



**Badger Meter**

## Test Circle Codes

For HR-E® LCD Encoders and E-Series® Ultrasonic Meters

### OVERVIEW

To convert an endpoint field reading into billing units, the reading data management software uses a Test Circle Code to identify the appropriate reading resolution to be applied to the endpoint meter reading. The Test Circle Code for high resolution encoders is based on the meter model and size, encoder type, unit of measure, and the Badger Meter endpoint that is attached to the encoder.

A multiplier has also been provided for instances where test circle codes are not used, such as with BEACON® Software as a Service (SaaS) and partner connectivity. The multiplier calculates the decimal place and appropriate reading resolution. For additional information, contact Badger Meter Technical Support.

### TEST CIRCLE CODES AND MULTIPLIERS FOR HR-E® LCD ENCODERS AND E-SERIES® ULTRASONIC METERS PROGRAMMED TO 9 DIGITS

#### 9-Digit Gallons

Meter Model	Size (in.)	Encoder Resolution (9 Digits)	ORION® Cellular Endpoints or ORION Mobile M Endpoints		ORION SE or ME Endpoints		ORION CE Endpoints		GALAXY® Endpoints	
			Test Circle Code	Resolution Code (Multiplier)	Test Circle Code	Multiplier	Test Circle Code	Multiplier	Test Circle Code	Multiplier
E-Series Ultrasonic										
E-Series	5/8...1	0.01	53	0.01	54	0.1	55	1	56	10
E-Series	1-1/2, 2	0.1	54	0.1	55	1	56	10	57	100
E-Series	3	0.1	54	0.1	55	1	56	10	57	100
E-Series	4	0.1	54	0.1	55	1	56	10	57	100
E-Series	6	1	55	1	56	10	57	100	58	1000
E-Series	8	1	55	1	56	10	57	100	58	1000
Recordall Disc Series										
LP	5/8, 5/8 x 3/4	0.01	53	0.01	54	0.1	55	1	56	10
M25	5/8, 5/8 x 3/4	0.01	53	0.01	54	0.1	55	1	56	10
M35	3/4	0.01	53	0.01	54	0.1	55	1	56	10
M40	1	0.01	53	0.01	54	0.1	55	1	56	10
M55	1	0.01	53	0.01	54	0.1	55	1	56	10
M70	1	0.01	53	0.01	54	0.1	55	1	56	10
M120	1-1/2	0.1	54	0.1	55	1	56	10	57	100
M170	2	0.1	54	0.1	55	1	56	10	57	100
Recordall Turbo Series										
T160	1-1/2	0.1	54	0.1	55	1	56	10	57	100
T200	2	0.1	54	0.1	55	1	56	10	57	100
T450	3	0.1	54	0.1	55	1	56	10	57	100
T1000	4	0.1	54	0.1	55	1	56	10	57	100
T2000	6	1	55	1	56	10	57	100	58	1000
T3500	8	1	55	1	56	10	57	100	58	1000
T5500	10	1	55	1	56	10	57	100	58	1000
T6200	12	10	56	10	57	100	58	1000	59	10000
T6600	16	10	56	10	57	100	58	1000	59	10000
T10000	20	10	56	10	57	100	58	1000	59	10000
Recordall Compound Series										
High Side T200	2	0.1	54	0.1	55	1	56	10	57	100
Low Side M25	2	0.01	53	0.01	54	0.1	55	1	56	10
High Side T450	3	0.1	54	0.1	55	1	56	10	57	100
Low Side M25	3	0.01	53	0.01	54	0.1	55	1	56	10
High Side T1000	4	0.1	54	0.1	55	1	56	10	57	100
Low Side M35	4	0.01	53	0.01	54	0.1	55	1	56	10
High Side T2000	6	1	55	1	56	10	57	100	58	1000
Low Side M35	6	0.01	53	0.01	54	0.1	55	1	56	10
High Side T3500	8	1	55	1	56	10	57	100	58	1000
Low Side M120	8	0.1	53	0.1	55	1	56	10	57	100

