

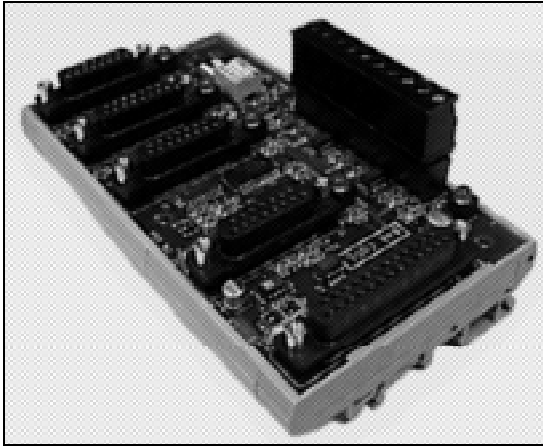
Compumotor

SDB4 Step & Direction Buffer Reference Guide

Compumotor Division
Parker Hannifin Corporation
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SDB4 Specifications



The SDB4 product converts one axis of step, direction, and shutdown signals into identical signals for four axes. Typical use is when one indexer axis needs to be connected to more than one drive. The SDB4 has one female 25 pin 'D' shell connector for signal inputs, four female 15 pin 'D' shell connectors for signal outputs, and has a 10 pin screw terminal connector for supplying power and using the multiplexing capability. The pin-outs of the 'D' shell connectors allow use of standard Compumotor indexer-to-drive cables (part number 71-010432-10) for connections between all 6000 series indexers, the model 500 indexer, the model 4000 indexer, and standard Compumotor drives such as the OEM, S, ZETA, and Z series drives.

Power Connector (10 pin screw terminal connector)

Pins 1 & 2 on this screw terminal connector are used to accept the user supplied +5V DC and the ground reference. See the Multiplexer & Power Connector section for full pin out list of this connector.

Note: the SDB4 is fully optically isolated so use caution when connecting the ground reference, otherwise the isolation may be lost. An isolated DC power supply is recommended.

Step/Direction/Shutdown/Auxiliary Signals

The step, direction, shutdown, and auxiliary (zero-phase or reset on some drives) inputs are broken out by the SDB4 to provide four axes of identical signals driven by individual line drivers. These inputs are optically isolated (if an isolated power supply is used) and require a **minimum of 5mA** to activate them. The corresponding outputs are driven by 26LS31 differential line drivers.

Note: the standard indexer-to-drive cable (71-010432-10) does not have conductors for the auxiliary signal.

Fault Signal

The fault output of most Compumotor drives is an open collector output, conducting when the drive is not faulted. The four fault signals are connected in series on the SDB4 such that if any of the four drives fault, the indexer will see a fault signal. This fault output back to the indexer is an open collector (pin 9) and open emitter (pin 21) output capable of up to 60mA. **A DIP switch is provided on the SDB4 to bypass the fault signal of a particular axis for use with less than four drives or with a drive lacking a fault signal.**

DIP Switch Functions - S1	Fault Bypassed	Fault Active
Axis #1 (Switch #1)	ON	OFF (default)
Axis #2 (Switch #2)	ON	OFF (default)
Axis #3 (Switch #3)	ON	OFF (default)
Axis #4 (Switch #4)	ON	OFF (default)

Multiplexing Signal

The SDB4 also provides an additional function. The 10-pin screw terminal connector provides four additional differential inputs that will disable (latch) each axis individually. When a particular axis is **enabled (default - no wiring required)**, the step, direction, shutdown, and auxiliary signals from the indexer will be available on that drive's output connector. Disabling (activating the input) an axis latches its step, direction, shutdown, and auxiliary outputs until the axis is re-enabled (input released).

Note: The fault signals are not multiplexed.

Indexer Connector - J1 (25 pin female D shell)

Pin	In/Out	Name	Description
1	In	Step (+)	Step pulse. Active high.
14	-	Step Return(-)	Step pulse return.
2	In	Direction (+)	Direction signal. High signal specifies clockwise motor rotation.
15	-	Direction Return(-)	Direction return.
16	In	Shutdown (+)	Shutdown. High signal indicates motor windings should be off.
17	-	Shutdown Return (-)	Shutdown return.
11	In	Aux. (+)	Auxiliary input.
23	-	Aux. Return (-)	Auxiliary return.
9	Out	Drive Fault	Drive fault. An open circuit to pin 21 indicates a drive fault on one of the four drive outputs. Short to pin 21 signals all is OK.
21	-	Drive Fault Return	Drive fault return.

