Stepping System Accessories

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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF
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.	PDF

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

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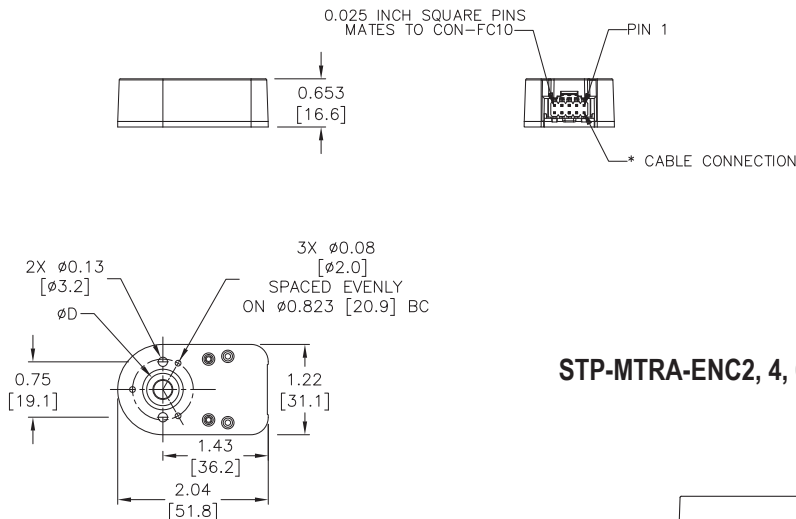| Sure Step Series Encoder Compatibility						
Part Number	**PPR**	**Bore Diameter**	**Output Type**	**Encoder Cable**	**PLC Compatibility**	**Motor Compatibility**
STP-MTRA-ENC1	1000	5mm	Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	STP-MTRx-14xxxD STP-MTRx-14xxxE STP-MTRx-17xxxD STP-MTRx-17xxxE Standard STP-MTRD-xxxxxE
STP-MTRA-ENC2			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC3	400		Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC4			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC5	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
STP-MTRA-ENC6			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC7	400		Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC8			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC9	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-xxxxxE STP-LE17-xxxADJ STP-LE23-xxxADJ
STP-MTRA-ENC10			Push-pull (totem)		BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC11	1000	0.375 inch	Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	STP-MTRAC-34xxxD
STP-MTRA-ENC12			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC13	400		Line Driver	STP-CBL-EAxx	P2-HSI, P3-HSI, BRX*, CLICK C0-1xDxE-D*	
STP-MTRA-ENC14			Push-pull (totem)	STP-CBL-EDxx	BRX*, CLICK C0-1xDxE-D*	

* Requires FC-ISO-C
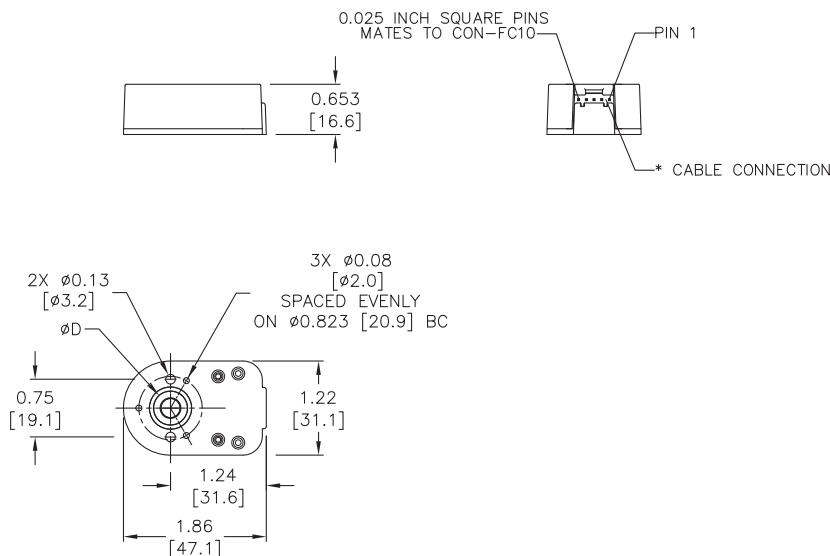**** Cable STP-USBENC-CBL-1 required for configuration**

SureStep

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Dimensions = in [mm]

STP-MTRA-ENC1, 3, 5, 7

0.025 INCH SQUARE PINS
MATES TO CON—FC10

PIN 1

0.653
[16.6]

* CABLE CONNECTION

2X ⌀0.13
[⌀3.2]

⌀D

0.75
[19.1]

3X ⌀0.08
[⌀2.0]
SPACED EVENLY
ON ⌀0.823 [20.9] BC

1.22
[31.1]

1.43
[36.2]

2.04
[51.8]

STP-MTRA-ENC2, 4, 6, 8

0.025 INCH SQUARE PINS
MATES TO CON—FC10

PIN 1

0.653
[16.6]

* CABLE CONNECTION

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

2X ⌀0.13
[⌀3.2]

⌀D

0.75
[19.1]

3X ⌀0.08
[⌀2.0]
SPACED EVENLY
ON ⌀0.823 [20.9] BC

1.22
[31.1]

1.24
[31.6]

1.86
[47.1]

STP-MTRA-ENC9, 10

0.41
[10.3]

CABLE CONNECTION

R0.61
[R15.5]

⌀0.60
[⌀15.3]

0.60
[15.3]

CUI INC

⌀D

1.46
[37.2]

1.12
[28.6]
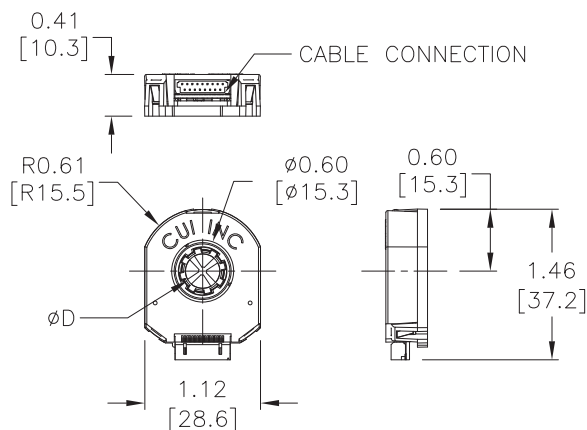
STP-MTRA-ENC9, 10 Additional Dimensions	
Location	**Dimensions**
D*	2mm, 3mm, 1/8 inch, 4mm, 3/16 inch, 5mm, 6mm, 1/4 inch, 8mm

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