ENGINEERING
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VACON® I/O Options - OPT-A series

NX_ family - I/O option boards

OPT-A1

This I/O option board for the NXS and NXP products provides a variety of input and output signals for controlling the drive:

- 6 digital inputs, 24 V DC
- 1 open-collector digital output
- 2 analog inputs (0...10 V or -10…+10 V or 0…20 mA)
- 1 analog output (0…10 V or 0…20 mA)
- +10 V DC reference
- +24 V DC external supply or voltage output

- Slot: A

Ordering number
OPT-A1 uncoated
OPT-A1-V coated

> Return to VACON® overview

OPT-A2

This I/O option board for the NXS and NXP products provides two relay output signals:

- 2 pcs NO/NC relay outputs
- Slot: B

Ordering number
OPT-A2 uncoated
OPT-A2-V coated

> Return to VACON® overview

OPT-A3

This I/O option board for the NXS and NXP products provides 2 relay output signals and a thermistor input for overtemperature protection:

- 1 NO/NC relay output
- 1 NO relay output
- 1 PTC thermistor input

- Slot: B

Ordering number
OPT-A3-V coated

> Return to VACON® overview

OPT-A4 TTL Encoder

Use this feedback option board to connect NXP products to TTL and TTL(R) type pulse/incremental encoders conforming to the RS422 specification.

- Differential A+, A-, B+, B-, Z+ and Z- signals
- 1 qualifier input, used to trace the Z-pulse
- 1 fast digital input, used to trace very short pulses
- Selectable encoder voltage supply +5/+15/+24 V

- Slot: C

Ordering number
OPT-A4-V coated

> Return to VACON® overview

OPT-A5 HTL Encoder

Use this feedback option board to connect NXP products to HTL type pulse/incremental encoders.

- Galvanically isolated differential A+, A-, B+, B-, Z+ and Z- signals
  - 150kHz max input frequency
- 1 qualifier input, used to trace the Z-pulse
- 1 fast digital input, used to trace very short pulses
- Selectable encoder voltage supply +15/+24 V

- Slot: C

Ordering number
OPT-A5-V coated

> Return to VACON® overview

OPT-A7 HTL Encoder

Use this feedback option board to connect 2 HTL type pulse/incremental encoders to an NXP product.

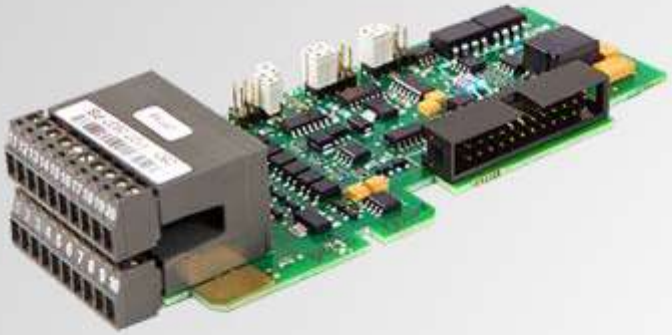
- Differential A+, A-, B+, B-, Z+ and Z- signals
- 1 qualifier input, used to trace the Z-pulse
- 1 fast digital input, used to trace very short pulses
- Selectable encoder voltage supply +15/+24 V

- Slot: C

Ordering number
OPT-A7 uncoated
OPT-A7-V coated

> Return to VACON® overview

OPT-A8



This I/O option board for the NXS and NXP products provides a variety of input and output signals for controlling the drive. It is equivalent to OPT-A1 except that analog inputs and outputs are galvanically isolated in OPT-A8.

- 6 digital inputs, 24 V DC
- 1 open-collector digital output
- 2 analog inputs (0...10V or -10…+10V or 0…20 mA)
- 1 analog output (0…10V or 0…20 mA)
- +10 V DC reference
- +24 V DC external supply or voltage output

- Slot: A

Ordering number
OPT-A8 uncoated
OPT-A8-V coated

> Return to VACON® overview

OPT-A9

This I/O option board for the NXS and NXP products provides a variety of input and output signals for controlling the drive. It is equivalent to OPT-A1 except that in OPT-A9 the connectors have a cross-section of 2.5 mm^2.

