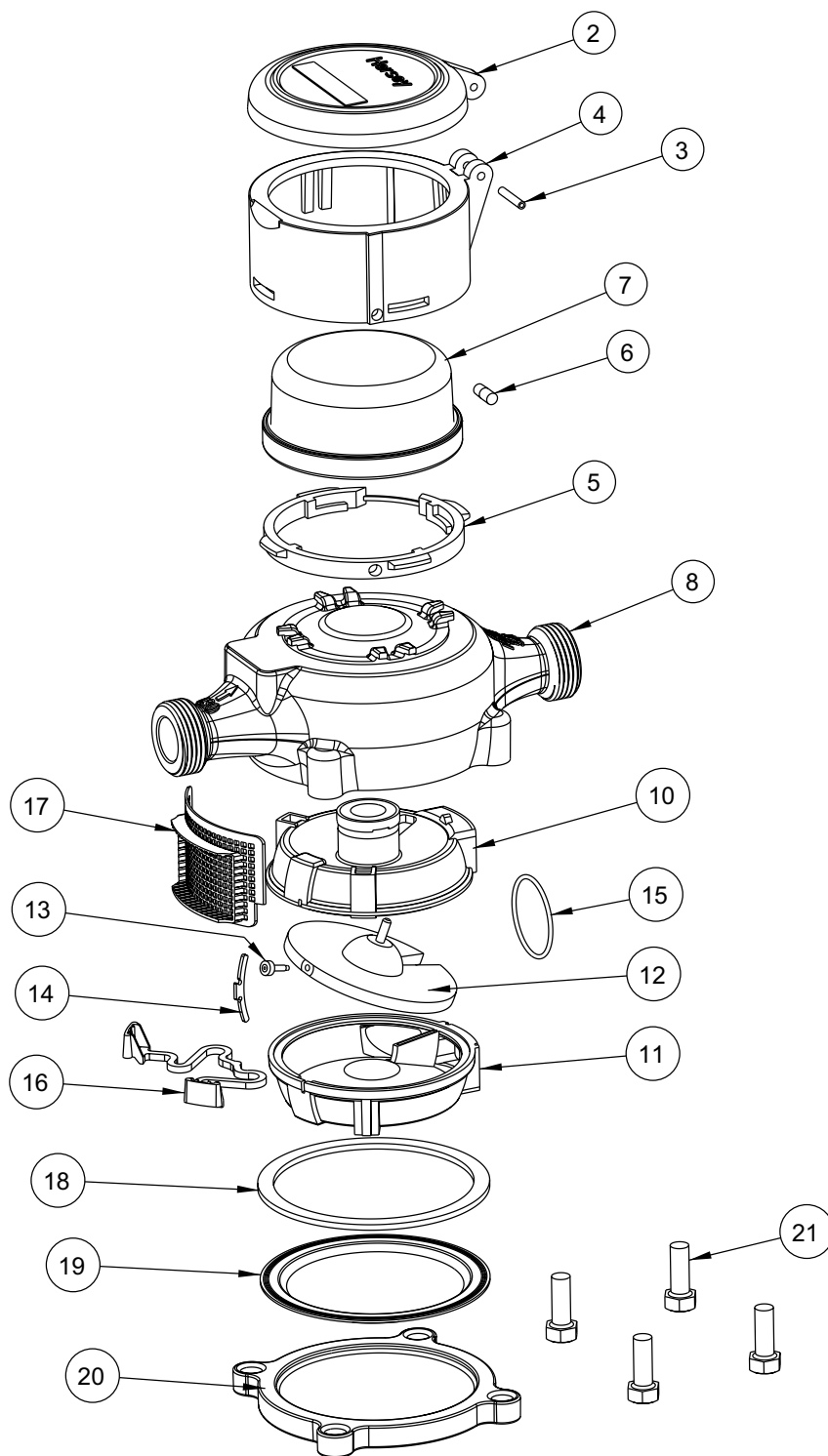
Magnetic Drive Positive Displacement Disc Meters Size 1" Parts