## 9-Digit Cubic Feet

Meter Model	Size (in.)	Encoder Resolution (9 Digits)	ORION Cellular Endpoints or ORION Mobile M Endpoints		ORION SE or ME Endpoints		ORION CE Endpoints		GALAXY Endpoints	
			Test Circle Code	Resolution Code (Multiplier)	Test Circle Code	Multiplier	Test Circle Code	Multiplier	Test Circle Code	Multiplier
E-Series Ultrasonic										
E-Series	5/8...1	0.001	52	0.001	53	0.01	54	0.1	55	1
E-Series	1-1/2, 2	0.01	53	0.01	54	0.1	55	1	56	10
E-Series	3	0.01	53	0.01	54	0.1	55	1	56	10
E-Series	4	0.01	53	0.01	54	0.1	55	1	56	10
E-Series	6	0.1	54	0.1	55	1	56	10	57	100
E-Series	8	0.1	54	0.1	55	1	56	10	57	100
Recordall Disc Series										
LP	5/8, 5/8 x 3/4	0.001	52	0.001	53	0.01	54	0.1	55	1
M25	5/8, 5/8 x 3/4	0.001	52	0.001	53	0.01	54	0.1	55	1
M35	3/4	0.001	52	0.001	53	0.01	54	0.1	55	1
M40	1	0.001	52	0.001	53	0.01	54	0.1	55	1
M55	1	0.001	52	0.001	53	0.01	54	0.1	55	1
M70	1	0.001	52	0.001	53	0.01	54	0.1	55	1
M120	1-1/2	0.01	53	0.01	54	0.1	55	1	56	10
M170	2	0.01	53	0.01	54	0.1	55	1	56	10
Recordall Turbo Series										
T160	1-1/2	0.01	53	0.01	54	0.1	55	1	56	10
T200	2	0.01	53	0.01	54	0.1	55	1	56	10
T450	3	0.01	53	0.01	54	0.1	55	1	56	10
T1000	4	0.01	53	0.01	54	0.1	55	1	56	10
T2000	6	0.1	54	0.1	55	1	56	10	57	100
T3500	8	0.1	54	0.1	55	1	56	10	57	100
T5500	10	0.1	54	0.1	55	1	56	10	57	100
T6200	12	1	55	1	56	10	57	100	58	1000
T6600	16	1	55	1	56	10	57	100	58	1000
T10000	20	1	55	1	56	10	57	100	58	1000
Recordall Compound Series										
High Side T200	2	0.01	53	0.01	54	0.1	55	1	56	10
Low Side M25	2	0.001	52	0.001	53	0.01	54	0.1	55	1
High Side T450	3	0.01	53	0.01	54	0.1	55	1	56	10
Low Side M25	3	0.001	52	0.001	53	0.01	54	0.1	55	1
High Side T1000	4	0.01	53	0.01	54	0.1	55	1	56	10
Low Side M35	4	0.001	52	0.001	53	0.01	54	0.1	55	1
High Side T2000	6	0.1	54	0.1	55	1	56	10	57	100
Low Side M35	6	0.001	52	0.001	53	0.01	54	0.1	55	1
High Side T3500	8	0.1	54	0.1	55	1	56	10	57	100
Low Side M120	8	0.01	53	0.01	54	0.1	55	1	56	10

## 9-Digit Cubic Meters

Meter Model	Size (in.)	Encoder Resolution (9 Digits)	ORION Cellular Endpoints or ORION Mobile M Endpoints		ORION SE or ME Endpoints		ORION CE Endpoints		GALAXY Endpoints	
			Test Circle Code	Resolution Code (Multiplier)	Test Circle Code	Multiplier	Test Circle Code	Multiplier	Test Circle Code	Multiplier
E-Series Ultrasonic										
E-Series	5/8...1	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
E-Series	1-1/2, 2	0.001	52	0.001	53	0.01	54	0.1	55	1
E-Series	3	0.001	52	0.001	53	0.01	54	0.1	55	1
E-Series	4	0.001	52	0.001	53	0.01	54	0.1	55	1
E-Series	6	0.01	53	0.01	54	0.1	55	1	56	10
E-Series	8	0.01	53	0.01	54	0.1	55	1	56	10
Recordall Disc Series										
LP	5/8, 5/8 x 3/4	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
M25	5/8, 5/8 x 3/4	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
M35	3/4	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
M40	1	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
M55	1	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
M70	1	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
M120	1-1/2	0.001	52	0.001	53	0.01	54	0.1	55	1
M170	2	0.001	52	0.001	53	0.01	54	0.1	55	1
Recordall Turbo Series										
T160	1-1/2	0.001	52	0.001	53	0.01	54	0.1	55	1
T200	2	0.001	52	0.001	53	0.01	54	0.1	55	1
T450	3	0.001	52	0.001	53	0.01	54	0.1	55	1
T1000	4	0.001	52	0.001	53	0.01	54	0.1	55	1
T2000	6	0.01	53	0.01	54	0.1	55	1	56	10
T3500	8	0.01	53	0.01	54	0.1	55	1	56	10
T5500	10	0.01	53	0.01	54	0.1	55	1	56	10
T6200	12	0.01	53	0.01	54	0.1	55	1	56	10
T6600	16	0.01	53	0.01	54	0.1	55	1	56	10
T10000	20	0.01	53	0.01	54	0.1	55	1	56	10
Recordall Compound Series										
High Side T200	2	0.001	52	0.001	53	0.01	54	0.1	55	1
Low Side M25	2	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
High Side T450	3	0.001	52	0.001	53	0.01	54	0.1	55	1
Low Side M25	3	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
High Side T1000	4	0.001	52	0.001	53	0.01	54	0.1	55	1
Low side M35	4	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
High Side T2000	6	0.01	53	0.01	54	0.1	55	1	56	10
Low Side M35	6	0.0001	51	0.0001	52	0.001	53	0.01	54	0.1
High Side T3500	8	0.01	53	0.01	54	0.1	55	1	56	10
Low side M120	8	0.001	52	0.001	53	0.01	54	0.1	55	1

