



HVAC Pocket Programming Guide

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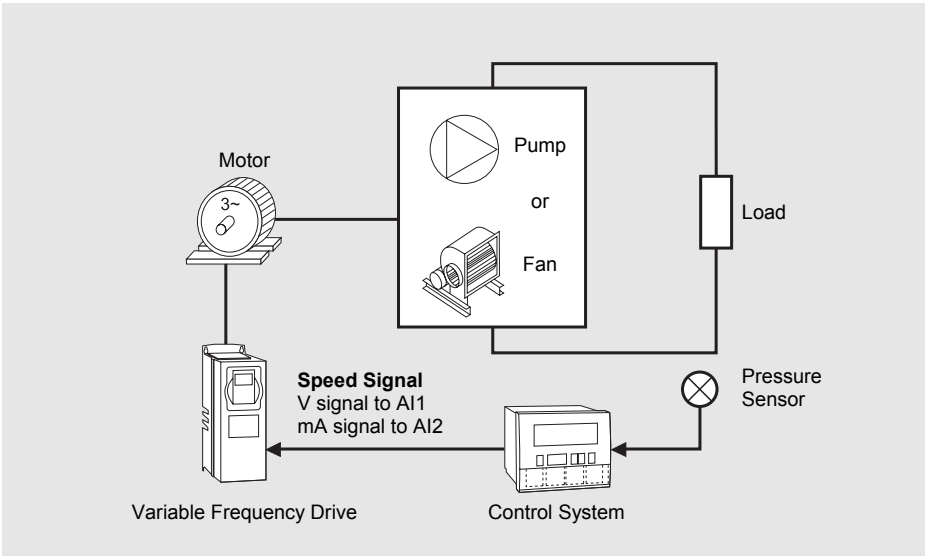
This guide provides a single reference document for the user of NXL HVAC (product codes starting with HVAC) and NXS (product codes starting with NXS) inverters, when using Basic Speed Control and PID Control in HVAC applications.

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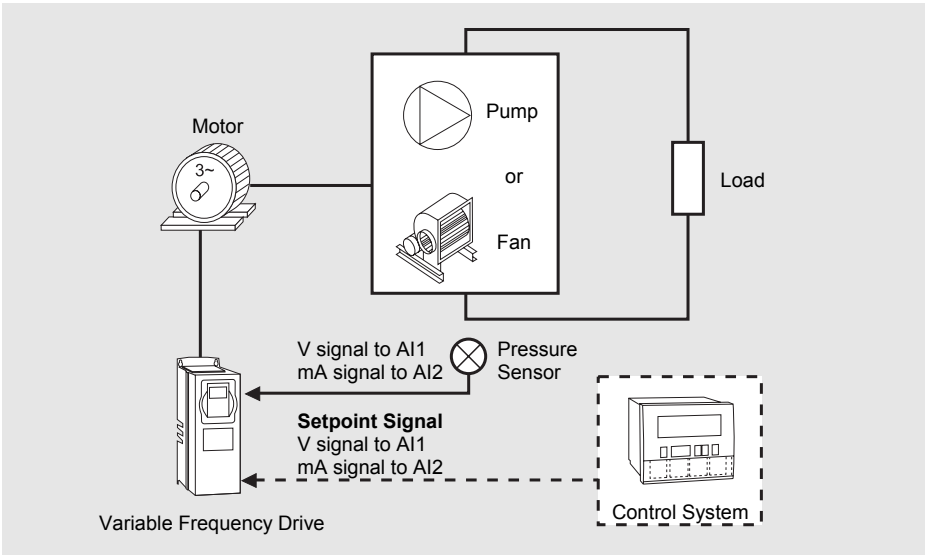
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Introduction

Basic Speed Control



PID Control



NXL HVAC Inverter Connections

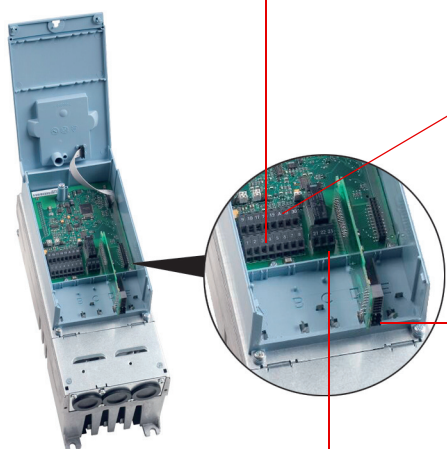
Installation and Power Connections

See the **NXL HVAC Quick Guide** and **NXL HVAC Safety Guide** (attached to each drive) for information on installation, cabling, cooling, power connections and safety. More information can be found in the **NXL HVAC User's Manual**, which can be downloaded from <http://www.inettrack.europe.honeywell.com/support>.

