

## SureStep® Stepping System Encoders

### Replacement Encoders

The STP-MTRA-ENC1 is a replacement for the encoder that comes standard with the STP-MTRD-17038E, STP-MTRD-23042E, and STP-MTRD-23065E integrated motor/drives. Note that the encoder included with (E) model advanced integrated motor/drives is internal and cannot be replaced.

The STP-MTRA-ENC9 is a replacement for the encoder that comes standard with the STP-MTR(x)-xxxxE stand alone step motors.

Installation tool and mounting hardware is included with all replacement encoders. For more information and details on how to wire the replacement encoders, please see the SureStep User Manual.

### Optional Encoders

Optional encoders can be purchased separately for standard integrated motor/drives and standalone dual-shaft motors in all NEMA 14, 17, and 23 sizes, and also for STP-MTRAC-34xxxD motors (currently not available for STP-MTRx-34xxxD motors). All (D) model (dual-shaft) step motors come with pre-drilled holes in the rear end cap for easy encoder mounting. Pre-installed encoders on standalone dual-shaft motors and standard integrated motor/drives can be retrofitted with an appropriate optional encoder if desired. Please see the chart on the following page for encoder compatibility.

#### Features:

- Fixed resolutions include 400ppr or 1000ppr
- Configurable models have up to 4096ppr (default = 400ppr)
- Choose line driver or push-pull (totem) output signals



STP-MTRA-ENC2



STP-MTRA-ENC9



STP-MTRA-ENC11

Sure Step Series Specifications – Encoders			
Part Number	Price	Description	Drawing
STP-MTRA-ENC1		SureStep incremental (quadrature) modular encoder, 5VDC, line driver (differential) output, 1000 ppr. For use with SureStep stepper motors with 5mm rear shaft. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC2		SureStep incremental (quadrature) modular encoder, 5VDC, Push-pull (totem) output, 1000 ppr. For use with SureStep stepper motors with 5mm rear shaft. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC3		SureStep incremental (quadrature) modular encoder, 5VDC, line driver (differential) output, 400 ppr. For use with SureStep stepper motors with 5mm rear shaft. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC4		SureStep incremental (quadrature) modular encoder, 5VDC, Push-pull (totem) output, 400 ppr. For use with SureStep stepper motors with 5mm rear shaft. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC5		SureStep incremental (quadrature) modular encoder, 5VDC, line driver (differential) output, 1000 ppr. For use with SureStep stepper motors with 1/4 inch rear shaft. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC6		SureStep incremental (quadrature) modular encoder, 5VDC, Push-pull (totem) output, 1000 ppr. For use with SureStep stepper motors with 1/4 inch rear shaft. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC7		SureStep incremental (quadrature) modular encoder, 5VDC, line driver (differential) output, 400 ppr. For use with SureStep stepper motors with 1/4 inch rear shaft. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC8		SureStep incremental (quadrature) modular encoder, 5VDC, Push-pull (totem) output, 400 ppr. For use with SureStep stepper motors with 1/4 inch rear shaft. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC9*		SureStep incremental (quadrature) modular encoder, 5VDC, line driver (differential) output, configurable up to 4096 ppr. For use with NEMA 14, 17, and 23 SureStep dual-shaft motors. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC10*		SureStep incremental (quadrature) modular encoder, 5VDC, Push-pull (totem) output, configurable up to 4096 ppr. For use with NEMA 14, 17, and 23 SureStep dual-shaft motors. Installation tool and mounting hardware included.	<a href="#">PDF</a>
STP-MTRA-ENC11		SureStep incremental (quadrature) modular encoder, 5 VDC, line driver (differential) output, 1000 ppr. For use with SureStep stepper motors with 3/8in rear shaft. Installation hardware included. Requires STP-CBL-EAxx cable.	<a href="#">PDF</a>
STP-MTRA-ENC12		SureStep incremental (quadrature) modular encoder, 5 VDC, push-pull (totem) output, 1000 ppr. For use with SureStep stepper motors with 3/8in rear shaft. Installation hardware included. Requires STP-CBL-EDxx cable.	<a href="#">PDF</a>
STP-MTRA-ENC13		SureStep incremental (quadrature) modular encoder, 5 VDC, line driver (differential) output, 400 ppr. For use with SureStep stepper motors with 3/8in rear shaft. Installation hardware included. Requires STP-CBL-EAxx cable.	<a href="#">PDF</a>
STP-MTRA-ENC14		SureStep incremental (quadrature) modular encoder, 5 VDC, push-pull (totem) output, 400 ppr. For use with SureStep stepper motors with 3/8in rear shaft. Installation hardware included. Requires STP-CBL-EDxx cable.	<a href="#">PDF</a>

\* ENC9 and ENC10 encoders come with multiple adapter sleeves to accommodate different motor shaft diameters. See the dimensional drawing for details.

