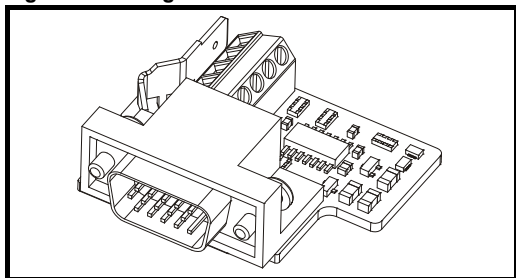# Single Ended Encoder Interface (15V & 24V versions)

1 Introduction

The 15V & 24V Single Ended Encoder Interface boards are intended for use on Unidrive SP, Digitax ST and the SM-Universal Encoder Plus. They are interface devices that convert 15V or 24V single ended logic signals, obtained from sources such as Hall Effect digital position sensors or encoders (such as those on Leroy Somer LS RPM permanent magnet motors) into differential EIA485 compatible signals used by the drive. The interface boards can be used with both UVW commutation or high frequency ABZ signals. Their power is taken from the 15Vdc supply on the drive. The interface board connects directly to the 15-way D-type encoder port on the drive, while a 5-way connector block is provided for the logic inputs and a 15Vdc output. Outputs to the drive for both 15V and 24V versions are 5V differential equivalents of the inputs. The 15V version is suitable for use with LS RPM motors.

Figure 1-1   Single Ended Encoder Interface

1.1   Identification

The different voltage versions of the 15V & 24V Single Ended Encoder Interface boards can be identified by the label located on top of the D-type connector, as shown in the figures below.
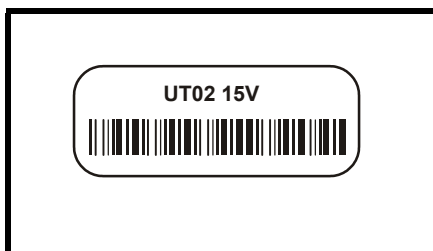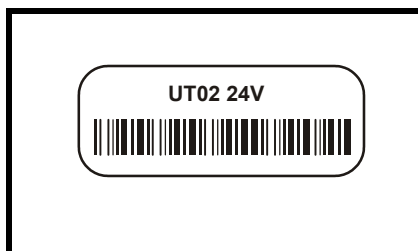
Figure 1-2   15V model label

UT02 15V

Figure 1-3   24V model label

UT02 24V

1.2   Installation

The Single Ended Encoder Interface board should be installed in the drive's 15 way D-type encoder port as shown below. Two screws are included in the box that should be used to ensure the interface board is securely connected to the encoder port on the drive or SM-Universal Encoder Plus. If using a Unidrive SP size 1 or larger, the interface board should only be connected to a SM-Universal Encoder Plus when the Solutions Module is installed in slots 2 or 3 (The interface board will interfere with the terminal cover if fitted to the SM-Universal Encoder Plus in slot 1).

Figure 1-4   Installation of the Single Ended Encoder Interface
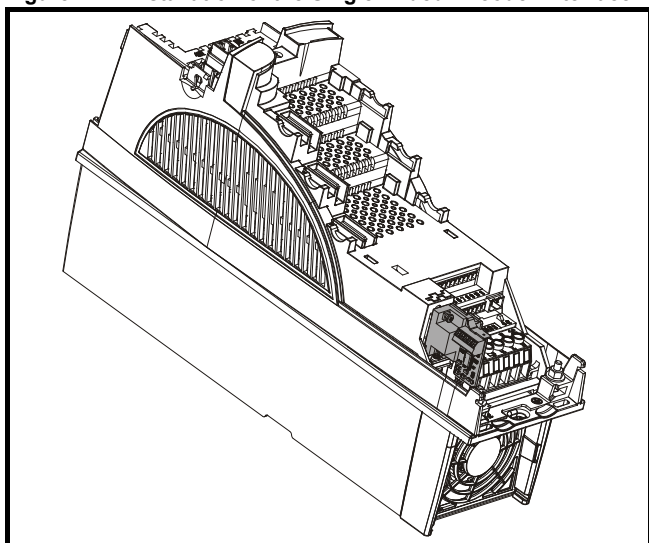
1.3   Terminal connections

Table 1-1   Terminal connections 15V and 24V versions shown

User Connector	Setting of Pr 3.38 {Pr 15/16/17.15}			
	Ab (0)	Fd (1)	Fr (2)	Ab.SErVO (3)
1	+15V, 170mA output			
2	0V			
3	A	F	F	U
4	B	D	R	V
5	Z	Z	Z	W

NOTE   The 6.3mm male spade connector is provided as a convenient 0V connection for encoder cable shielding.

1.4   Parameter settings

The parameter numbers listed in {..} brackets are for when the Single Ended Encoder Interface is used with an SM-Universal Encoder Plus module.
Ensure the encoder is of the correct voltage.

Table 1-2   Parameter settings required for the different encoder types

Encoder type	Setting of Pr 3.38	Setting of Pr 3.34
Ab	Ab (0)	As per encoder
Fd	Fd (1)	
Fr	Fr (2)	
Commutation only	Ab.Servo (3)	0

Table 1-3   Parameter settings required for the different encoder types

Encoder type	Setting of Pr 15/16/17.15	Setting of Pr 15/16/17.10
Ab	Ab.Servo (3)	As per encoder
Fd	Fd.Servo (4)	
Fr	Fr.Servo (5)	

Table 1-4   Parameter settings required for all encoder types

Parameter	Value	Description
Pr **3.36** {Pr **15/16/17.13**}	15V (2)	Set encoder power supply to 15V
Pr **3.39** {Pr **15/16/17.16**}	0	Disable termination resistors
Pr **3.40** {Pr **15/16/17.17**}	0	Disable wire break trip

NOTE

Since the highest voltage available from the drive for encoder supply is 15V, 24V encoders must be supplied from an external power supply. In this situation Pr **3.36** should still be set to 15V to supply the Single Ended Encoder Interface board with the correct supply voltage.

1.5   Further information

Figure 1-5   Single Ended Encoder Interface block diagram