- 6 digital inputs, 24 V DC
- 1 open-collector digital output
- 2 analog inputs (0...10V or -10…+10V or 0…20 mA)
- 1 analog output (0…10V or 0…20 mA)
- +10 V DC reference
- +24 V DC external supply or voltage output

- Slot: A

Ordering number
OPT-A9 uncoated
OPT-A9-V coated

> Return to VACON® overview

OPT-AA

This I/O option board for the NXL product provides a variety of input and output signals for controlling the drive.

- 3 digital inputs, 24 V DC
- 1 open-collector digital output
- 1 NO relay output
- +24 V DC external supply or voltage output

- Slot: E

Ordering number
OPT-AA uncoated
OPT-AA-V coated

> Return to VACON® overview

OPT-AE

Use this feedback option board to connect HTL-type pulse/incremental encoders to NXP products.

The option board also outputs an Encoder Direction Signal and an Encoder Pulse Output Signal, which is produced by dividing the input pulses from the encoder.

- Differential A+, A-, B+, B-, Z+ and Z- signals
- 1 digital output for encoder direction
- 1 digital output for encoder output, a programmable divider
- Selectable encoder voltage supply +15/+24 V

- Slot: C

Ordering number
OPT-AE uncoated
OPT-AE-V coated

> Return to VACON® overview

OPT-AF Safe Torque Off

This option board provides the NXP product with the Safe Torque Off (STO) safety function. The option board also features an ATEX thermistor input for protection against motor overtemperature, where the motor is located in an ATEX environment. 2 relay outputs are also available in the option board.

- Safe Torque Off (STO) up to SIL2, PL d, Cat. 3 using 2 independent digital input channels
- ATEX thermistor input
- 1 NO relay output
- 1 NO/NC relay output

- Slot: B

Ordering number
OPT-AF-V coated

> Return to VACON® overview

OPT-AI

This I/O option board for the NXL product provides a variety of input and output signals for controlling the drive.

- 3 digital inputs, 24 V DC
- 1 PTC thermistor input
- 1 NO relay output
- +24 V DC external supply or voltage output

- Slot: E

Ordering number
OPT-AI uncoated
OPT-AI-V coated

> Return to VACON® overview

OPT-AK Sin/Cos Encoder

Use this feedback option board to connect sine/cosine type incremental encoders to an NXP product.

- Differential SIN+, SIN-, COS+, COS-, R+ and R- signals (1 volt peak-to-peak)
- Selectable encoder voltage supply +5/+15/+24V

- Slot: C

Ordering number
OPT-AK-V coated

> Return to VACON® overview

OPT-AL

This I/O option board for the NXS and NXP products provides a variety of input and output signals for controlling the drive.

- 6 digital inputs, 42…240 V AC
- 1 open-collector digital output
- 1 analog input 0…10V
- 1 analog input -10…+10V
- 1 analog output 0…10V
- 1 analog output 0…20 mA
- +15 V DC voltage output
- +24 V DC external supply or voltage output

- Slot: A

Ordering number
OPT-AL-V coated

> Return to VACON® overview

OPT-AN

This I/O option board for the NXP product provides a variety of input and output signals for controlling the drive.

- 6 galvanically isolated digital inputs, 24 V DC
- 2 analog inputs (0...10V or -10…+10V or 0…20 mA)
- 2 analog outputs (0...10V or -10…+10V or 0…20 mA)
- +10 V DC and -10 V DC reference
- +24 V DC external supply or voltage output

- Slot: A

Ordering number
OPT-AN-V coated

> Return to VACON® overview

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VACON® I/O Options - OPT-B series

VACON® 100, VACON® 20 and NX_ families - I/O option boards

OPT-B1

This I/O option board provides additional digital input and/or digital output signals to VACON® AC drives. The option board can be used in NX_ products and also in the VACON® 100 and VACON® 20 product series.