452 Series

Ref No.	Description	Material	1" Model 452
1	Complete Register Housing Assembly Includes the following:	Plastic	B7856
		Bronze	B7857
2	Register Cover	Plastic	C5768
3	Spirol Pin	Plastic	AS41122
		Bronze	AS41123
4	Register Housing Base	-	C5769
5	Register Housing Insert	-	C5770
6	Register Locking Pin	Blue Color Plastic	A12658
	Register Locking Pin	Brass Color Plastic	A126581
7	Visual Register USG	Glass/Brass	D32565
	Visual Register CF	Glass/Brass	D32566
	Translator Register USG*	Plastic/Brass	D35031xxx
	Translator Register CF*	Plastic/Brass	D35032xxx
	Specify Electronic Reading Valve 4, 5, or 6 Wheel		
8	5/8" x 1/2 Main Case 2006 and after	Bronze	-
	5/8" x 1/2 Main Case 2006 and after	No Lead Bronze	-
	5/8" x 3/4" Main Case 2006 and after	Bronze	-
	5/8" x 3/4" Main Case 2006 and after	No Lead Bronze	-
	3/4" Regular Main Case 2006 and after	Bronze	-
	3/4" Regular Main Case 2006 and after	No Lead Bronze	-
	3/4" Short Main Case 2006 and after	Bronze	-
	3/4" Short Main Case 2006 and after	No Lead Bronze	-
	1" Main Case 2006 and after	Bronze	-
	1" Main Case 2006 and after	No Lead Bronze	D3589SI
9	Complete Chamer Assembly Includes following parts 10-16	Plastic	C5692P0
10	Top Chamber Assembly	Plastic**	-
11	Bottom Chamber Assembly	Plastic**	-
12	Disc Assembly	Plastic/SST**	-
13	Thrust Roller	Plastic	-
		SST	A12662
14	Wear Plate	SST	B7666
15	Outlet Seal	Rubber	A130203
16	Chamber Retainer	Plastic	C5466
17	Strainer	Plastic	51026P045
18	Gasket	Rubber	C5489
19		Plastic	C5506
20	Bottom Cover 2006 and after	Cast Iron	B8623
	Bottom Cover 2006 and after	Bronze	B8624
	Bottom Cover 2006 and after	Plastic	-
21	Case Bolt 2006 and after	SST	90010 (6)
22	Washer – Plastic Bottom Only	SST	-

*Call Mueller Systems Customer Service for appropriate Translator Register and AMR Device part number.

**Available only as part of item 9 – Complete Chamber Assembly. Note: If more than one part is required per assembly, quantity is noted after part number (in parenthesis). The different top and bottom case requirements for the various flange configurations. Bolt quantities and sizes vary.



