



## ACS580 Wiring and Parameters for Nexus Controls (Non-bypass)

October 19, 2020

Both the Nexus 4000 (NXF4000 and PPC4000) and Nexus 6000 (NX6100 and PPC6000) series controls can connect to an ABB ACS580 VFD for closed loop control. For the 4000 series requires the NXCESVFD card to be added, while the 6000 series requires the NXDBVSD card to be added.

### PARAMETERS

There are multiple ways to enter the parameters into the drive:

1. Using the attached keypad
2. Drivewire\* app (Android and iOS) via Bluetooth
3. Drive Composer Entry\* software (Windows 7+) via Mini-B USB

\* – Software supplied by ABB, search [abb.com](http://abb.com) for additional details and to download.

Number	Name	Value
99 – Motor data		
99.03	Motor type	*set during start-up*
99.04	Motor control mode	Scalar
99.06	Motor nominal current	*set during start-up*
99.07	Motor nominal voltage	*set during start-up*
99.08	Motor nominal frequency	*set during start-up*
99.09	Motor nominal speed	*set during start-up*
99.10	Motor nominal power	*set during start-up*
12 – Standard AI		
12.15	AI1 unit selection	mA
12.16	AI1 filter time	2.000 s
12.17	AI1 min	4.000 mA
12.18	AI1 max	20.000 mA
12.19	AI1 scaled at AI1 min	*min frequency* (ex: 30.000 Hz)
12.20	AI1 scaled at AI1 max	*max frequency* (ex: 60.000 Hz)
13 – Standard AO		
13.12	AO1 source	Output frequency
13.15	AO1 unit selection	mA
13.17	AO1 source min	*min frequency* (ex: 30.0)
13.18	AO1 source max	*max frequency* (ex: 60.0)
13.19	AO1 out at AO1 src min	4.000 mA
13.20	AO1 out at AO1 src max	20.000 mA
19 – Operation mode		
19.17	Local control disable	Yes
20 – Start/stop/direction		
20.01	Ext1 commands	In1 Start
20.03	Ext1 in1 source	DI1
20.21	Direction	Forward



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Number	Name	Value
23 – Speed reference ramp		
23.11	Ramp set selection	Acc/Dec time 1
23.12	Acceleration time 1	30.000 s
23.13	Deceleration time 1	30.000 s
30 – Limits		
30.13	Minimum frequency	*min frequency* (ex: 30.00 Hz)
30.14	Maximum frequency	*max frequency* (ex: 60.00 Hz)

### Parameter notes:

- Analog input filter time should be set appropriately to ensure a smooth input signal.
- When a minimum and maximum frequency are selected, the same value should be entered for all parameters that reference them in the chart above. The range does not have to be 0-60Hz if the scaling is consistent. It is often advised to set the minimum frequency high enough to ensure adequate motor cooling in the event of prolonged operation at low frequencies.
- Best practice is to always set the direction to forward. If the motor rotates in the wrong direction, swap any two leads from the drive output to the motor where they connect at the drive. Do not swap incoming drive power as this will not affect rotation.

## DISPLAY OPTIONS

There are three lines on the attached keypad that show output frequency, motor current and motor torque by default. For troubleshooting, it is best to replace the motor current and motor torque shown on the second and third lines with the 4-20mA values of the analog input and analog output used to communicate with the Nexus control. This can help to show any discrepancies with the feedback. The output frequency shown on the first line will be retained.

From the home view, press **Options**. Select **Edit Home view**. Highlight the second line and press **Edit**. Highlight **Parameter** and press **Edit**. Select **Other**, then press **Select**. Navigate to parameter 12.11 and press **Select**. Press **Done** to confirm.