- 6 configurable digital input/output signals
  - 0…24 V DC when configured as input
  - Open-collector when configured as output
  - Signal type is selected using jumpers
- +24 V DC voltage output

- Slots NXS/NXP: BCDE
- Slots NXL: E
- Slots VACON® 100: CDE
- Slots VACON® 20: E

Ordering number
OPT-B1 uncoated
OPT-B1-V coated

> Return to VACON® overview

OPT-B2

This I/O option board provides additional relay output signals and a thermistor input to VACON® AC drives. The option board can be used in NX_ products and also in VACON® 100 and VACON® 20 product series.

- 1 NO relay output
- 1 NO/NC relay output
- 1 PTC thermistor input

- Slots NXS/NXP: BCDE
- Slots NXL: E
- Slots VACON® 100: CDE
- Slots VACON® 20: E

Ordering number
OPT-B2-V coated

> Return to VACON® overview

OPT-B4

This I/O option board provides one analog input and two analog output signals to VACON® AC drives. The option board can be used in NX_ products and also in VACON® 100 and VACON® 20 product series.

- 1 galvanically isolated analog input (0…20 mA)
- 2 galvanically isolated analog outputs (0…20 mA)
- +24 V DC voltage output

- Slots NXS/NXP: BCDE
- Slots NXL: E
- Slots VACON® 100: CDE
- Slots VACON® 20: E

Ordering number
OPT-B4-V coated

> Return to VACON® overview

OPT-B5

This I/O option board provides three additional relay output signals to VACON® AC drives. The option board can be used in NX_ products and also in VACON® 100 and VACON® 20 product series.

- 3 NO relay outputs

- Slots NXS/NXP: BCDE
- Slots NXL: E
- Slots VACON® 100: CDE
- Slots VACON® 20: E

Ordering number
OPT-B5-V coated

> Return to VACON® overview

OPT-B8 PT100 Measurement

This I/O option board provides three temperature measurement channels to VACON® NXS and NXP drives.

- 2 PT100 sensor inputs (3-wire)
- Measurement channel #3 allows 1-3 sensors in series
- -30…+200°C measurement range

- For new installations, option OPT-BH is recommended

- Slots NXS/NXP:BCDE

Ordering number
OPT-B8-V coated

> Return to VACON® overview

OPT-B9

This I/O option board provides five high-voltage digital inputs and one relay output to VACON® AC drives. The option board can be used in VACON® NX_ products and also in VACON® 100 and VACON® 20 product series.

- 5 digital inputs, 42…240 V AC
- 1 NO relay output

- Slots NXS/NXP: BCDE
- Slots NXL: E
- Slots VACON® 100: CDE
- Slots VACON® 20: E

Ordering number
OPT-B9 uncoated
OPT-B9-V coated

> Return to VACON® overview

OPT-BB Endat 2

Use this option board to enable speed feedback to an NXP drive from an EnDat 2 encoder. Use the EnDat interface to read the absolute position of the shaft. The option board outputs a simulated pulse encoder signal according to RS422 specification.

Closed-loop control of the motor requires that sin/cos signals are available.

- Absolute encoder with Endat 2 protocol
- Differential DATA, CLOCK, and sin/cos (1 Vpp) input
- Selectable encoder voltage supply +5/+12/+15 V
- 2 Fast digital inputs for tracing short pulses
- Output A+, A-, B+ and B- incremental signals according to RS422 specification

- Slot: C

Ordering number
OPT-BB uncoated
OPT-BB-V coated

> Return to VACON® overview

OPT-BC Resolver

Use this option board to enable speed feedback to an NXP drive from a resolver. The board provides a simulated pulse encoder output.