452 Series

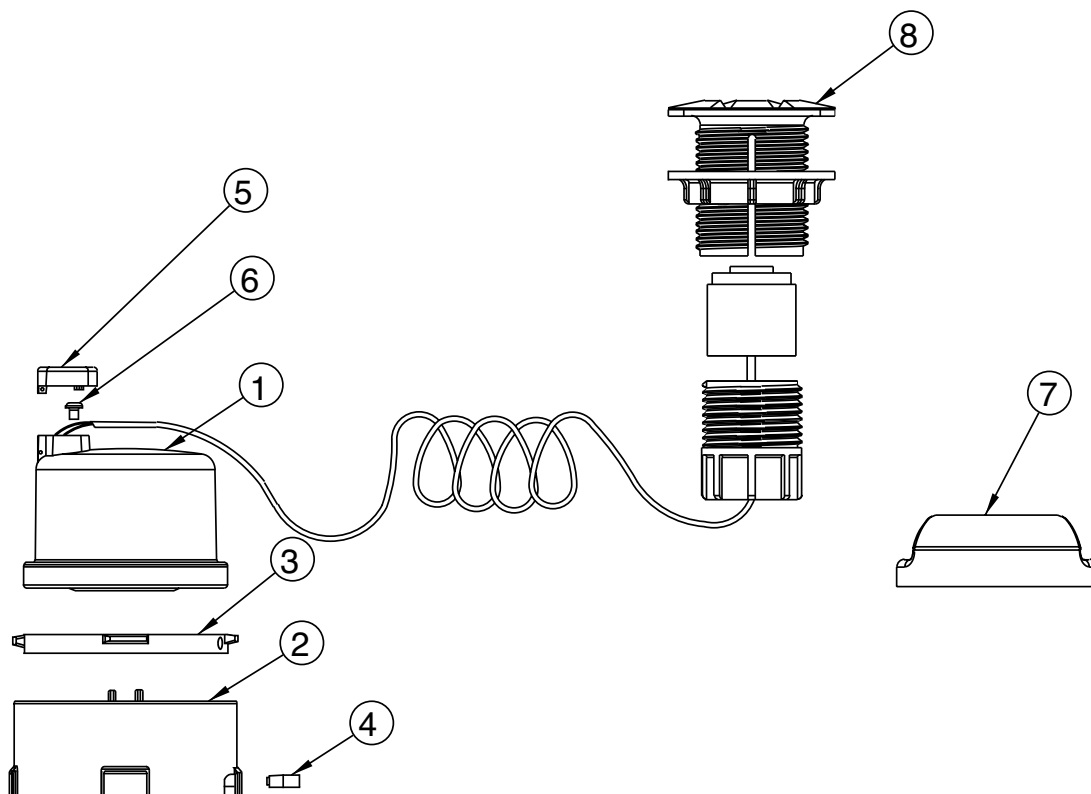
Mueller SYSTEMS

Magnetic Drive Positive Displacement Disc Meters Size 1" – Manufactured prior to 2006

Ref No.	Description	Material	1" Model 452
1	Complete Register Housing Assembly Includes the following:	Plastic	B7856
		Bronze	B7857
2	Register Cover	Plastic	C5768
3	Spirol Pin	Plastic	AS41122
	Spirol Pin	Bronze	AS41123
4	Register Housing Base	-	C5769
5	Register Housing Insert	-	C5770
6	Register Locking Pin	Blue Color Plastic	A12658
	Register Locking Pin	Brass Color Plastic	A126581
7	Visual Register USG	Glass/Brass	D32565
	Visual Register CF	Glass/Brass	D32566
	Translator Register USG*	Plastic/Brass	D35031xxx
	Translator Register CF*	Plastic/Brass	D35032xxx
	Specify Electronic Reading Valve 4, 5, or 6 Wheel		
8	5/8" x 1/2" Main Case prior to 2006	Bronze	-
	5/8" x 3/4" Main Case prior to 2006	Bronze	-
	3/4" Regular Main Case prior to 2006	Bronze	-
	3/4" Short Main Case prior to 2006	Bronze	-
	1" Main Case prior to 2006	Bronze	-
9	Complete Chamber Assembly Includes following parts 10-16	Plastic	C5692P0
10	Top Chamber Assembly	Plastic**	-
11	Bottom Chamber Assembly	Plastic**	-
12	Disc Assembly	Plastic/SST**	-
13	Thrust Roller	Plastic	-
		SST	A12662
14	Wear Plate	SST	B7666
15	Outlet Seal	Rubber	A130203
16	Chamber Retainer	Plastic	C5466
17	Strainer	Plastic	51026P045
18	Gasket	Rubber	C5489
19	Liner	Plastic	C5506
20	Bottom Cover prior to 2006	Cast Iron	D3211
	Bottom Cover prior to 2006	Bronze	C5512
	Bottom Cover prior to 2006	Plastic	-
21	Case Bolt prior to 2006		90065 (6)
22	Washer – Plastic Bottom Only	SST	-

*Call Mueller Systems Customer Service for appropriate Translator Register and AMR Device part number.

**Available only as part of item 9 – Complete Chamber Assembly. Note: If more than one part is required per assembly, quantity is noted after part number (in parenthesis). The different top and bottom case requirements for the various flange configurations. Bolt quantities and sizes vary.