## TEST CIRCLE CODES FOR HR-E LCD ENCODERS PROGRAMMED TO 6 DIGITS

An HR-E LCD encoder can be ordered in four, five or six-digit resolutions for certain applications. However, the following charts represent only the six-dial resolution. A “-1” Test Circle Code is used for all four or five-digit resolution HR-E LCD encoders.

### 6-Digit Gallons

Meter Model	Size (in.)	Encoder Resolution (6 Digits)	ORION CE Endpoints	
			Test Circle Code	Multiplier
Recordall Disc Series				
LP	5/8, 5/8 x 3/4	10	48	10
M25	5/8, 5/8 x 3/4	10	48	10
M35	3/4	10	48	10
M40	1	10	48	10
M55	1	10	48	10
M70	1	10	48	10
M120	1-1/2	100	49	100
M170	2	100	49	100
Recordall Turbo Series				
T160	1-1/2	100	49	100
T200	2	100	49	100
T450	3	100	49	100
T1000	4	100	49	100
T2000	6	1000	50	1000
T3500	8	1000	50	1000
T5500	10	1000	50	1000
T6200	12	10000	51	10000
T6600	16	10000	51	10000
T10000	20	10000	51	10000
Recordall Compound Series				
High Side T200	2	100	49	100
Low Side M25	2	10	48	10
High Side T450	3	100	49	100
Low Side M25	3	10	48	10
High Side T1000	4	100	49	100
Low side M35	4	10	48	10
High Side T2000	6	1000	50	1000
Low Side M35	6	10	48	10
High Side T3500	8	1000	50	1000
Low side M120	8	100	49	100

## 6-Digit Cubic Feet

Meter Model	Size (in.)	Encoder Resolution (6 Digits)	ORION CE Endpoints	
			Test Circle Code	Multiplier
Recordall Disc Series				
LP	5/8 , 5/8 x 3/4	1	65	1
M25	5/8 , 5/8 x 3/4	1	65	1
M35	3/4	1	65	1
M40	1	1	65	1
M55	1	1	65	1
M70	1	1	65	1
M120	1-1/2	10	66	10
M170	2	10	66	10
Recordall Turbo Series				
T160	1-1/2	10	66	10
T200	2	10	66	10
T450	3	10	66	10
T1000	4	10	66	10
T2000	6	100	67	100
T3500	8	100	67	100
T5500	10	100	67	100
T6200	12	1000	68	1000
T6600	16	1000	68	1000
T10000	20	10000	*	10000
Recordall Compound Series				
High Side T200	2	10	66	10
Low Side M25	2	1	65	1
High Side T450	3	10	66	10
Low Side M25	3	1	65	1
High Side T1000	4	10	66	10
Low side M35	4	1	65	1
High Side T2000	6	100	67	100
Low Side M35	6	1	65	1
High Side T3500	8	100	67	100
Low side M120	8	10	66	10

\* For additional test circle information, contact Badger Meter Technical Support.

## 6-Digit Cubic Meters

Meter Model	Size (in.)	Encoder Resolution (6 Digits)	ORION CE Endpoints	
			Test Circle Code	Multiplier
Recordall Disc Series				
LP	5/8 , 5/8 x 3/4	0.1	96	0.1
M25	5/8 , 5/8 x 3/4	0.1	96	0.1
M35	3/4	0.1	96	0.1
M40	1	0.1	96	0.1
M55	1	0.1	96	0.1
M70	1	0.1	96	0.1
M120	1-1/2	1	97	1
M170	2	1	97	1
Recordall Turbo Series				
T160	1-1/2	1	97	1
T200	2	1	97	1
T450	3	1	97	1
T1000	4	1	97	1
T2000	6	10	98	10
T3500	8	10	98	10
T5500	10	10	98	10
T6200	12	10	98	10
T6600	16	10	98	10
T10000	20	10	98	10
Recordall Compound Series				
High Side T200	2	1	97	1
Low Side M25	2	0.1	96	0.1
High Side T450	3	1	97	1
Low Side M25	3	0.1	96	0.1
High Side T1000	4	1	97	1
Low side M35	4	0.1	96	0.1
High Side T2000	6	10	98	10
Low Side M35	6	0.1	96	0.1
High Side T3500	8	10	98	10
Low side M120	8	1	97	1

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