- Configurable excitation signal frequency, 2-20 kHz
- Differential sin/cos feedback signals
- Differential HTL freeze input for marking position data
- Differential HTL encoder input (A, B and Z signals)
- Differential HTL simulated encoder output (A, B and Z signals)

- Slot: C

Ordering number
OPT-BC uncoated
OPT-BC-V coated

> Return to VACON® overview

OPT-BE EnDat 2.1 and SSI

Use this option board to enable speed feedback to an NXP product from an EnDat 2.1 encoder. Use the EnDat or SSI interface to read the absolute position of the shaft.

Closed loop control of the motor requires that sin/cos signals are available.

- EnDat 2.1 and SSI protocol support
- DATA+, DATA-, CLOCK+ and CLOCK- differential signals
- Differential SIN+, SIN-, COS+ and COS- signals (1 volt peak-to-peak)
  - 350kHz maximum input frequency
- Selectable encoder voltage supply +5/+12/+15 V

- Slot: C

Ordering number
OPT-BE-V coated

> Return to VACON® overview

OPT-BF

This I/O option board provides additional output signals to VACON® AC drives. The option board can be used in VACON® 100 and VACON® 20 product series.

- 1 open-collector digital output
- 1 analog output (0…10V or 0…20 mA)
- 1 NO relay output

- Slots VACON® 100: CDE
- Slots VACON® 20: E

Ordering number
OPT-BF-V coated

> Return to VACON® overview

OPT-BH Temperature Measurement

This I/O option board provides three temperature measurement channels to VACON® AC drives. The option board can be used in NXS, NXP and in VACON® 100 products.

- 3 temperature measurement channels
- PT100, PT1000, Ni1000, KTY84 sensor support
- -50…+200°C measurement range
- All measurement channels support 1…3 PT100 sensors in series

- Slots NXS/P: BCDE
- Slots VACON® 100: CDE

Ordering number
OPT-BH-V coated

> Return to VACON® overview

OPT-BJ Safe Torque Off

This option board provides the VACON® 100 product with the Safe Torque Off (STO) safety function. The option board also features an ATEX thermistor input for protection against motor overtemperature, where the motor is located in an ATEX environment. One relay output is also available for indicating STO function.

- Safe Torque Off (STO) up to SIL3
  using two independent digital input channels
- ATEX thermistor input
- One relay output for STO function
- Slot: E

Ordering number
OPT-BJ-V coated

> Return to VACON® overview

OPT-BK AS-i Bus

This option board provides VACON® AC drives with an AS-i bus interface.

- Slots VACON® 100: CDE
- Slots VACON® 20X: E

Ordering number
OPT-BK-V coated

> Return to VACON® overview

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VACON® I/O Options - OPT-F series

VACON® 100 family - I/O option boards

OPT-F1

This I/O option board provides relay outputs to the VACON® 100 HVAC products using old control cards.

- Compatible with 70CVB01015 and 70CVB01418 control cards
- 2 NO/NC relay outputs
- 1 NO relay output

Ordering number
OPT-F1-V coated

> Return to VACON® overview

OPT-F2

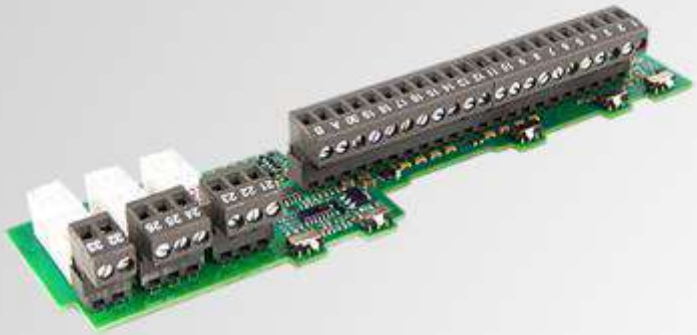
This I/O option board provides relay outputs and a thermistor input to the VACON® 100 HVAC products using old control cards.

