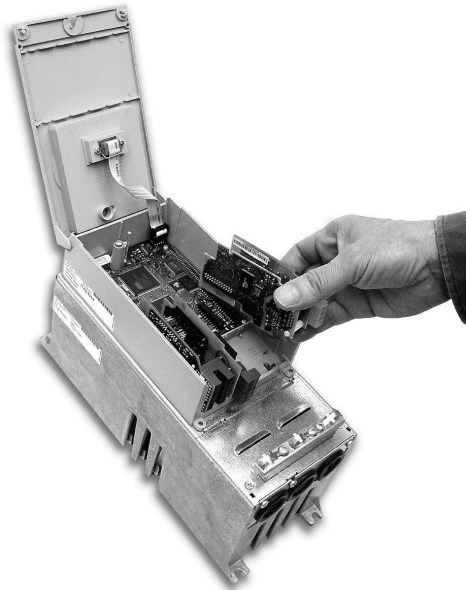


NXLOPTAx / NXOPTxx / OPTBx I/O EXPANSION OPTION BOARDS FOR INVERTERS

PRODUCT DATA



TYPES

OS no.	description
NXLOPTAx	I/O expansion boards used only with NXL HVAC product series
NXOPTxx	I/O expansion boards used with NXL HVAC and/or NXS product series
OPTBx	I/O expansion boards used with SmartDrive HVAC, NXL HVAC, and NXS products. All OPTBx boards are varnished as standard

SPECIFICATION

General

Analog inputs/outputs

Isolation All boards comply with EN 50178 galvanic isolation voltage rating of 500°V

Analog inputs (AI), voltage [V]

Input 0(2)...±10 VDC, Ri 200 kΩ, single ended
Resolution 10 bits / 0.1%
Accuracy ±1% of the full display

Analog input (AI), current [mA]

Input 0(4)...±20 mA, Ri 250 Ω, differential
Resolution 10 bits / 0.1%
Accuracy ±1% of the full display

Digital inputs (DI), DC-controlled

Input 24 VDC, Ri > 5 kΩ
State "0" 10 V, "1" 18 V

Digital inputs (DI), AC-controlled (OPTB9)

Input 42...240 VAC
State "0" < 33 V, "1" > 35 V

Thermistor input (embedded or on option boards)

Application To be used with motor protection PTC thermistors
Tripping limit $R_{trip} = 4.7 \text{ k}\Omega$

GENERAL

The Honeywell I/O expansion option boards can be used with Honeywell SmartDrive HVAC, NXL HVAC, and NXS inverters when more than standard inputs and outputs are needed.

These option boards are designed for easy installation (including even onsite installation) and are automatically recognized by the inverter software.

FEATURES

- Easy way to widen the I/O
- Plug and Play functionality - software will automatically recognize the expansion boards
- OPTBx I/O boards varnished as standard

OPTBH

Temp. sensor inputs 3x for Pt1000, Ni1000, Pt100, and
KTY84 sensors
2- or 3-wire sensors can be used.
Range -50...200 °C
Accuracy ± 1 °C

OPTB2

Commutators 2
Switching capacity 24 VDC / 8 A
230 VAC / 8 A
Min. switch load 5 V / 10 mA
Thermistor 1
Tripping limit $R_{trip} = 4.7 \text{ k}\Omega$

Analog output (AO), current [mA]

Output 0(4)...20 mA, $RL < 500 \Omega$
Resolution 10 bits / 0.1%
Accuracy ±2%

Analog output (AO), voltage [V]

Output 0(2)...10 VDC, $RL \geq 1 \text{ k}\Omega$
Resolution 10 bits / 0.1%
Accuracy ±2%

Relay outputs (RO)

Switching capacity 24 VDC / 8 A,
250 VAC / 8 A,
125 VDC / 0.4 A
Max. continuous load 2 A RMS
Min. switching load 5 V / 10 mA

Digital outputs (DO), open collector

Output 48 VDC / 50 mA, open collector

Auxiliary voltage output (+24 VDC)

Output 24 VDC (±15%)
Load max. 150 mA from one board
max. 250 mA total summarized load
from external +24 VDC outputs

Table 1. Auxiliary voltage outputs in standard inverters

Inverter family	QTY
SmartDrive COMPACT (fixed I/O)	1
NXL HVAC (fixed I/O+NXLOPTAI)	2
SmartDrive HVAC (fixed I/O)	2
NXS (fixed I/O+NXOPTA1)	2
HVAC232/402 (fixed I/O)	1

Table 2. Auxiliary voltage outputs in option boards

Option board	QTY	Compatibility
NXLOPTAA	1	NXL HVAC
NXLOPTAI	1	NXL HVAC
NXOPTA1	1	NXS
NXOPTB8	1	NXS

Reference voltage output (+10VDC)

Output 10 VDC (0...+2%)
Load max. 10 mA

Table 3. Reference voltage outputs in standard inverters

Inverter family	QTY
SmartDrive COMPACT (fixed I/O)	1
NXL HVAC (fixed I/O)	1
SmartDrive HVAC (fixed I/O)	1
NXS (NXOPTA1)	1
HVAC232/402 (fixed I/O)	1

Table 4. Reference voltage outputs in option boards

Option board	QTY	Compatibility
NXOPTA1	1	NXS

Auxiliary voltage input (ext. +24 VDC)

Input 24 VDC (±10%, max ripple voltage
100 mV RMS)
Application In special applications, this input can
be used as external auxiliary power
supply for control boards as well as for
I/O boards. Thus, interruptions in
mains supply do not affect the control
side.

