MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ABB

FEN-01 68679273

TTL ENCODER INTERFACE MODULE

Used with the applicable ABB FEN-01 TTL Feedback configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: ABB FEN-01 User manual 3AFE68784603 Rev E, technical data pp.34 to 36

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Installation

Contents of this chapter

This chapter contains instructions on installing the TTL Encoder Interface module.

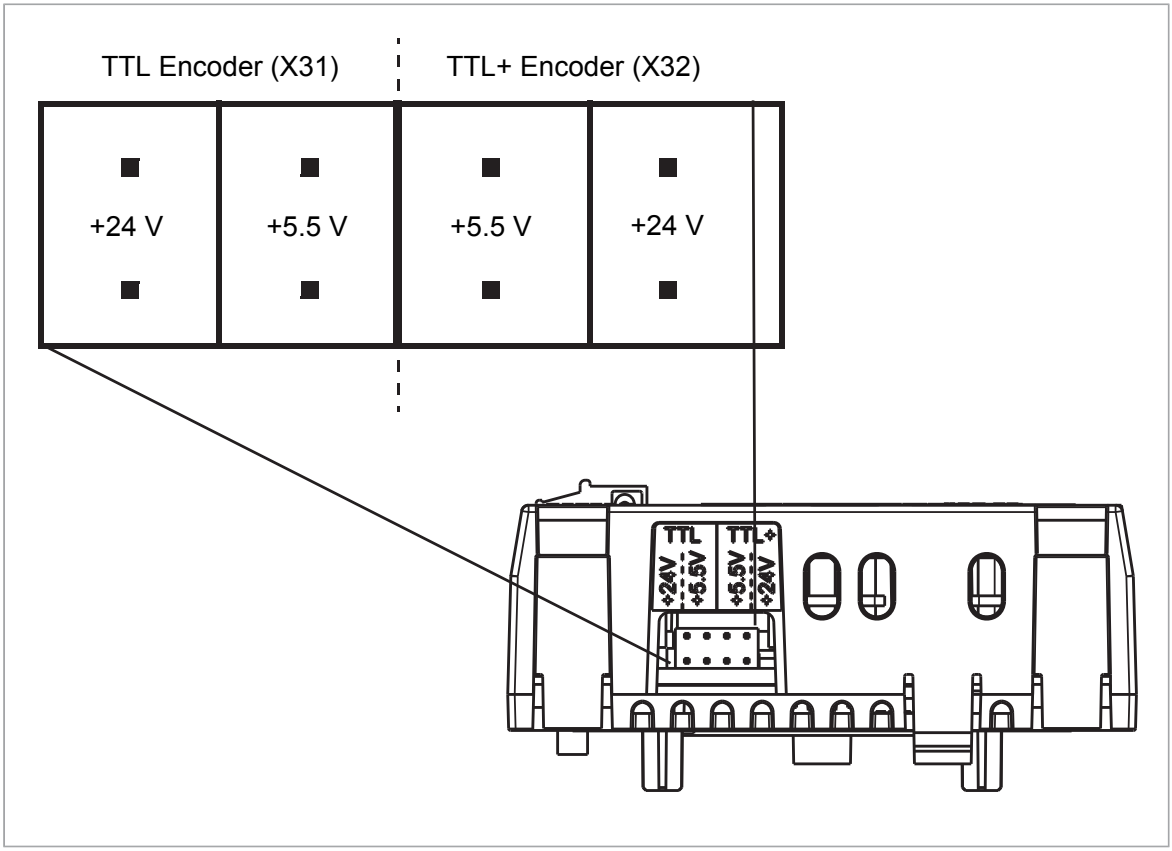


WARNING!
Follow the safety instructions given in this guide and in the drive's hardware manual.

Setting the supply voltage

WARNING!
Selecting the wrong supply voltage may damage or break the encoder.

A selectable supply voltage is provided for the TTL encoders' input. A +5.5 V or a +24 V voltage for either TTL encoder can be selected by vertically mounted jumpers as described by the following figure.



Note: If an external power supply is used, the appropriate jumper must be removed.

Note: If another FEN interface's TTL emulation output is connected to TTL input, the appropriate jumper must be removed.