- Compatible with 70CVB01015 and 70CVB01418 control cards
- 2 NO/NC relay outputs
- 1 PTC thermistor input

Ordering number
OPT-F2-V coated

> Return to VACON® overview

OPT-F3



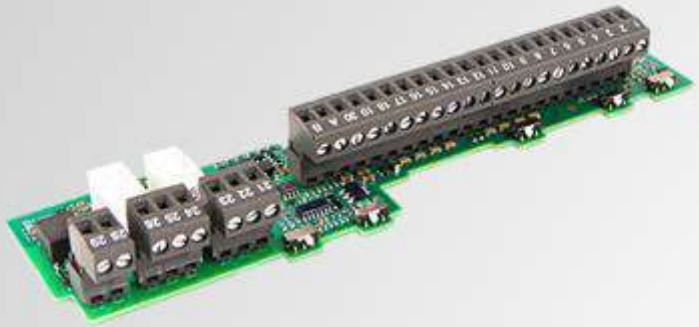
This I/O option board provides a variety of input/output signals and an RS485 interface to the VACON® 100 and VACON® 100 FLOW products. Also VACON® 100 HVAC products with new control board support this I/O board.

- Compatible with 70CVB01582 control card
- 6 pcs 0…24V digital inputs
- 2 analog inputs (0…10V or 0…20 mA)
- 1 analog output (0…10V or 0…20 mA)
- 2 NO/NC relay outputs
- 1 NO relay output
- +10 V DC output reference voltage
- +24 V DC external supply or voltage output
- RS485 interface for fieldbus

Ordering number
OPT-F3-V coated

> Return to VACON® overview

OPT-F4



This I/O option board provides a variety of input/output signals and an RS485 interface to the VACON® 100 INDUSTRIAL and VACON® 100 FLOW products. VACON® 100 HVAC products with new control board also support this I/O board.

- Compatible with 70CVB01582 control card
- 6 digital inputs, 0…24 V
- 2 analog inputs (0…10 V or 0…20 mA)
- 1 analog output (0…10 V or 0…20 mA)
- 2 NO/NC relay outputs
- 1 PTC thermistor input
- +10 V DC output reference voltage
- +24 V DC external supply or voltage output
- RS485 interface for fieldbus

Ordering number
OPT-F4-V coated

> Return to VACON® overview

ENGINEERING
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VACON® Fieldbus Options - OPT-C series

VACON® 100, VACON® 20 and NX_ families - fieldbus option boards

OPT-C2 Multiprotocol RS485

This option board provides a multiprotocol RS485 interface to NX_ products. The option board is identical to OPT-C8 apart from the fieldbus connector.

- Modbus RTU protocol support
- Metasys N2 protocol support
- Termination resistor can be activated with jumper
- 5-pin connector plug

Slots NXS/NXP: DE

Slots NXL: DE

Ordering number
OPT-C2 uncoated
OPT-C2-V coated

> Return to VACON® overview

OPT-C3 PROFIBUS DP

This option board provides a PROFIBUS DP-V0 interface to NX_ products. The option board is identical to OPT-C5 apart from the fieldbus connector.

- PROFIBUS DP-V0 protocol support
- Vacon profile and PROFIdrive-like profile
- Termination resistor can be activated with jumper
- 5-pin connector plug

Slots NXS/NXP: DE

Slots NXL: DE

Ordering number
OPT-C3-V coated

> Return to VACON® overview

OPT-C4 LonWorks

This option board provides a LonWorks interface to VACON® NX_ and VACON® 100 products.

- LonWorks protocol
- 3-pin plug connector

Slots NXS/NXP: DE

Slots NXL: DE

Slots VACON® 100: DE

Ordering number
OPT-C4-V coated

> Return to VACON® overview

OPT-C5 PROFIBUS DP

This option board provides a PROFIBUS DP-V0 interface to VACON® NX_ products. The option board is identical to OPT-C3 apart from the fieldbus connector.

- PROFIBUS DP-V0 protocol support
- VACON® profile and PROFIdrive-like profile
- Termination resistor can be activated with jumper
- Sub-D9 connector

Slots NXS/NXP: DE

Ordering number
OPT-C5-V coated

> Return to VACON® overview

OPT-C6 CANopen

This option board provides a CANopen interface to NX_ products.