Control Terminal Connections

1	+ 10 V _{ref}	Reference output (voltage for potentiometer etc.)
2	AI1 +	Analogue Input 1 (V signal)
3	AI1 –	I/O Ground
4	AI2 +	Analogue Input 2 (mA signal)
5	AI2 –	
6	+24 V	+24 V output (max. 0.1 A)
7	GND	I/O ground
8	DIN1	Digital Input 1 (Start forward)
9	DIN2	Digital Input 2 (Start reverse)
10	DIN3	Digital Input 3 (Preset speed 1, default: 10 Hz)
11	GND	I/O Ground
18	AO1 +	Analogue output 1 Range 0–20 mA/R _L , max. 500 Ω
19	AO1 –	
A	RS485	Modbus RTU, serial bus
B	RS485	
30	+24V	Input for +24 V backup voltage
12	+ 24 V	+24 V output (max. 150 mA)
13	GND	I/O ground
14	DIE1	Exp. Digital Input 1 (Preset speed 2, default: 50 Hz)
15	DIE2	Exp. Digital Input 2 (Fault Reset)
16	DIE3	Exp. Digital Input 3 (Disable PID)
25	ROE1	Exp. Relay 1 NO (run)
26	ROE1	
28	TI+	Thermistor Input; Rtrip = 4.7 k1Ω (PTC)
29	TI –	

21	RO1		Relay 1 NO/NC (fault)
22	RO1		
23	RO1		



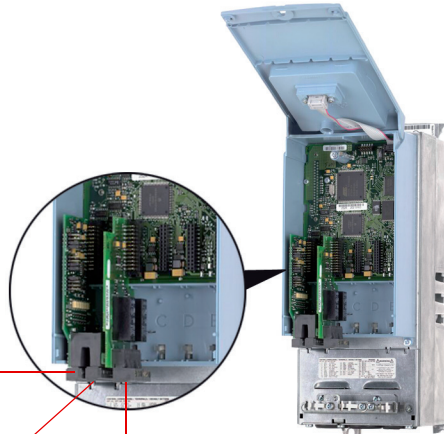
NXS Inverter Connections

Installation and Power Connections



See the **NX Series User's Manual** (included with every shipment) for information on installation, cooling, power connections and safety. The manual can also be downloaded from <http://www.inettrack.europe.honeywell.com/support>.

Control Terminal Connections

1	+10 V _{ref}	Reference output (voltage for potentiometer etc.)
2	AI1 +	Analogue Input 1 (V signal)
3	AI1 –	I/O ground
4	AI2 +	Analogue Input 2 (mA signal)
5	AI2 –	
6	+24 V	+24 V input/output (max. 0.1 A)
7	GND	I/O ground
8	DIN1	Digital Input 1
9	DIN2	Digital Input 2
10	DIN3	Digital Input 3




11	CMA	Digital input common for DIN1, DIN2 and DIN3
12	+24 V	Same as terminal 6
13	GND	I/O ground
14	DIN4	Digital Input 4
15	DIN5	Digital Input 5
16	DIN6	Digital Input 6
17	CMB	Digital input common for DIN4, DIN5 and DIN6
18	AO1 +	Analogue output 1, default range: 0–20 mA/R _L , max. 500 Ω
19	AO1 –	
20	DO1	Open collector Output

21	RO1		Relay 1 NO/NC
22	RO1		
23	RO1		
25	RO2		Relay 2 NO
26	RO2		
28	TI+	Thermistor Input; Rtrip = 4.7 kΩ (PTC)	
29	TI-		

Operating the NXL HVAC Keypad

Reading the Display



RUN and STOP
Indicate if the drive is running. When RUN blinks, STOP command has been given but the motor is still rotating.

DIRECTION
Active motor direction visible: forward or reverse.

READY
Lights up when AC power is on. In case of a fault, the symbol will not light up.

ALARM
Lights up to warn that the drive is running outside a certain limit.

FAULT
Indicates that unsafe operating conditions caused the drive to stop.

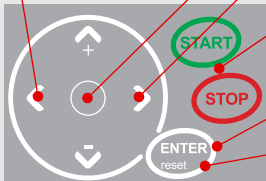
CONTROL PLACE
Active control place is visible: keypad, I/O or fieldbus.

NUMERIC INDICATIONS
Provide information on values and location in the menu structure.

UNIT
Unit of the value on screen visible.

Display Labels: RUN, STOP, READY, ALARM, FAULT, I/O term Keypad Bus/Comm, mA, V, s, %, kHz, °C, °F, rpm, kWh.

