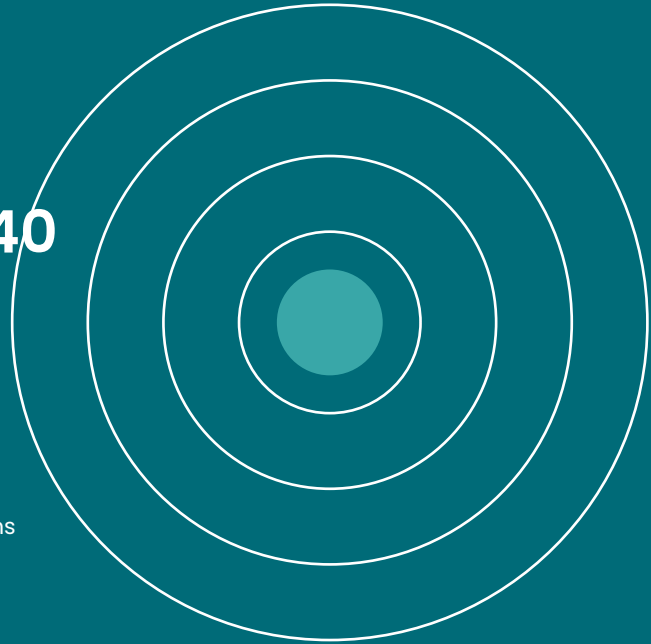


MANUFACTURER-SOURCE TECHNICAL REFERENCE

ABB FEN-31-68978840

Product Reference

HTL encoder interface for compatible ABB drive systems



DOCUMENT SCOPE

Independent Apter Power manual compiled only from the cited ABB manufacturer sources. No product photograph is included.

Product / lookup identity	ABB FEN-31-68978840
Reference number	68978840
Document basis	Published ABB product records, PDFs, and manuals listed on page 3



Product page

<https://www.apterpower.com/ABB/fen-31-68978840>
Apter Power contact

sales13@apterpower.com | +86 180 3023 5313

Product role and published parameters

WHAT IT IS, WHAT IT DOES, AND WHERE IT FITS

ABB FEN-31 is an HTL encoder interface installed in a compatible ABB drive option slot between the drive control board and an HTL encoder. It receives A, B and Z HTL pulse channels for speed, direction, position and reference-mark feedback, and it provides an isolated A/B/Z TTL encoder-emulation output plus two 24 V digital latch inputs. The interface supports differential or single-ended push-pull, open-collector and open-emitter HTL encoders; a permitted PTC, Pt1000 or KTY-84 motor-temperature sensor may also be connected when ABB's insulation requirements are met. It is used for closed-loop speed and position feedback in compatible ABB drive-controlled machinery. ABB's current official loose-item code is 68978955; the requested 68978840 identifier remains unverified in the cited direct ABB sources.

Published field	Manufacturer-published value or verified identity note
Product type	HTL encoder interface
Current ABB loose-item code	68978955
Requested identifier	68978840 – not verified in the cited direct ABB sources
Catalog option code	+L502
Encoder input channels	A, B and Z; maximum 300 kHz
Encoder supply	+15 V DC $\pm 20\%$ or +24 V DC $\pm 20\%$, 200 mA; external 10 to 24 V DC permitted
Encoder-emulation output	Isolated A, B and Z over RS-422/485; maximum 500 kHz

System function and signal path

01	A compatible HTL encoder generates A, B and Z pulse channels.
02	FEN-31 receives the pulse channels and supplies speed, direction, position and reference-mark feedback to the compatible ABB drive control system.
03	The configured drive uses that feedback for closed-loop speed or position-related control functions.
04	When required, FEN-31 provides a galvanically isolated A/B/Z TTL encoder-emulation output over RS-422/485 to compatible downstream equipment.

Applications, answers, and official sources

1 Closed-loop speed feedback in compatible ABB drive systems

2 Position and reference-mark feedback in drive-controlled machinery

3 Precise process-control functions that use encoder feedback

4 Isolated encoder-signal replication to compatible downstream equipment

Frequently asked questions

What is ABB FEN-31?	It is an HTL encoder interface that connects a compatible ABB drive control board to an HTL encoder for speed and position feedback.
Is 68978840 the current ABB order code for FEN-31?	No direct ABB source reviewed verifies 68978840 as the current code. ABB's current product page and ACS880 catalogue identify 68978955 as the loose-item code, so 68978840 requires nameplate or direct ABB spare-parts confirmation.
Which encoder output circuits does FEN-31 support?	ABB lists differential push-pull, single-ended push-pull, open-collector and open-emitter HTL encoders.
What is the maximum encoder input frequency?	The maximum A/B/Z encoder input frequency is 300 kHz.
How can the encoder be powered?	The module offers +15 V DC or +24 V DC internal supplies rated 200 mA, and ABB also permits an external 10 to 24 V DC encoder supply.
What does the encoder-emulation output provide?	It provides galvanically isolated A/B/Z TTL encoder-emulation signals over RS-422/485, up to 500 kHz, with 1 to 65535 programmable pulses per revolution.

Official ABB sources

ABB product page: 68978955 FEN-31	https://www.abb.com/global/en/products/68978955
ACS880 single drives catalogue, 3AUA0000098111 Rev T	https://library.e.abb.com/public/8d135332ba3d40108a75863899846497/ACS880_single_drives_catalog_3AUA0000098111_RevT_EN.pdf
FEN-31 HTL Encoder Interface User's Manual, Rev D	https://library.e.abb.com/public/8914f25fdad041ef97cab3ce87c870e8/EN_FEN-31_UM_D.pdf
FEN-31 HTL Encoder Interface Quick Installation Guide, Rev C	https://library.e.abb.com/public/f53b746ce1d54627ad80847ed61f095b/FEN-31_Quick_Guide_C.pdf