Drive Connectors - J2, J3, J4, J5 (15 pin female D shell)

Pin	In/Out	Name	Description
1	Out	Step (+)	Step pulse. Active high.
9	-	Step Return(-)	Step pulse return.
2	Out	Direction (+)	Direction signal. High signal specifies clockwise motor rotation.
10	-	Direction Return(-)	Direction return.
11	Out	Shutdown (+)	Shutdown. High signal indicates motor windings should be off.
12	-	Shutdown Return (-)	Shutdown return.
6	Out	Aux. (+)	Auxiliary channel. (Pinout corresponds to S-Drive zero-phase input.)
15	-	Aux. (-)	Auxiliary Return
5	In	Drive Fault	Drive fault. An open circuit to pin 13 indicates a drive fault on that axis. Short to pin 13 signals all is OK.
13	-	Drive Fault Return	Drive fault return. (also ground reference)

Power & Multiplexer Connector - J6 (10 pin screw terminal connector)

Pin	In/Out	Name	Description
1	In	+5 VDC Power	Power supply input (regulated +5VDC w/ 500mA)
2	-	Gnd Reference	Ground reference for power supply input
3	In	Axis_1 (+)	Axis one enable. High signal versus pin 4 latches axis 1.
4	-	Axis_1 (-)	Axis one return.
5	In	Axis_2 (+)	Axis two enable. High signal versus pin 6 latches axis 2.
6	-	Axis_2 (-)	Axis two return.
7	In	Axis_3 (+)	Axis three enable. High signal versus pin 8 latches axis 3.
8	-	Axis_3 (-)	Axis three return.
9	In	Axis_4 (+)	Axis four enable. High signal versus pin 9 latches axis 4.
10	-	Axis_4 (-)	Axis four return.

Dimensional Information

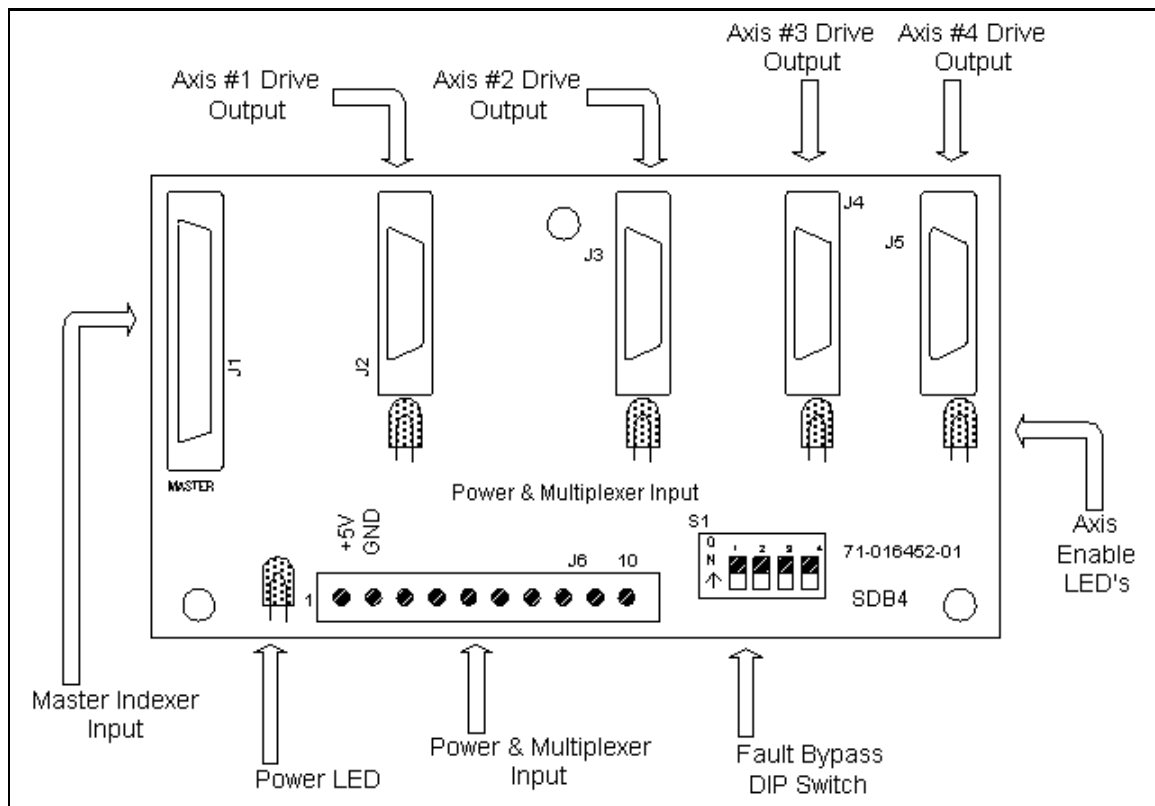
SDB4 Dimensions:

Length = 5.215 inches

Width = 2.84 inches

Height = Depends on interface cables (allow approximately 5" with Compumotor cables)

Mounting = Standard DIN rail mounting (for board only mounting, contact factory)



SDB4 Connector Locations