Keypad Push-Buttons



LEFT

- In menu: move backward
- In parameter edit mode: move cursor left
- Exit edit mode

Tip: Hold LEFT down 3 – 5 s for control place change
KEYPAD → REMOTE

UP+ and DOWN-

- Browse the pages in main and submenus
- Edit values

RIGHT

- In menu: move forward
- In parameter edit mode: move cursor right
- Enter edit mode

START and STOP
Control the motor if the keypad is the active control

Tip: Hold STOP down 5 s to launch the START UP WIZARD

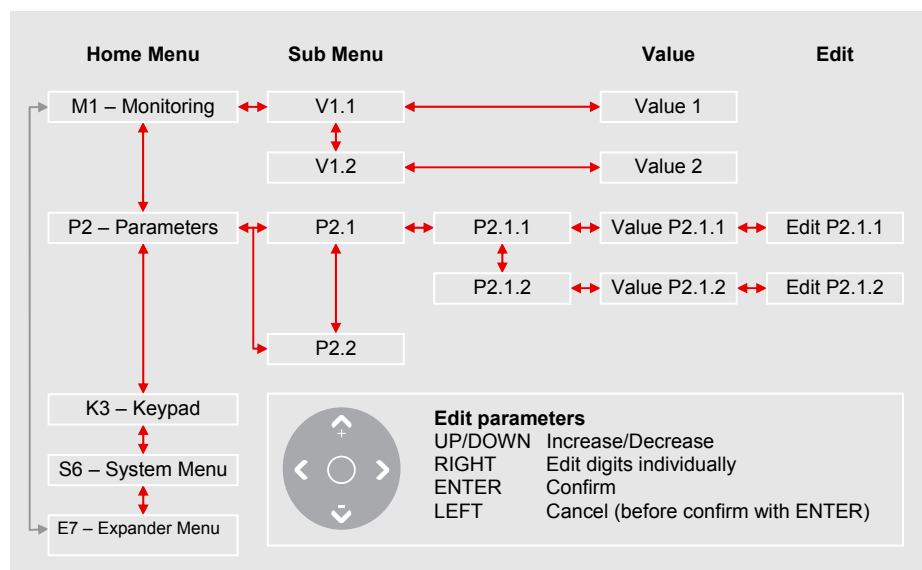
ENTER

- Confirmation of selections
- Fault history reset (2 – 3 s)

RESET
Reset active faults

Note: The motor may start immediately after resetting the fault!

Navigating the Menu



Monitoring Values (Menu M1)

V1.1	Output Frequency
V1.2	Frequency Reference
V1.3	Motor Speed
V1.4	Motor Current
V1.5	Motor Torque
V1.6	Motor Power
V1.7	Motor Voltage
V1.8	DC-link Voltage
V1.9	Unit Temperature
V1.10	Analogue Input 1
V1.11	Analogue Input 2
V1.12	Analogue Output Current
V1.13	Extra Analogue Output 1
V1.14	Extra Analogue Output 2
V1.15*	DIN1, DIN2, DIN3

V1.16**	DIE1, DIE2, DIE3
V1.17*	Relay Output 1
V1.18**	Extra Relays ROE 1, 2, 3
V1.19	Digital Output 1
V1.20	PID Reference
V1.21	PID Actual Value
V1.22	PID Error Value
V1.23	PID Output
V1.24	PFC Autochange 1, 2, 3
V1.25	Mode (0 = Not Selected, 1 = Standard, 2 = Fan, 3 = Pump, 4 = High Performance)

* Standard I/O

** Expander Board I/O (ROE2 and ROE3 not included in standard delivery)

NXL HVAC Basic Speed Control

What You Need to Know

Motor nameplate data

- Nominal Current
- Nominal Speed

Speed signal specification

- Signal type (volts, milliamps)
- Range (0-10, 2-10, 0-20, 4-20)

Setup

1 Run the Start Up Wizard

Note: Running the Start Up Wizard resets all parameters to their default values.

- Hold STOP button down for 5 seconds
- Select application type FAN or PUMP and confirm with ENTER
- Select motor nominal speed and confirm with ENTER
- Select motor nominal current and confirm with ENTER
- For speed signal 0 – 10 V use AI1 (Analogue Input 1)

2 Control Signal Settings for Speed Signals other than 0 – 10 V

- For other selections full parameter view is needed:
P2.1.14 Parameter Conceal Set to 0 (not in use)
- For speed signal 2 – 10 V use Analogue Input 1
P2.2.6 AI1 Signal Range Set to 4 (2 – 10 V)
- For speed signal 4 – 20 mA use Analogue Input 2
P2.1.15.14 I/O Reference Set to 1 (AI2)
- For speed signal 0 – 20 mA use Analogue Input 2
P2.1.15.14 I/O Reference Set to 1 (AI2)
P2.2.12 AI2 Signal Range Set to 1 (0 – 20 mA)

Manual Testing

1 Hold LEFT down for 3 seconds

Control Place automatically switches to Keypad

2 Use normal keypad buttons for speed control

- UP and DOWN to adjust the speed
- START and STOP for control

3 Hold LEFT down for 3 seconds to return to remote control (I/O or Fieldbus)

Parameter List

This is the list of the most commonly used parameter group: HVAC parameters. Default values on the list equal the values if FAN or PUMP has been selected in Start Up Wizard.