Ref	Description	1" Model 452
1	Translator Register* Gallons Cubic Feet Specify Electronic Reading Value 4, 5, or 6 Wheel	D35031xxx D35032xxx
2	Register Housing Base (Plastic)	C5769
3	Register Housing Insert (Plastic)	C5770
4	Register Locking Pin (Blue Color Plastic)	A12658
5	Lens Terminal Cover	B8447
6	Terminal Lug Screw	98197 (3)
7	Wall Pad	T1234
8	Pit Pad with 3' of wire	T1235
9	1,000' Spool of Wire (not shown)	A13015
10	Register Housing Lid (not shown)	B8638

*Call Mueller Systems Customer Service for appropriate Translator Register and AMR Device part number.

**Begins with 2004 meters, for earlier retrofits call Mueller Systems Customer Service.

MUELLER ENCODER EIGHT (ME-8)

Mueller SYSTEMS

Features

APPLICATIONS: The Mueller Encoder Eight register (ME-8) is available for use on current Mueller Systems positive displacement meters in 5/8" through 2" sizes. The Mueller Encoder Eight register provides granular data for use in the latest AMR and AMI applications while the eight wheel visual display provides visual verification that aids in the detection of leaks and backflow.

The Mueller Encoder Eight register provides eight digits of visual resolution and up to 8 digits of electronic resolution for outstanding granularity when used in conjunction with current Mueller Systems AMR and AMI systems. Granularity of data permits customers to capture maximum revenue and be proactive in leak detection and resource conservation. Mechanical meter technology and electromechanical register design provide a proven and time tested solution for water utility needs.

The display provides 5/16" high, color contrasted odometer wheels for easy visual verification of radio frequency transmissions or field testing. The unique, never duplicated ten digit serial number on the Mueller Encoder Eight register housing identifies it as the basis for all systems communication. The register face plate and housing provide visual information specific to the registration units, model, size, date of manufacture, and billing units, to provide verifiable and retrievable data in the event it is required.

CONFORMANCE TO STANDARDS: Mueller Encoder Eight register complies with AWWA requirements for odometer wheel height as well as the American Standard Code for Information Interchange or ASCII.

CONSTRUCTION: Mueller Systems utilizes a UV stable, molded enclosure and lid made of thermoplastic to permanently house the ME-8 register components. The heat treated, tempered glass lens resists years of punishment. A variety of wired AMR/AMI options as well as touch pads are available.

The Mueller Encoder Eight register is compatible with all bayonet style locking mechanisms offered on Mueller Systems positive displacement meters. The register is tamper protected by the unique Mueller Systems locking pin. The register can be replaced without removing the meter from the service line when required due to vandalism or damage.

OPERATION: The Mueller Encoder Eight register detects the rotation of the drive magnet incorporated into the meter measuring element of the positive displacement meter. Light tubes inside the register capture the true position of all eight odometer wheels eliminating the possibility of odometer wheel errors.

When interrogated by a Mueller Systems AMR/AMI device, the Mueller Encoder Eight register communicates the unique ten digit serial number and up to an eight digit electronic reading in ASCII format where it can be recorded and maintained within the reporting structure of the AMR/AMI system. In the event that field testing is required, the high resolution test wheel provides excellent test resolution for all 5/8" through 2" positive displacement meters.



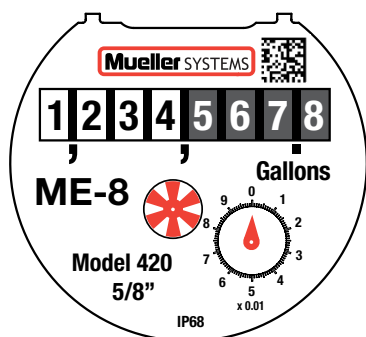
Mueller Encoder Eight (ME-8)

MAINTENANCE: The Mueller Encoder Eight register is designed and manufactured to provide a 20 year service life with virtually no maintenance required. Register lids are available as replacement components in the event of vandalism or the need for meter retrofits.