- CANopen protocol support
- VACON® profile and CiA 402-like profile
- 5-pin plug connector

Slots NXS/NXP: DE

Slots NXL: DE

Ordering number
OPT-C6 uncoated
OPT-C6-V coated

> Return to VACON® overview

OPT-C7 DeviceNet

This option board provides a DeviceNet™ interface to VACON® NX_ products.

- DeviceNet protocol support
- VACON® profile and CIP AC Drive-like profile
- 5-pin plug connector

Slots NXS/NXP: DE

Slots NXL: DE

EtherNet/IP™ and DeviceNet™ are trademarks of ODVA, Inc.

Ordering number
OPT-C7-V coated

> Return to VACON® overview

OPT-C8 Multiprotocol RS485

This option board provides a multiprotocol RS-485 interface to VACON® NX_ products. The option board is identical to OPT-C2 apart from the fieldbus connector.

- Modbus RTU protocol support
- Metasys N2 protocol support
- Termination resistor can be activated with jumper
- Sub-D9 connector

Slots NXS/NXP: DE

Slots NXL: DE

Ordering number
OPT-C8 uncoated
OPT-C8-V coated

> Return to VACON® overview

OPT-CG Selma 2

This option board provides ABB Selma 2 protocol interface to VACON® NXP products.

- Selma 2 protocol
- 4-pin plug connector

Slots NXP: DE

Ordering number
OPT-CG-V coated

> Return to VACON® overview

OPT-CI Modbus TCP

This option board provides Modbus TCP interface to VACON® NX_ products.

- Modbus TCP protocol
- 1x RJ45 connector

Slots NXS/NXP: DE

Slots NXL: DE

Ordering number
OPT-CI-V coated

> Return to VACON® overview

OPT-CJ BACnet MS/TP

This option board provides BACnet MS/TP interface to VACON® NX_ products.

- BACnet MS/TP (RS485-based) protocol
- 5-pin plug connector

Slots NXS/NXP: DE

Slots NXL: DE

Ordering number
OPT-CJ-V coated

> Return to VACON® overview

OPT-CP PROFINET

This option board provides a PROFINET interface to VACON® NX_ products.

- PROFINET protocol
- VACON® profile and PROFIdrive-like profile
- 1x RJ45 connector

Slots NXS/NXP: DE

Slots NXL: DE

Ordering number
OPT-CP-V coated

> Return to VACON® overview

OPT-CQ EtherNet/IP

This option board provides EtherNet/IP interface to VACON® NX_ products.

- EtherNet/IP protocol
- VACON® profile and CIP AC Drive-like profile
- 1x RJ45 connector

Slots NXS/NXP: DE

Slots NXL: DE

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Ordering number
OPT-CQ-V coated

> Return to VACON® overview

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VACON® Fieldbus Options - OPT-E series

VACON® 100, VACON® 20 and NX_ families - fieldbus option boards

OPT-E3 PROFIBUS DP

This option board provides a PROFIBUS DP-V1 interface to VACON® 100 and VACON® 20 product families. The option board is identical to OPT-E5 apart from the fieldbus connector.

- PROFIBUS DP-V1 protocol support
- VACON® profile and PROFIdrive-like profile
- 5-pin plug connector

- Slots VACON® 100: DE
- Slots VACON® 20: E

Ordering number
OPT-E3-V coated

> Return to VACON® overview

OPT-E5 PROFIBUS DP

This option board provides PROFIBUS DP-V1 interface to VACON® 100 and VACON® 20 product families. The option board is identical to OPT-E3 apart from the fieldbus connector.

- PROFIBUS DP-V1 protocol support
- VACON® profile and PROFIdrive-like profile
- Sub-D9 connector

- Slots VACON® 100: DE
- Slots VACON® 20: E

Ordering number
OPT-E5-V coated

> Return to VACON® overview

OPT-E6 CANopen

This option board provides CANopen interface to VACON® 100 and VACON® 20 product families.