Code	Parameter	Unit	Default		Note
			FAN	PUMP	
P2.1.1	Min. frequency	Hz	20	20	
P2.1.2	Max. frequency	Hz	50	50	
P2.1.3	Accel. time 1	S	20.0	5.0	
P2.1.4	Decel. time 1	S	20.0	5.0	
P2.1.5	Current limit	A	1.1 x I _L		
P2.1.6	Motor nominal current	A	I _L		Value set in Start Up Wizard
P2.1.7	Motor nominal speed	Rpm	1440		Value set in Start Up Wizard
P2.1.8	Start function		2		0 = Ramp 1 = Flying Start 2 = Conditional Flying Start*
P2.1.9	Stop function		0		0 = Coasting 1 = Ramp
P2.1.10	Automatic restart		0		0 = Not used 1 = Used
P2.1.11	Motor nominal voltage	V	400		
P2.1.12	Motor nominal frequency	Hz	50.00		
P2.1.13	Preset speed 1	Hz	10.00		
P2.1.14	Parameter conceal		1		0 = All parameters and menus visible 1 = HVAC group P2.1 visible

* Start mode where Tripless Output Switching is enabled, recommended to be used with all pump and fan applications

NXL HVAC PID Control

What You Need to Know

Motor nameplate data

- Nominal Current
- Nominal Speed

Signal/sensor specification

- Signal type
(volts, milliamps)
- Range
(0-10, 2-10, 0-20, 4-20)
- Sensor span

Setup

3 Run the Start Up Wizard

Note: Running the Start Up Wizard resets all parameters to their default values.

- Hold STOP down for 5 seconds
- Select application type FAN or PUMP and confirm with ENTER
- Select motor nominal speed and confirm with ENTER
- Select motor nominal current and confirm with ENTER

4 Full view of parameters

- P2.1.14 Parameter Conceal Set to 0 (not in use)

5 Control Signal Settings

- For Volt sensor signal use Analogue Input 1 (AI1)

0 – 10 V	Default	(no settings needed)
2 – 10 V	P2.2.6 AI1 signal range	Set to 4
- For milliamp sensor signal use Analogue Input 2 (AI2)

4 – 20 mA	Default	(no settings needed)
0 – 20 mA	P2.2.12 AI2 signal range	Set to 1

6 PID

- PID settings

P2.9.1	PID activation	Set to 1 (activate)
P2.9.2	PID reference	
	no external reference	Set to 2 (value from keypad)
	external reference	Set to 0 (AI1) or 1 (AI2)
- Where is the sensor connected?

P2.9.3	Actual value input	Set to 0 (AI1) or 1 (AI2)
--------	--------------------	---------------------------
- PID reference (set-point)

Note: Only apply if not using external reference from controller!

- P3.5 PID reference value (Set point value in percentage)

$$\% = ((\text{set-point} - \text{minimum}) / \text{span}) \times 100$$

For example: set-point is 3.2 bar, the sensor span is 0 – 5 bar.
3.2 divided by 5 is 0.64; the value to set in P3.5 is thus 64

Note: Only one function per input. If there is a need to change mA input to V input or vice versa, please see instructions in the NXL HVAC User's Manual. Available for download at <http://inettrack.europe.honeywell.com/support>.

Manual Testing

- 1 **Hold LEFT down for 3 seconds**
Control Place automatically switches to Keypad
- 2 **Use normal keypad buttons for speed control**
 - UP and DOWN for adjusting the speed
 - START and STOP for control
- 3 **Hold LEFT down for 3 seconds to return to remote control (I/O or Fieldbus)**