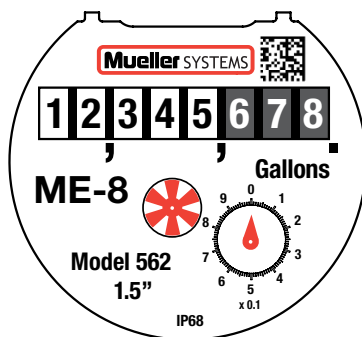
Materials and Specifications

MODEL	Mueller Encoder Eight Register (ME-8)
REGISTER TYPE	Absolute Encoder Register
SIZES	All 5/8" through 2" Positive Displacement Meters All current 5/8" through 2" Positive Displacement Meters Meter models 420, 435, 452 562, 572
STANDARDS	Manufactured and tested to meet or exceed all applicable parts of ANSI/AWWA C707 Standard and the American Standard Code for Information Interchange (ASCII)
TEMPERATURE OPERATING RANGE	14°F (-10°C) to 176°F (80 °C)
STORAGE TEMPERATURE RANGE	-40°F (-40°C) to 185°F (85°C)
CONNECTION OPTIONS	5' or 25' Nicor Connector, 5' or 25' Itron In-Line Connector, 5' or 25' wired Hot Rod, or Mi.Node with factory potted connections
MATERIALS	Register housing and lid - thermoplastic; Register lens – glass; Display – 8 digit visual resolution and up to 8 digit electronic resolution with Mueller Systems AMR/AMI systems
AMR/AMI COMPATIBILITY	Mueller Systems Hot Rod AMR system, Mi.Net AMI system, MegaNet AMI system, and other AMR/AMI systems that can utilize the Mueller Systems standard encoder protocol output. Touch pad compatible.

METER FACE PLATE - GALLONS

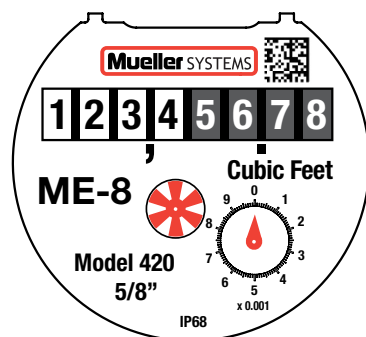


MODEL 420, 435, 452

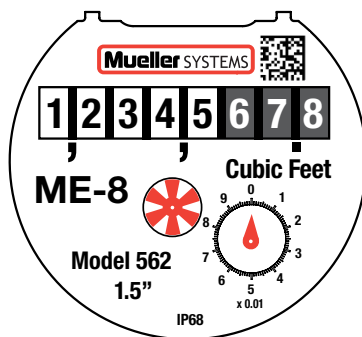


MODEL 562, 572

METER FACE PLATE - CUBIC FEET

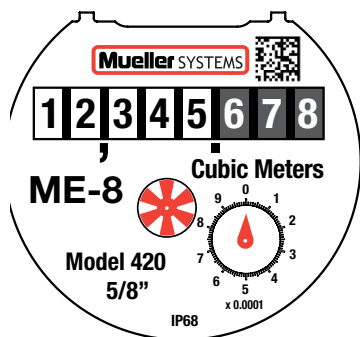


MODEL 420, 435, 452

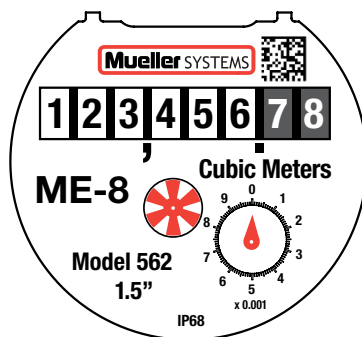


MODEL 562, 572

METER FACE PLATE - CUBIC METERS



MODEL 420, 435, 452



MODEL 562, 572

All Mueller Systems ME-8 registers are shipped displaying zeros for all odometer wheel values. Examples here are provided for illustration only.

Mueller Systems always recommends ME-8 registers are programmed for 8 wheel electronic resolution for the best leak and back flow detection possible

LIMITED WARRANTY FOR MUELLER SYSTEMS PRODUCTS

This Warranty shall apply to the Mueller Systems hardware and software products specified in Attachment A (respectively, the “Hardware” and “Software” and collectively, the “Products”) and is extended only to utilities, municipalities and other commercial users of the Products (referred to as the “Customer”).