Table 5. Auxiliary voltage inputs in standard inverters

Inverter family	QTY
SmartDrive COMPACT (fixed I/O)	-
NXL HVAC (fixed I/O)	1
SmartDrive HVAC (fixed I/O)	1
NXS (NXOPTA1)	1
HVAC232/402	-

Table 6. Auxiliary voltage inputs in option boards

Option board	QTY	Compatibility
NXOPTA1	1	NXS

I/O Configuration

Standard in Inverters

Type	AI	AO	DI	Relay NO	Relay NO / NC	DO (*)	PT100 / PT1000	TI (**)	configuration
HVAC232/402	2 (V / mA)	1 (mA)	6		2	1			Fixed I/O (no option board slots)
NXL HVAC	2 (mA / V)	1 (mA)	6	1	1			1	Fixed I/O + NXLOPTAI
SmartDrive HVAC	2 (mA / V)	1 (mA / V)	6		2			1	Fixed I/O
NXS	2 (mA / V)	1 (mA / V)	6	1	1	1		1	NXOPTA1

I/O Expansion Boards


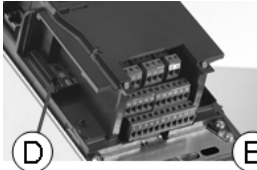
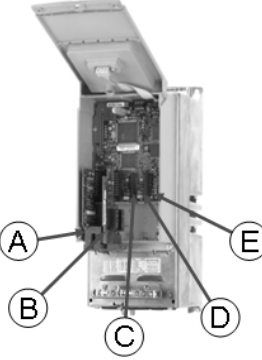

Type	AI	AO	DI	Relay NO	Relay NO / NC	DO (*)	PT100 / PT1000	TI (**)	Special
NXLOPTAA			3		1	1			
NXLOPTAI			3	1				1	As standard in NXL HVAC
NXOPTA1	2 (mA / V)	1 (mA / V)	6			1			As standard in NXS
OPTBH									3 (PT1000 or NI1000) inputs
OPTB2				1	1			1	
NXOPTB2				1	1			1	
NXOPTB8							3 (PT100)		
OPTB1			(6)			(6)			Inputs programmable as either DI or DO
OPTB4	1 (mA)	2 (mA)							analog I/O galvanically decoupled
OPTB5				3					
OPTB9			5	1					High-voltage digital inputs (41...240 VAC)
OPTBF		1 (mA / V)		1		1			

(* Open collector

(** Input for motor protection (PTC) thermistor

NOTE: Check the full configuration of inputs with terminal numbers from the product manuals from the Honeywell inverter page download center: <http://hwll.co/inverter>

Product Compatibility

Type	Product compatibility and installation place (option board slot)			
	NXL HVAC	SmartDrive HVAC	NXS	HVAC232/402
NXLOPTAA	E (*)	-	-	-
NXLOPTAI	E (*)	-	-	-
NXOPTA1	-	-	A	-
OPTBH	-	-	B, C, D, E	(**
OPTB2	-	-	B, C, D, E	(**
NXOPTB2	E (*)	-	B, C, D, E	-
NXOPTB8	-	-	B, C, D, E	-
OPTB1	-	D, E	B, C, D, E	(**
OPTB4	E (*)	D, E	B, C, D, E	(**
OPTB5	E (*)	D, E	B, C, D, E	(**
OPTB9	-	D, E	B, C, D, E	(**
OPTBF	-	D, E	-	-
				<p>OPTIONS: 1 SLOT REQUIRED</p> <p>EXTERNAL COVER ENC-SLOT MI1-MI3 (≤ 5.5 kW)</p> <p>INTERNAL MOLD ENC-SLOT MI4-MI5 (> 5.5 kW)</p> 

(* In the NXL HVAC, there is already an NXLOPTAI board in Slot E. This board must be removed if an option board is added. Only expander boards NXLOPTAA and NXLOPTAI can be used in Slot E if Slot D has field bus board installed.

(** The expansion boards for HVAC232/402 require the following: external cover ENC-SLOT MI1-MI3 (if ≤ 5.5 kW) or internal mold ENC-SLOT MI4-MI5 (if > 5.5 kW).

Honeywell

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