- CANopen protocol support
- VACON® profile and CiA 402-like profile
- 5-pin plug connector

- Slots VACON® 100: DE
- Slots VACON® 20: E

Ordering number
OPT-E6-V coated

> Return to VACON® overview

OPT-E7 DeviceNet

This option board provides DeviceNet interface to VACON® 100 and VACON® 20 product families.

- DeviceNet protocol support
- VACON® profile and CIP AC Drive-like profile
- 5-pin plug connector

- Slots VACON® 100: DE
- Slots VACON® 20: E

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Ordering number
OPT-E7-V coated

> Return to VACON® overview

OPT-E9 Dual-Port Ethernet

This option board provides multiprotocol Ethernet interface to VACON® NXS, NXP, VACON® 100 and VACON® 20 product families.

- Modbus TCP and PROFINET protocol support
- Future EtherNet/IP protocol support
- 2x RJ45 connectors with built-in switch
- RSTP protocol support currently

- Slots NXS/NXP: DE
- Slots VACON® 100: DE
- Slots VACON® 20: E

Ordering number
OPT-E9-V coated

> Return to VACON® overview

OPT-EC EtherCAT

This option board provides EtherCAT ® interface to VACON® NXP, VACON® 100 and VACON® 20 product families.

- EtherCAT protocol support
- Based on BECKHOFF ASIC
- VACON® profile and CiA 402-like profile
- 2x RJ45 connectors (EtherCAT supports line topology)

- Slots NXP: DE
- Slots VACON® 100: DE
- Slots VACON® 20: E

Limited availability

Ordering number
OPT-EC-V (coated)

> Return to VACON® overview

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VACON® Adapter Options - OPT-D series

NX_ family - adapter option boards

OPT-D1 SystemBus Adapter

This adapter option board allows VACON® NXP drives to be connected via fiber-optic cables. The link can be used for drive-to-drive communication or for parallelling of drives to achieve higher power.

- 2x fiber-optic pairs
- Slots NXP: DE

Ordering number
OPT-D1 uncoated
OPT-D1-V coated

> Return to VACON® overview

OPT-D2 SystemBus & CAN Adapter

This adapter option board enables connection of VACON® NXP drives via fiber-optic cables. Use the link for drive-to-drive communication or for parallelling of drives to achieve higher power. The board also includes a CAN interface for monitoring of multiple drives, for customized CAN communication or for I/O expansion.

- 1 fiber-optic pair
- Galvanically isolated CAN interface (3-pin plug connector)
  - IEC 61131 application CAN
  - MonitorBus
- Slots NXP: DE

Ordering number
OPT-D2-V coated

> Return to VACON® overview

OPT-D3 RS232 Adapter

This adapter option board enables connection of VACON® NXS and NXP drives to a PC via RS232 link.

- Galvanically-isolated RS232 interface
- D9 connector

- Slots NXS/NXP: DE

Ordering number
OPT-D3 uncoated
OPT-D3-V coated

> Return to VACON® overview

OPT-D6 CAN Adapter

This adapter option board supplies a CAN interface to the IEC 61131 application of VACON® NXP drives. Use the CAN interface for monitoring of multiple drives, for customized CAN communication or for I/O expansion.

- Galvanically-isolated CAN interface (3-pin plug connector)
  - IEC 61131 application CAN
  - MonitorBus
- Slots NXP: DE

Ordering number
OPT-D6-V coated

> Return to VACON® overview

OPT-D7 Line Voltage Measurement

This adapter option board provides VACON® NXP drives with an interface for measuring mains/line voltage. The board includes a transformer to reduce the line voltage to a measurable amplitude. The board is used in applications such as AFE, renewable energy or micro-grid.

- Line voltage and frequency measurement
- External voltage transformer 1:60
- 380…690 V AC input voltage

- Slots NXP: C

Ordering number
OPT-D7 uncoated
OPT-D7-V coated

> Return to VACON® overview