## SureStep® Stepping System Encoders

Sure Step Series Encoder Compatibility						
Part Number	PPR	Bore Diameter	Output Type	Encoder Cable	PLC Compatibility	Motor Compatibility
<b>STP-MTRA-ENC1</b>	1000	5mm	Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	STP-MTRx-14xxxD STP-MTRx-14xxxE STP-MTRx-17xxxD STP-MTRx-17xxxE Standard STP-MTRD-xxxxE
<b>STP-MTRA-ENC2</b>			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC3</b>	400		Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC4</b>			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC5</b>	1000	0.25 inch	Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	STP-MTRx-23xxxD STP-MTRx-23xxxE STP-MTRAC-23xxxD
<b>STP-MTRA-ENC6</b>			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC7</b>	400		Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC8</b>			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC9</b>	48 to 4096 configurable** (default = 400)	2mm - 8mm	Line Driver	STP-CBL-EBxx (signal) STP-USBENC-CBL-1 (configuration)	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	STP-MTRx-14xxxD STP-MTRx-14xxxE STP-MTRx-17xxxD STP-MTRx-17xxxE STP-MTRx-23xxxD STP-MTRx-23xxxE STP-MTRAC-23xxxD Standard STP-MTRD-xxxxE STP-LE17-xxxADJ STP-LE23-xxxADJ
<b>STP-MTRA-ENC10</b>			Push-pull (totem)		BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC11</b>	1000	0.375 inch	Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	STP-MTRAC-34xxxD
<b>STP-MTRA-ENC12</b>			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC13</b>	400		Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	
<b>STP-MTRA-ENC14</b>			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	

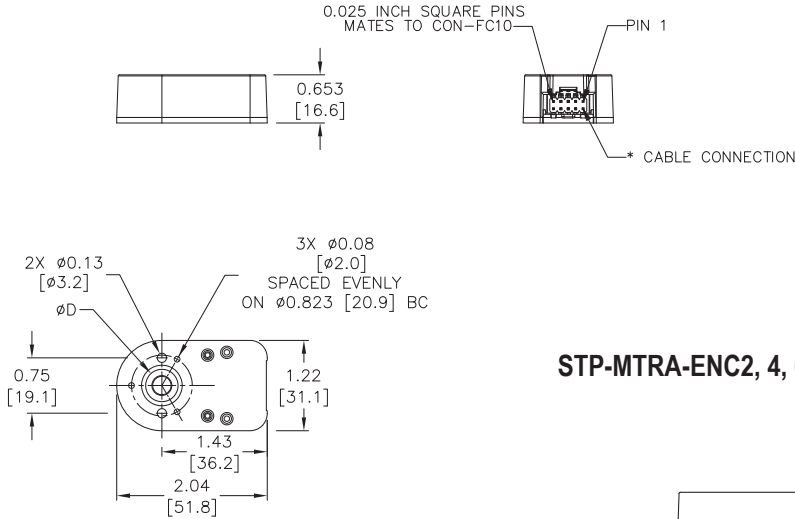
\* Requires FC-ISO-C

\*\* Cable STP-USBENC-CBL-1 required for configuration

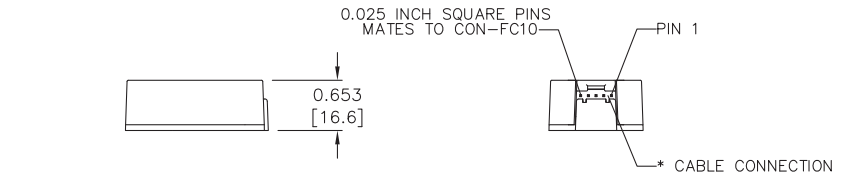
## SureStep® Stepping System Encoders

Dimensions = in [mm]

