INDW-xx QUICK START (SINGLE AXIS OPERATIONS)

For a quick start with INDW, please follow the next steps:

- Connect the boards, by plugging the connector on the bottom side in the driver socket
- Connect the PC serial cable to the front connector using a null-modem cable
- Power on the PC and run a TTY serial terminal emulation software (e.g. “Hyperterminal” WINDOWS)
- Configure the communication parameters as: speed 9600 bps, 8 bit, no parity, handshake none
- Power up the driver
- Type “^C” (press and hold “CTRL” key then “C” and release it)
- Press SPACE to initialize the board , the system will responds the firmware version (e.g. “V2.55”)
- Now the system is ready to accept commands over the serial line. You can use the following examples

EXAMPLES

MOTOR MOVING at 1000 step per second (CW) “M 1000” (ENTER)
press ESC to abort movement

MOTOR MOVING at 1000 step per second (CCW) “M –1000” (ENTER)
press ESC to abort movement

SIMPLE PROGRAM EXAMPLE
Type: “**P 0” (enter)**

Type the following statements. The address on the left column will be automatically displayed .

Address	Statement	Note
0	A 0	Full step selection
2	V 4000	Slew speed 4000 pps
5	+1000	1000 steps forward movement
9	-2000	2000 steps backward movement
13	W 500	Wait for 0.5 seconds
16	J 5 6	Jump to address 5, 7 (6+1) times
20	A 1	Half step selection
22	V 8000	Slew speed 8000 pps
25	-1556	Go back for 1556 step
29	+55667	Go forward for 55667 steps
33	W0	Wait for stop
36	E0	Motor disable

Type “**P**” (Enter) and “**S**” (enter).
Type “**G**” (Enter)
Press ESC to abort

SAFETY INFORMATION

It is under customer's care to use this unit in compliance with the safety requirements. For further information, please call our technical department.

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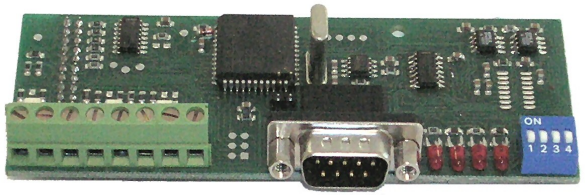
Astel electronics and industrial automation

MOTION

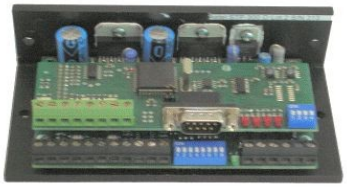
INDW-xx INDEXER PLUG-IN FOR STP STEPPER DRIVERS

INDW is a plug-in board for the STP driver family. With this board, it is possible to realize a complete and versatile control system for stepper motors.
The INDW is fully controllable through a serial interface using simple mnemonic commands or an application program stored by the user in the internal memory



MAIN SPECIFICATIONS

- Plug-in device for STP300, STP600 and STP900 stepper driver boards
- Stand alone (using an internal user program) or slave (PC controlled) operation modes.
- RS232 standard (INDW-01) or RS422/485 (INDW-02) version available with speed from 300 to 38,400bps
- Over 30 simple built-in mnemonic commands, with an easy to learn communication protocol.
- Up to 32 axes are shareable on same communication line for coordinate operations.
- Optocoupled inputs for limit switches, home position, start and emergency stop. Voltage range from 5 to 24Vcc
- NPN-PNP Optocoupled output. Voltage range from 5 to 24Vcc
- 24 bit resolution for absolute and relative positioning (up to 16,777,215 steps)
- Programmable acceleration and deceleration ramps
- Speed alterable during movements with self generated ramps
- Speed up to 50.000 steps per second. (up to 15.000 rpm with 1.8° motors at full step)
- Programmable polarity of limit and home switches
- Built-in homing routines.
- User program in 2KByte EEPROM
- Position triggered subroutines execution



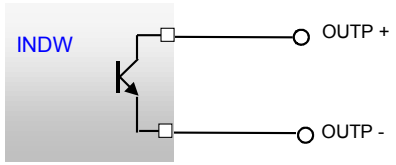
APPLICATIONS

Positioning systems
Automatic machinery
Servosystems
Robots
Axis control
Low cost systems