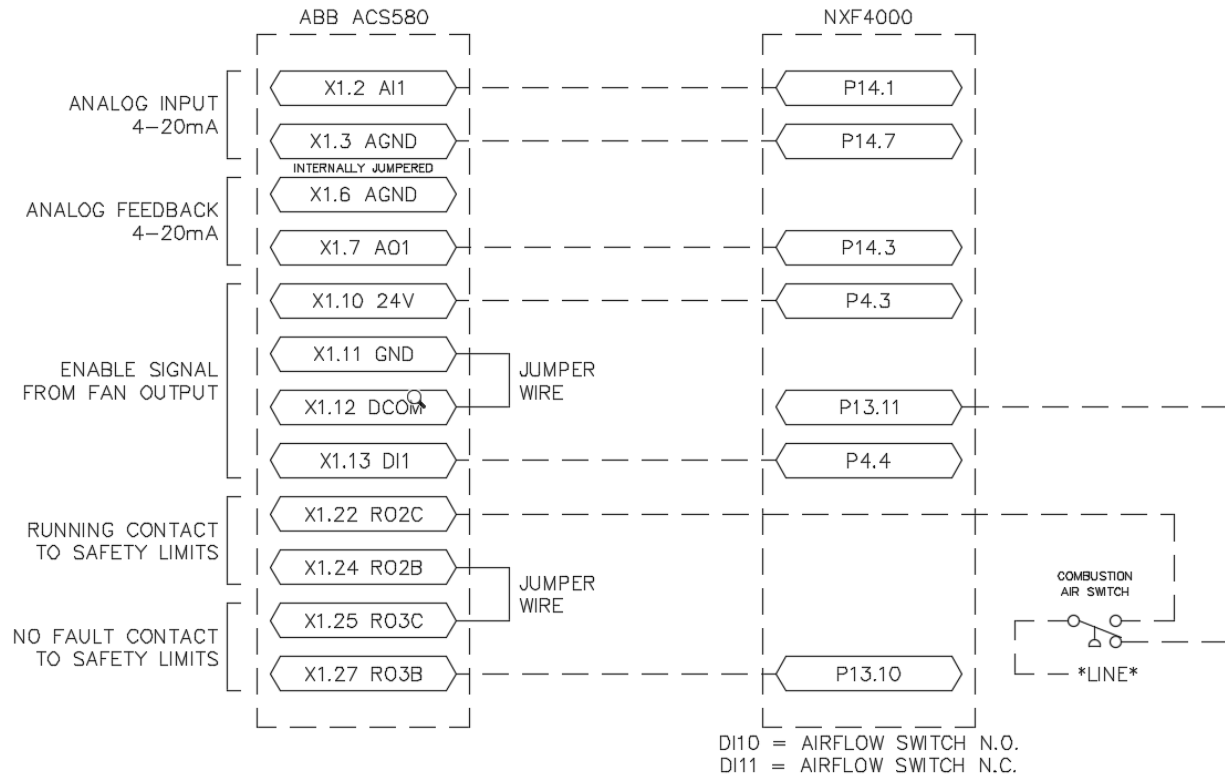
Repeat the same procedure for the third line, choosing parameter 13.11 instead.