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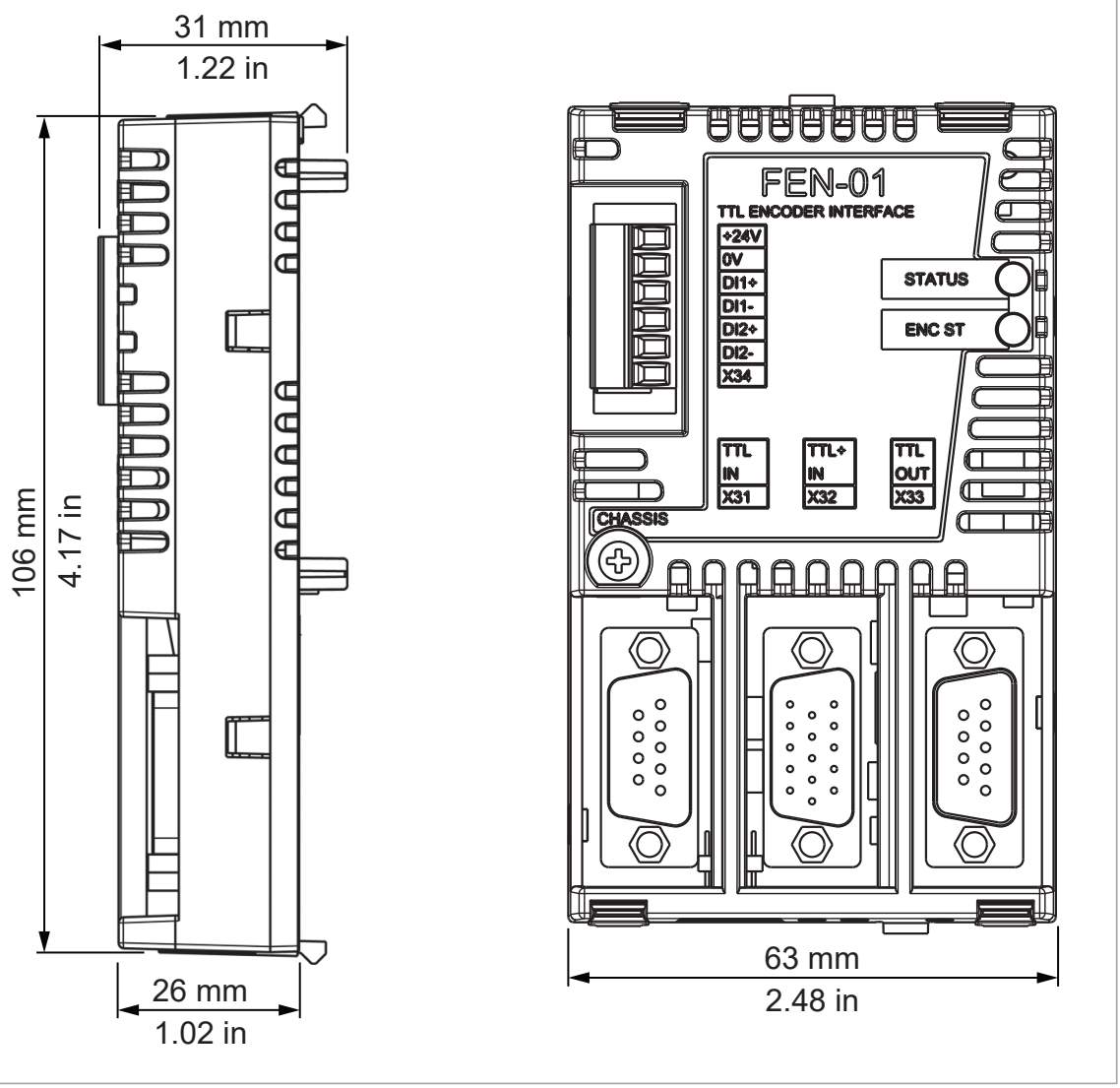
Technical data

Contents of this chapter

This chapter contains the technical data of the TTL Encoder Interface module.

Dimensions



General

Max. power consumption	350 mA at 24 V (Max. combined power consumption of encoders, latches and cabling 5W)
Degree of protection	IP20
Ambient conditions	The applicable ambient conditions specified for the drive in its Hardware Manual are in effect.

Connectors

- 20-pin socket
- 9-pin D-sub socket
- 15-pin D-sub socket
- 9-pin D-sub plug
- 6-pin header

TTL encoder input (X31)

Output voltages	+5.5 V DC -5%, -8%, 180 mA
	+24 V DC ±15%, 150 mA together with digital inputs
	+5.5 V and +24 V combined maximum power is 3.6 W
CH A, CH B, CH Z	RS-422/485, differential, 500 kHz (max)
Maximum cable length	30 m with a 5 V encoder (0.5 mm^2 cable for power supply)
	60 m with a 5 V encoder (two parallel 0.5 mm^2 cables for power supply)
	100 m with a 10...30 V TTL incremental encoder
Performance	Speed range: -32768...32767 rpm
	Speed resolution: 0.004 rpm (24 bits)
	Position resolution: 16.8 M/rev (24 bits)
	Position accuracy: 4x pulse count/rev
Isolation	Isolated together with digital inputs

TTL encoder input with commutation support (X32)

Output voltages	+5.5 V DC +2.5%, -1%, 200 mA
	+24 V DC ±15%, 150 mA
Thermistor	PTC thermistor input
CH A, CH B, CH Z, CH U, CH V, CH W	RS-422/485, differential, 500 kHz (max)
Maximum cable length	30 m with a 5 V encoder (0.5 mm^2 cable for power supply)
	60 m with a 5 V encoder (two parallel 0.5 mm^2 cables for power supply)
	100 m with a 10...30 V TTL encoder
Performance	Speed range: -32768...32767 rpm
	Speed resolution: 0.04 RPM (24 bits)
	Position resolution: 16 M/rev (24 bits)
	Position accuracy: 4x pulse count/rev
Isolation	Isolated together with TTL encoder emulation output

TTL encoder emulation output (X33)

Emulation	Supports emulations of TTL incremental encoder, 1...65535 pulses/rev, reference mark
CH A, CH B, CH Z	RS-422/485, 500 kHz (max)
Maximum cable length	100 m
Performance	Speed range: -32768...32767 rpm
	Position resolution: 4x pulse count/rev
Isolation	Isolated together with encoder input

Digital inputs for position latch (X34)

Output voltage	+24 V DC ±15%, short-circuit proof
Signal levels	< 5 V = 0, > 15 V = 1
Isolation	Isolated together with TTL encoder input