Parameter List

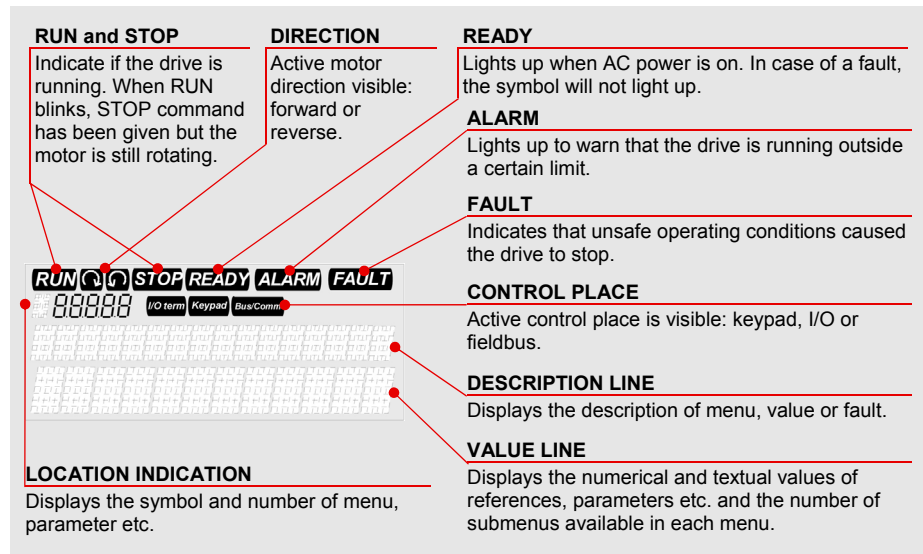
This is the list of the most commonly used parameter group: HVAC parameters. Default values on the list equal the values if Start Up Wizard selection has been FAN or PUMP.

Code	Parameter	Unit	Default		Note
			FAN	PUMP	
P2.1.1	Min. frequency	Hz	20	20	
P2.1.2	Max. frequency	Hz	50	50	
P2.1.3	Accel. time 1	S	20.0	5.0	
P2.1.4	Decel. time 1	S	20.0	5.0	
P2.1.5	Current limit	A	1, 1xI _L		
P2.1.6	Motor nominal current	A	I _L		Value set in Start Up Wizard
P2.1.7	Motor nominal speed	Rpm	1440		Value set in Start Up Wizard
P2.1.8	Start function		2		0 = Ramp 1 = Flying Start 2 = Conditional Flying Start*
P2.1.9	Stop function		0		0 = Coasting 1 = Ramp
P2.1.10	Automatic restart		0		0 = Not used 1 = Used (3x for automatic Restart)
P2.1.11	Motor nominal voltage	V	400		
P2.1.12	Motor nominal frequency	Hz	50.00		
P2.1.13	Preset speed 1	Hz	10.00		
P2.1.14	Parameter conceal		1		0 = All parameters and menus visible 1 = HVAC group P2.1 visible

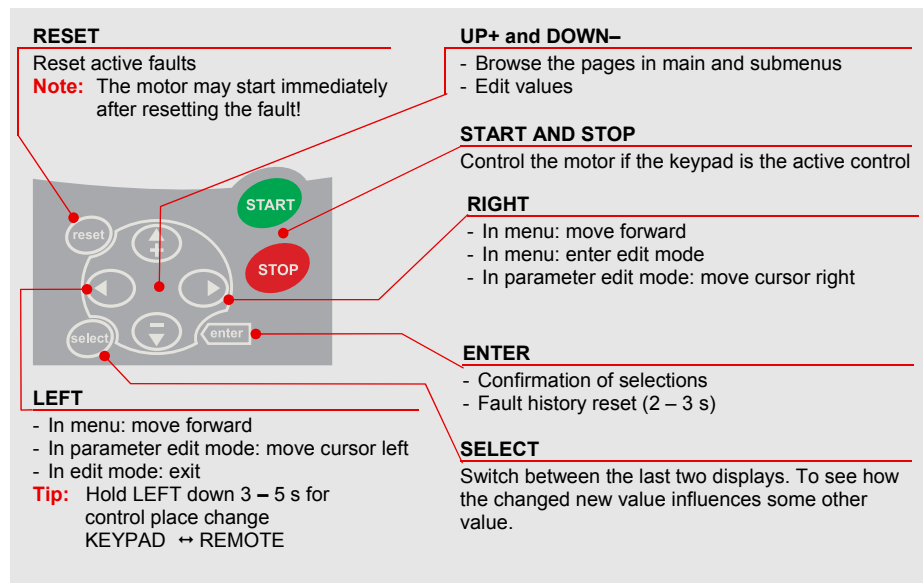
* Start mode where Tripless Output Switching is enabled.