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## WIRING NXF4000



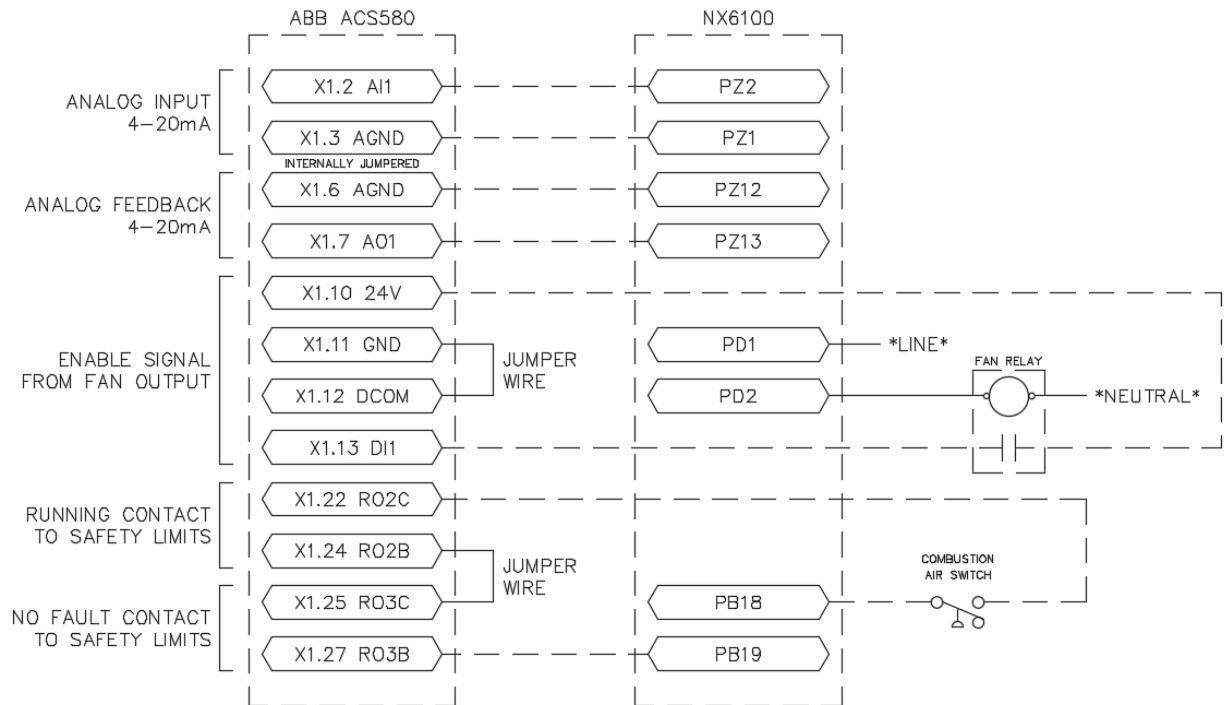


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### WIRING NX6100

Always use approved cable (Harting 09456000102 recommended) for all wiring between the NX6100 and the drive.

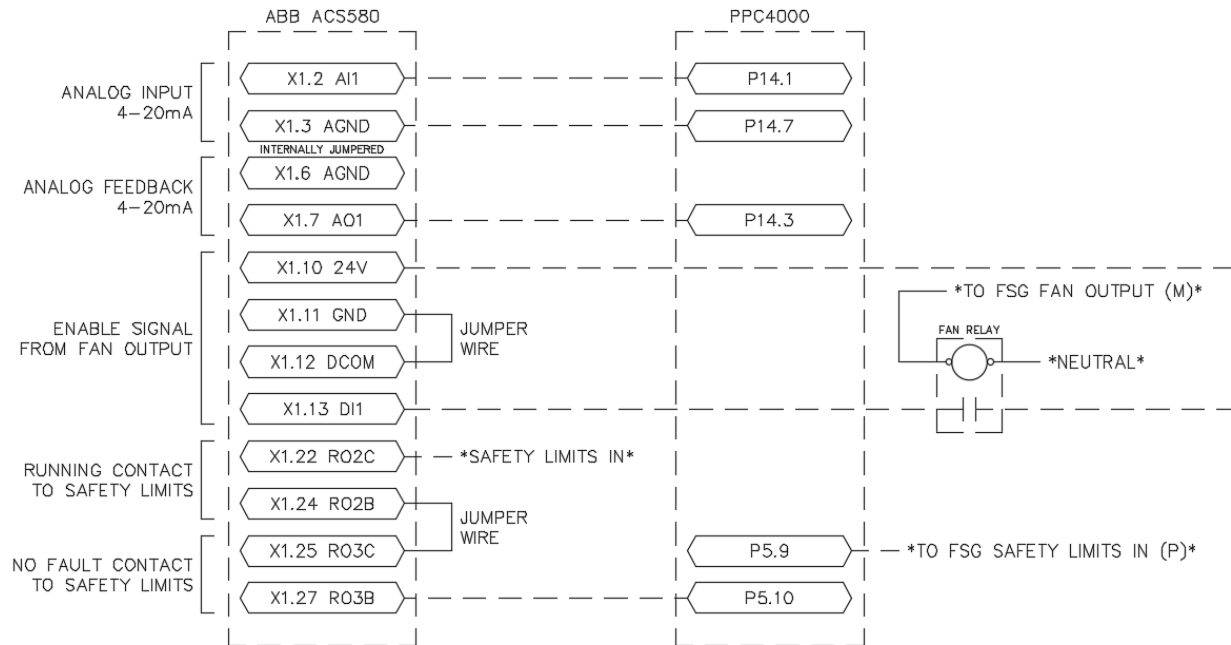




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## WIRING PPC4000





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### WIRING PPC6000

Always use approved cable (Harting 09456000102 recommended) for all wiring from the PPC6000 to the drive. Use regular wiring for any connections between the flame safeguard and the drive.