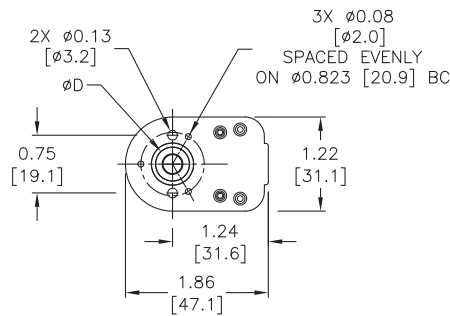
### STP-MTRA-ENC1, 3, 5, 7



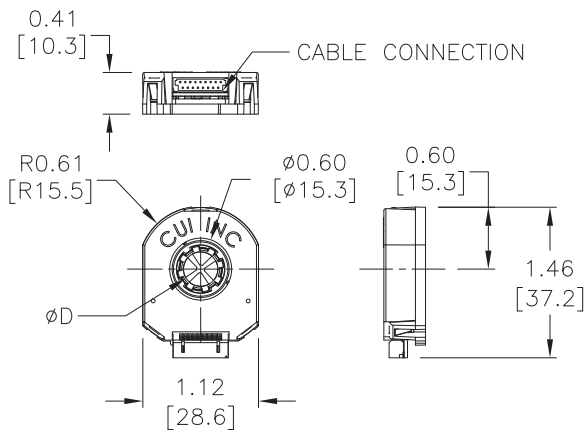
### STP-MTRA-ENC2, 4, 6, 8



Bolt Hole Circles for Mounting	
Encoder	Holes
ENC1, ENC2, ENC3, ENC4, ENC5, ENC6, ENC7, ENC8	2 holes @ 19.05mm (.75") 3 holes @ 20.9mm (.823")
ENC9, ENC10	2 holes @ 16mm, 19.05mm, 32.44mm, 46.02 mm 3 holes @ 20.9mm, 21.55mm, 22mm 4 holes @ 25.4mm



### STP-MTRA-ENC9, 10



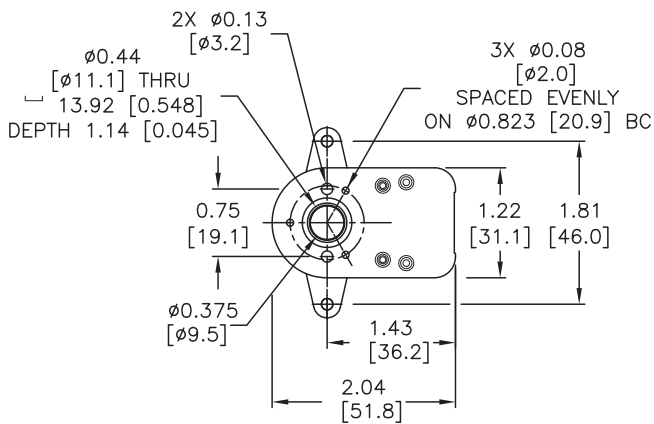
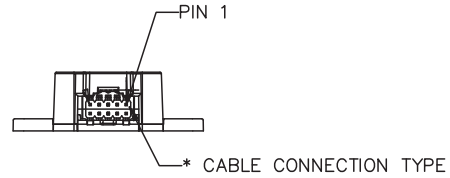
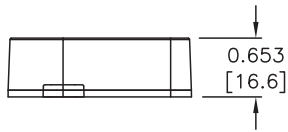
STP-MTRA-ENC9, 10 Additional Dimensions	
Location	Dimensions
D*	2mm, 3mm, 1/8 inch, 4mm, 3/16 inch, 5mm, 6mm, 1/4 inch, 8mm

\* The dimension of D varies based on which sleeve is used. Values listed represent the different sleeves available for this encoder.

## SureStep® Stepping System Encoders

Dimensions = in [mm]

### STP-MTRA-ENC11, 13



Bolt Hole Circles for Mounting	
Encoder	Holes
<b>ENC11, ENC12, ENC13, ENC14</b>	2 holes @ 19.05mm (.75")
	3 holes @ 20.9mm (.823")
	2 holes @ 46.02mm (1.812")

### STP-MTRA-ENC12, 14