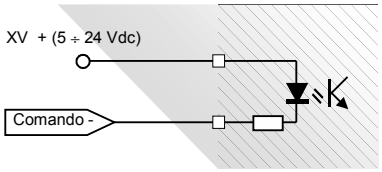
SOFTWARE COMMANDS

Command	Description	Data 1	Value range	Data 2	Value range
ESC	Movement abort	No	No	No	No
@	Soft stop	No	No	No	No
^C	Controller reset	No	No	No	No
A	Resolution (full---1/256)	Resolution	0-15	No	No
C	Program memory erase	Page	0-9	No	No
E	Auto power off	Type	0-1 4-5	No	No
F	Find home	Speed	40-51,000	Direction	0/1
G	Go	Address	0-226, 256-2048	Trace	0/1
H	Output control(OFF/ON)	Output	0-1	No	No
I	Initial speed	Speed	40-51,000	No	No
J	Jump or repeat	Address	0-225/ 2047	Repetition	0-255
K	Ramp slope	Slope	0-255	No	No
M	Constant velocity move	Speed	40-51,000	No	No
O	Set origin	Position	±8,388,607	No	No
P	Program mode	Address	0-226/ 256-2048	No	No
Q	Query program	Address	0-2047	No	No
R	Relative mode	Position	±8,388,607	No	No
S	Store parameters	No	No	No	No
T	Trip point	Position	±8,388,607	No	No
V	Slew speed	Speed	40-51,000	No	No
W	Wait	Time (ms)	0-65,535	No	No
X	Examine parameters	No	No	No	No
Z	Read position	Repeat	0/1	No	No
[	Memory read	Address	0-2047	No	No
]	Query HW status	No	No	No	No
+	CW movement	Position	0-16,777,215	No	No
-	CCW movement	Position	0-16,777,215	No	No
^	Query motion status	No	No	No	No
\	Memory write	Address	0-2047	Data	0-255

I/O CONFIGURATIONS



Configurazione uscita (NPN-PNP)



Configurazione ingressi (NPN)

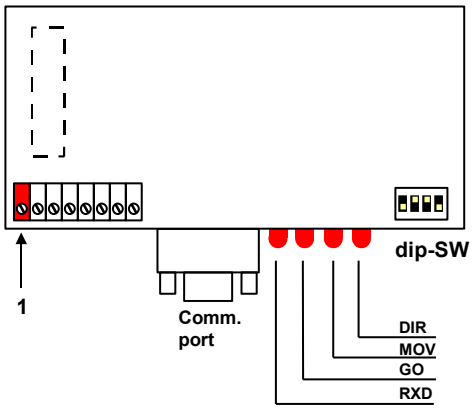
NOTE:

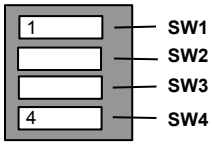
- Voltage range: 5-24 VDC

DIP-SWITCH:

SERIAL COMMUNICATION SPEED

"top view"





SPEED	SW1	SW2	SW3
300	OFF	ON	ON
1200	OFF	OFF	ON
2400	OFF	ON	OFF
4800	ON	OFF	OFF
9600	OFF	OFF	OFF
19.200	ON	ON	OFF
38.400	ON	OFF	ON

I/O SIGNALS

PIN No.	SIGNAL NAME	NOTE
1	XV	Optocoupled inputs Supply (5 – 24 V)
2	XHOME	Home sensor input (NPN optocoupled)
3	XLIMA	Limit switch A (NPN optocoupled)
4	XLIMB	Limit switch B (NPN optocoupled)
5	XGO	Cycle start input (NPN optocoupled)
6	XSTOP	Emergency stop input (NPN optocoupled)
7	OUTP +	Output (collector) (normally ON)
8	OUTP -	Output (emitter) (normally ON)

LEDS

LED	STATE	
RXD	BLINKING	Serial communication activity
GO	ON	Pre-programmed cycle execution
	OFF	System idle
MOV	ON	Moving
	OFF	System idle
DIR	ON	CW movement
	OFF	CCW movement

RS232/422/485 SERIAL INTERFACE : AT front connector

PIN No.	SEGNAL NAME	TYPE	NOTE
1	PARTY	Input	Used only for multi axes operation – leave unconnected
2	RXD	Input	RS232-C
3	TXD	Output	RS232-C
4	DTR	Output	Open collector output
5	GND	---	Ground
6	+5V dc	Output	+5V auxiliary out (max 100mA)
7	TXD (NEG)	Output	Used only for RS-422 (INDW-02)
8	RXD (NEG)	Input	Used only for RS-422 (INDW-02)
9	MOVING	Output	Moving (NPN open collector)