Product Warranty

Subject to the limitations and conditions set forth herein, Mueller Systems warrants that commencing from the date of shipment to the Customer and continuing for the period set forth in Attachment A (referred to as the “Warranty Period”); (a) the Hardware will be free from defects in materials and workmanship under normal use, installation and service conditions; (b) the media on which the Software is furnished will be free of defects in materials and workmanship under normal use; and (c) the Software substantially conforms to the applicable published Mueller Systems functional specifications for the Software. Except as provided for in Attachment A, Mueller Systems will, at its option, either repair or replace the Product if it malfunctions or becomes inoperable due to a defect in workmanship or materials during the Warranty Period. If in its sole discretion Mueller Systems determines that it is unable to repair or replace the Product, it will refund to Customer a pro-rated amount paid for the defective Product. Products that are repaired or replaced under this Warranty will be warranted for the remainder of the original Warranty Period or 30 days, whichever is longer.

Exclusions

If, in Mueller Systems’ sole judgment, a Product has been subject to misuse, neglect or accident or has been damaged through abuse, alternation, improper installation or application, failure to follow Mueller Systems’ operation or maintenance instructions or negligence in transportation, handling, or storage, or repaired by anyone other than Mueller Systems or its authorized personnel, this Warranty will not be applicable. For Software, this Warranty will not apply if there has been a change to the Software’s operating environment not made or authorized by Mueller Systems; Customer fails to install any correction or enhancement provided by Mueller Systems; or a virus is introduced through no fault of Mueller Systems. This Warranty will also not cover damage due to acts of God, power failures, lightening, fire, flood, severe weather, hailstorms, insect and pest infestation, and other events reasonable beyond Mueller Systems’ control.

Product Returns

Claims under this Warranty will be considered if submitted to Mueller Systems within 60 days following the discovery of any defect covered by this Warranty and provided Mueller Systems or its agents are permitted a commercially reasonable opportunity to examine and analyze the material or workmanship claimed to be defective. If Mueller Systems elects to repair the Product, Customer will send it, properly packaged, to a repair facility designated by Mueller Systems. Customer will pay the cost of returning defective Products to the place of repair designated by Mueller Systems and Mueller Systems will pay the cost of delivering repaired or replacement Products to Customer.

Limits of Warranty and Liability

Damage to persons or property or other loss or injury resulting from defects in the Products or from improper installation or use shall not be the responsibility of Mueller Systems. Mueller Systems will not under any circumstance be liable for any indirect, special, incidental or consequential damages of any nature, whether based on contract, tort or other legal theory including but not limited to, business interruption costs, loss of profit or revenue, loss of data, loss of use of services, cost of capital, cost of substitute services or facilities, downtime costs or damages and expenses arising out of third-party claims, even if Mueller Systems has been advised of the possibility of such damages. In all cases, Mueller Systems’ total liability will be limited to the total payments made by Customer to Mueller Systems for the Products and services provided.

Disclaimer of Warranty

EXCEPT AS EXPRESSLY SET FORTH IN THIS WARRANTY, MUELLER SYSTEMS DISCLAIMS ALL OTHER EXPRESS OR IMPLIED WARRANTIES, CONDITIONS, OR REPRESENTATIONS, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WARRANTIES AGAINST TITLE AND AGAINST INFRINGEMENT AND WARRANTIES ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE. TO THE EXTENT ANY IMPLIED WARRANTY CANNOT BE EXCLUDED, SUCH WARRANTY IS LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD.

ATTACHMENT A

1. AMR / AMI Products¹:

Software – Mi.Host, Mi.Data, MCM (Meter Control Management), MCM Mobile, EZReader and other software products are covered by a one (1) year warranty from the date of shipment or provision to Customer.

Hardware – Mi.Node electric (Smart Meter), Mi.Hub Data Collector, Street Machine RF Receiver, PitStop handheld receivers, TRuRead™ remotes, laptops PC's, Server Hardware and all other peripheral electronic products are covered by a one (1) year warranty from the date of shipment to Customer.