Operating the NXS Keypad

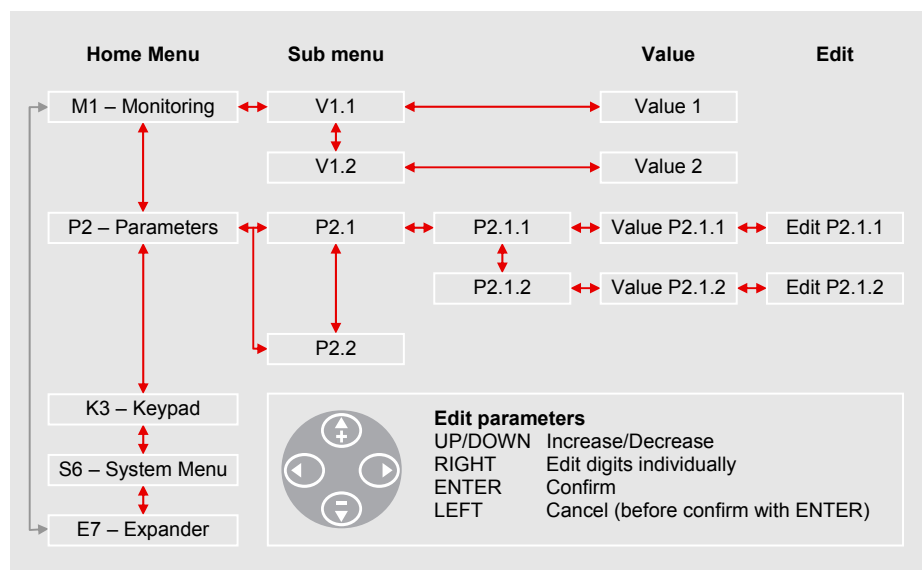
Reading the Display



Keypad Push-Buttons



Navigating the Menu



Monitoring Values (Menu M1)

V1.1	Output Frequency
V1.2	Frequency Reference
V1.3	Motor Speed
V1.4	Motor Current
V1.5	Motor Torque
V1.6	Motor Power
V1.7	Motor Voltage
V1.8	DC-link Voltage
V1.9	Unit Temperature
V1.10	Motor Temperature

V1.11	Voltage Input (AI1)
V1.12	Current Input (AI2)
V1.13	DIN1, DIN2, DIN3
V1.14	DIN4, DIN5, DIN6
V1.15	DO1, RO1, RO2
V1.16	Analogue output current (AO1)
V1.17*	Multimonitoring items (displays 3 selectable items simultaneously)

* Multimonitoring values can be selected in V1.17 by using RIGHT arrow to enter the edit mode

NXS Basic Speed Control

What You Need to Know

Motor nameplate data

- Nominal Current
- Nominal Speed
- Nominal Voltage, etc.

Speed signal specification

- Signal type (volts, milliamps)
- Range (0-10, 2-10, 0-20, 4-20)

Setup

1 Run the Start Up Wizard

Automatically activated at 1st start.

To restart the wizard, set P6.5.3 Start Up Wizard to Yes and cycle the main power.

Step	Question	Recommendation	Note
Basic Settings			
1	Language	English	
2	Application	Basic	
Application Settings			
3	Min. Frequency	20 Hz	Typical for Fan or Pump
4	Max. Frequency	50 Hz	Typical for Fan or Pump
5	Acceleration Time	30 s for Fan, 15 s for Pump	
6	Deceleration Time	30 s for Fan, 15 s for Pump	
Motor Settings			
7	Nom. Voltage for the motor	Check motor nameplate	Default typically OK
8	Nom. Frequency for the motor	Check motor nameplate	Default typically OK
9	Nom. Speed for the motor	Check motor nameplate	Critical
10	Nom. Current for the motor	Check motor nameplate	Critical
11	Motor Cos ϕ	Check motor nameplate	Default typically OK
Speed Signal Settings			
12	I/O Reference	mA signal: AI2	Default signal: 4 – 20 V
		V signal: AI1	Default signal: 0 – 10 V

2 Other Control Signal Settings

P2.15 Current reference offset Set to "No offset, 0 – 20 mA"

3 Start function

P2.11 Start Function Set to "CondFlyStart"

Start mode where Tripless Output Switching is enabled. Recommended function to be used especially in fan and pump applications.

Input and Output Functions

Only DIN3 is programmable in Basic application. If the other functions are required, change the application to Standard from System Menu (S6.2 Application selection).

DIN1	Start Forward	DIN4	Preset Speed 1	DO1	Ready
DIN2	Start Reverse	DIN5	Preset Speed 2	RO1	Run
DIN3	External Fault	DIN6	Fault reset	RO2	Fault

Manual Testing

- 1 Hold LEFT down for 3 seconds**
Control Place automatically switches to Keypad
- 2 Use normal keypad buttons for speed control**
 - UP and DOWN to adjust the speed
 - START and STOP for control
- 3 Hold LEFT down for 3 seconds to return to remote control (I/O or Fieldbus)**

Parameter List

This is the list of the basic parameters that is the only group visible when the Basic application is selected (in addition to Keypad and System Menu, which are always visible).