Radio Modules – Mi.Node™ water modules and Hot Rod™ modules are covered by a ten (10) year warranty from the date of shipment to Customer. Additionally, Mi.Node water modules and Hot Rod™ modules are covered by a prorated warranty for years eleven (11) through fifteen (15) at a fifty-percent (50%) discount, years sixteen (16) through twenty (20) at a twenty-five-percent (25%) discount. Mi.Hydrant and Repeater Transceivers are covered by a ten (10) year warranty from the date of shipment to Customer. 420RDM (Remote Disconnect Valve) meters are covered by a five (5) year warranty from the date of shipment to Customer. All prorated warranty credits listed will apply to list pricing in effect at the time of the return.

Encoder Register Products – Hersey Translator™ Encoder registers, Hersey SSR Solid State Register, ME-8 Encoder registers, Wall Pads and Pit Pads are covered by a ten (10) year warranty from the date of shipment to Customer. Additionally, the complete unit is covered by a prorated warranty for years eleven (11) through fifteen (15) at a fifty-percent (50%) discount, years sixteen (16) through twenty (20) at a twenty-five-percent (25%) discount from the date of shipment to Customer. All prorated warranty credits listed will apply to list pricing in effect at the time of the return.

2. Water Metering Products:

Models 400, 500, MVR, RFM, FM3, HM, and HbMag cold-water meters and detector check models, **EDCIV** are covered for a period of one (1) year from the date of shipment to Customer.

Maincases for the above listed meters are covered for a period of twenty-five (25) years from the date of shipment to Customer.

Standard Registers for the above listed meters are covered for a period of fifteen (15) years from the date of shipment to Customer.

Models 400 and 500 meters perform to AWWA new meter accuracy standards as defined in the most current revision for a period of five (5) years from the date of shipment to Customer.

Models MVR, RFM, FM3, HM and HbMag meters perform to AWWA new meter accuracy standard as defined in the most current revision for a period of one (1) year from the date of shipment to Customer.

Models 400 and 500 meters perform to AWWA repaired meter accuracy standards for the following time periods:

5/8" – Fifteen (15) years from the date of shipment to Customer or the registration of 1,750,000 U.S. gallons, whichever comes first;

3/4" – Fifteen (15) years from the date of shipment to Customer or the registration of 2,000,000 U.S. gallons, whichever comes first;

1" – Fifteen (15) years from the date of shipment to Customer or the registration of 3,000,000 U.S. gallons, whichever comes first;

1-1/2" – Fifteen (15) years from the date of shipment to Customer or the registration of 5,500,000 U.S. gallons, whichever comes first;

2" – Fifteen (15) years from the date of shipment to Customer or the registration of 8,500,000 U.S. gallons, whichever comes first.

Solid State Meters (SSM) Mueller Systems SSM is will meet or exceed accuracy of +/- 1.5% between the specified minimum flow rate to the specified maximum flow rate for ten (10) years from date of shipment according to the following sizes:

5/8" Meter - 0.1 gpm to 20 gpm

5/8" x 3/4", 3/4" Short, and 3/4" Long Meter – 0.1 to 30 gpm

1" Meter – 0.4 to 55 gpm

1 1/2" Meter – 0.8 to 100 gpm

2" Meter – 0.8 to 160 gpm

The SSM is covered by a prorated warranty for years eleven (11) through fifteen (15) at a fifty-percent (50%) discount, years sixteen (16) through twenty (20) at a twenty-five-percent (25%) discount. The prorated warranty credit listed will apply to list pricing in effect at the time of the return.

¹ Unless otherwise expressly stated herein, all warranty terms are provided from the date of shipment to Customer.

If the above listed meters do not perform as specified, Provider will repair or replace them, at Provider's option, subject to the following:

An applicable meter shall be noncompliant if it fails to pass an accuracy test, conducted by the customer according to AWWA standards. If the meter is inoperative because of foreign material, all such material must be removed prior to testing. A copy of the customer's test results must accompany the meter being returned. If the customer chooses not to test a meter before returning it, Provider will repair or replace the meter at Provider's option after the meter has been tested by Provider. When test is conducted by Provider, the customer will be charged a reasonable testing fee.