Code	Parameter	Default	Code	Parameter	Default
P2.1	Min. frequency	0 Hz	P2.11	Start function	Ramp
P2.2	Max. frequency	50 Hz	P2.12	Stop function	Coasting
P2.3	Acceleration time	3.0 s	P2.13	U/f optimization	Not used
P2.4	Deceleration time	3.0 s	P2.14	I/O reference	AI1
P2.5	Current limit	I_L	P2.15	Current reference offset	Offset 4-20 mA
P2.6	Motor nominal voltage	400 V*	P2.16	Analogue output function	Output Freq.
P2.7	Motor nominal frequency	50 Hz	P2.17	DIN3 function	External Fault
P2.8	Motor nominal speed	1440	P2.18	Preset speed 1	0 Hz
P2.9	Motor nominal current	I_H	P2.19	Preset speed 2	50 Hz
P2.10	Motor Cos φ	0.85	P2.20	Automatic restart	Disabled

* In 230 V series this is 230 V and in 690 V series this is 690 V.

NXS PID Control

What You Need to Know

Motor nameplate data

- Nominal Current
- Nominal Speed

Signal/sensor specification

- Signal type (volts, milliamps)
- Range (0-10, 2-10, 0-20, 4-20)
- Sensor span

Setup

1 Run the Start Up Wizard

Automatically activated at 1st start. To restart the wizard, set P6.5.3 Start Up Wizard to Yes and cycle the main power.

Step	Question	Recommendation	Note
Basic Settings			
1	Language	English	
2	Application	PID Control	
Application Settings			
3	Min. Frequency	20 Hz	Typical for Fan or Pump
4	Max. Frequency	50 Hz	Typical for Fan or Pump
5	Acceleration Time	30 s for Fan, 15 s for Pump	
6	Deceleration Time	30 s for Fan, 15 s for Pump	
Motor Settings			
7	Nom. Voltage for the motor	Check motor nameplate	Default typically OK
8	Nom. Frequency for the motor	Check motor nameplate	Default typically OK
9	Nom. Speed for the motor	Check motor nameplate	Critical
10	Nom. Current for the motor	Check motor nameplate	Critical
11	Motor Cos ϕ	Check motor nameplate	Default typically OK
PID and Sensor Settings			
12	PID Reference	Keypad reference	No controller
		mA signal: AI2 V Signal: AI1 Fieldbus	Signal from controller
13	Actual Input	mA signal: AI2	Default: 4 – 20 mA
		V signal: AI1	Default: 0 – 10 V

2 Other Control Signal Settings

2 – 10 V: change the value of P2.2.16 AI1 signal range to 20 – 100 %
 0 – 20 mA: change the value of P2.2.21 AI2 signal range to 0 – 20 mA

3 PID reference from keypad (if no external reference signal)

R3.4 PID reference value (set-point value in percentage)

$$\% = ((\text{set-point} - \text{minimum}) / \text{span}) \times 100$$

For example: set-point is 3.2 bar, the sensor span is 0 – 5 bar.

3.2 divided by 5 is 0.64; the value to set in P3.5 is thus 64

4 Start function

Set P2.4.6 Start Function to "CondFlyStart"

Start mode where Tripless Output Switching is enabled. Recommended function to be used especially in fan and pump applications.

Note: Only one function per input. If there is a need to change mA input to V input or vice versa, please see instructions in NX User's Manual.

Input and Output Functions

All inputs and outputs are programmable. Here are the default values:

DIN1	Start A (PID controller)	DO1	Ready
DIN2	External Fault	RO1	Run
DIN3	Fault Reset	RO2	Fault
DIN4	Start B (direct frequency reference)	AO1	Output frequency
DIN5	Jogging Speed		
DIN6	Control place A/B selection: open = A (PID) closed = B (direct reference)		

Manual Testing

- 1 Hold LEFT down for 3 seconds**
Control Place automatically switches to Keypad
- 2 Use normal keypad buttons for speed control**
 - Up and down arrows to adjust the speed
 - START and STOP for control
- 3 Hold LEFT down for 3 seconds to return to remote control (I/O or Fieldbus)**

Parameter Menus

Here is the list of parameter menus available in PID application.

Code	Parameter	Description
2.1	Basic parameters	All basic settings for operation and PID
2.2	Input signals	Settings for input signals
2.3	Output signals	Settings for output signals
2.4	Drive control	Specific settings for VFD (Start/Stop functions etc.)
2.5	Prohibit frequency	Settings for resonance elimination
2.6	Motor control	Specific settings for motor control
2.7	Protections	Settings for VFD protections
2.8	Auto restart	Settings for automatic restart functions

Inverter Fault Tracing

Conveniently, the fault coding and trip logic are similar in all Honeywell NX inverters. This table thus applies to both NXS and NXL HVAC.

Fault Code	Fault	Possible Cause	Correcting measures
1	Overcurrent	Frequency converter has detected too high a current ($> 4 \cdot I_n$) in the motor cable: <ul style="list-style-type: none"> - Sudden heavy load increase. - Short circuit in motor cables. - Unsuitable motor. 	Check loading. Check cables. Check motor size.
2	Overvoltage	The DC-link voltage has exceeded the limits defined in <ul style="list-style-type: none"> - Too short a deceleration time. - High overvoltage spikes in utility. 	Increase deceleration time.
3	Earth fault	Current measurement has detected that the sum of motor phase current is not zero: <ul style="list-style-type: none"> - Insulation failure in cables or motor. 	Check motor cables and motor.
5	Charging switch	The charging switch is open when the Start command has been given. <ul style="list-style-type: none"> - Faulty operation. - Component failure. 	Reset the fault and restart. Should the fault recur, contact the technical support.
7	Saturation trip	Various causes, e.g. faulty component.	Cannot be reset from the keypad. Switch off power. Do not connect power. Contact Honeywell. If this fault appears simultaneously with Fault 1, check motor cables and motor.
8	System fault	<ul style="list-style-type: none"> - Component failure. - Faulty operation. 	Reset the fault and restart. Should the fault recur, contact the technical support.
9	Undervoltage	DC-link voltage is under the voltage limits defined in: <ul style="list-style-type: none"> - Most probable cause: too low a supply voltage. - Frequency converter internal fault. 	In case of temporary supply voltage break, reset the fault and restart the frequency converter. Check the supply voltage. If it is adequate, an internal failure has occurred. Contact the technical support.
10	Input line supervision	Input line phase is missing.	Check supply voltage and cable.
11	Output Phase Supervision	Current measurement has detected that there is no current in one motor phase.	Check motor cables and motor.
13	Inverter under temp.	Heatsink temperature is under $-10\text{ }^{\circ}\text{C}$.	Check that the inverter is operated under specified conditions.
14	Inverter over temp.	Heatsink temperature is over $90\text{ }^{\circ}\text{C}$. Overtemperature warning is issued when the heatsink temperature exceeds $85\text{ }^{\circ}\text{C}$.	Check the correct amount and flow of cooling air. Check the heatsink for dust. Check the ambient temperature. Make sure that the switching frequency is not too high in relation to ambient temperature and motor load.
15	Motor stalled	Motor stall protection has tripped.	Check motor. Check that pump or fan is not blocked.
16	Motor over temp.	Motor overheating has been detected by frequency converter motor temperature model. Motor is overloaded.	Decrease the motor load. If no motor overload exists, check the temperature model parameters.

Fault Code	Fault	Possible Cause	Correcting measures
17	Motor under load	Motor underload protection has tripped.	FAN: check that belt is not broken. PUMP: check that pump is not dry.
22	EEPROM checksum fault	Parameter save fault: - Faulty operation. - Component failure.	Contact the technical support.
24	Counter fault	Values displayed on counters are incorrect.	Contact the technical support.
25	Microprocessor watchdog fault	- Faulty operation. - Component failure.	Reset the fault and restart. Should the fault recur, contact the technical support.
29	Thermistor fault	The thermistor input has detected increase of the motor temperature.	Check motor cooling and loading. Check thermistor connection. (If thermistor input is not in use, it has to be short circuited.)
32	Fan cooling	Cooling fan of the inverter does not start, when ON command is given.	Contact the technical support.
34	Internal bus communication	Ambient interference of defective hardware.	Should the fault recur, contact the technical support.
35	Application fault	Selected application does not function.	Contact the technical support.
39	Device removed	Option board removed. Drive removed.	Reset.
40	Device unknown	Unknown option board or drive.	Contact the technical support.
41	IGBT temperature	IGBT Inverter Bridge overtemperature protection has detected to high a motor current.	Check loading. Check motor size.
44	Device change	Option board changed. Option board has default settings.	Reset.
45	Device added	Option board added.	Reset.
50	Analogue input I_{in} < 4 mA (selected signal range 4 to 20 mA)	Current at the analogue input is < 4 mA. - Control cable is broken or loose. - Signal source has failed.	Check the current loop circuitry.
51	External fault	Digital input fault. Digital input has been programmed as external fault input and this input is active.	Check the programming and the device indicated by the external fault information. Check also the cabling of this device.
52	Keypad communication fault	The connection between the control keypad and the frequency converter is broken.	Check keypad connection and possible keypad cable.
53	Fieldbus fault	The data connection between the fieldbus Master and the fieldbus board is broken.	Check installation. If installation is correct, contact the technical support.
54	Slot fault	Defective option board or slot.	Check board and slot. Contact the technical support.
55	Actual value supervision	Actual value has exceeded or fallen below the actual value supervision limit.	Check the process.

Find out more

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