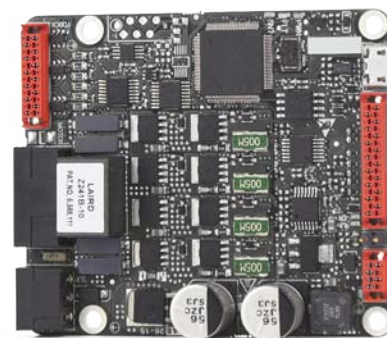


HYDRA

DIGITAL SERVO DRIVE

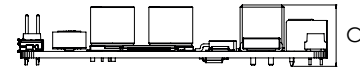
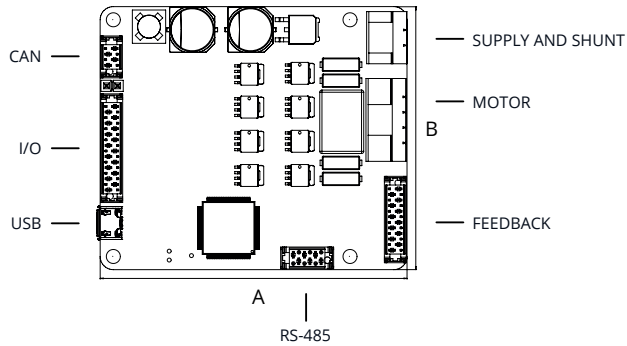
Hydra is a compact Servo Drive designed to achieve high precision positioning with stepper motors. The closed loop control results in a substantial increase of efficiency and a reduction of power consumption. The Hydra is easy to interface to external systems using RS-232, RS-485, USB, CANopen or digital signals.

- ✓ Closed loop stepper
- ✓ Smooth current control
- ✓ Extremely efficient
- ✓ True torque control
- ✓ Quiet operation and reduced resonance



Hydra Digital Servo Drive	Units	HYD-8/48
Supply Voltage	V _{DC}	12 - 48
Maximum Phase Peak Current (1 s)	A _{RMS}	16
Maximum Phase Continuous Current	A _{RMS}	8
Standby Power Consumption	W	1.5
Efficiency	%	>95
Supported Motor Types		2Ø Bipolar Stepper
Commutation		Open Loop, Closed Loop, Microstepping Control
Minimum Motor Inductance	µH	300
Power Stage PWM Frequency	kHz	20
Current Sensing		3Ø Low Side Sensing, ± 1% Accuracy, 10 bit
Commutation Sensors		Incremental Encoder
Supported Feedback		Incremental Encoder
Torque Loop Update Rate	kHz	20
Position and Velocity Update Rate	kHz	1
Motion Modes		Cyclic Sync, Interpolated, Profilers (Position, Velocity, Torque), Homing, Open Loop
Supported Command Sources		Network, USB, Serial, Analog Input, PWM, Encoder Follower/Electronic Gearing, Step and Direction, Standalone
Motion Controller		Yes, Standalone Operation with 64 Macros of 64 Commands
Digital Inputs		4 (TTL and PLC)
Analog Inputs		1 (±10 V), 1 (0-5 V)
Digital Outputs		2 (TTL and PLC)
User Configurable Protections		Bus Overvoltage and Undervoltage, Over and Under Temperature, Over Current, Overload (I ² T), Open Load Protection
Hardware Protections		Short-Circuit Protections, ESD and EMI Protections, Inverse Polarity Supply Protection, High Power Transient Voltage Suppressor for Short Braking, Open Load Protection
Software Protections		Mechanical Limits for Homing Modes, Hall Sequence/Combination Error
USB		Yes
Serial		RS-485
CANopen		Yes (DS-301, DS-303, DS-305, DS-306, DS-402)
EtherCAT		-
Ambient Air Temperature (operating)	°C	-25 to 85 (over 50 with current derating)
Ambient Air Temperature (storage)	°C	-40 to 125
Maximum Humidity (non-condensing)	%	5 to 85
Dimensions	mm (in)	60 x 70 x 15 (2.36 x 2.76 x 0.59)
Weight	g (oz)	35 (1.23)

DRAWINGS



Dimension (mm)	HYD-X/X
A	70
B	60
C	15

PINOUT

FEEDBACK		CAN		SUPPLY AND SHUNT		MOTOR		I/O	
12	HALL_3	04	GND	03	SUPPLY	05	PE	16	+5V_EXT
11	HALL_2	03	CAN_H	02	SHUNT	04	PH_D	15	LS_GPI1
10	HALL_1	02	CAN_L	01	GND	03	PH_C	14	LS_GPI2
09	GND	01	GND			02	PC_B	13	GND
08	ENC_Z- / REF-					01	PH_A	12	AN_IN2+
07	ENC_Z+							11	AN_IN2-
06	ENC_B-	RS-485						10	AN_IN1
05	ENC_B+	08	TX-					09	GND
04	ENC_A-	07	TX+					08	HS_GPI1- / PULSE- / PWM-
03	ENC_A+	06	RET_TX					07	HS_GPI1+ / PULSE+ / PWM+
02	GND	05	GND					06	GND
01	+5V_OUT	04	RX-					05	GPO1
		03	RX+					04	GPO2
		02	GND					03	GND
		01	RET_TX					02	HS_GPI2- / DIR-
								01	HS_GPI2+ / DIR+

PART NUMBERING INFORMATION

HYD X / XX - Y

Power model: _____
 8/48 = 8A cont//16 A peak @ 12-48 VDC

Interfaces: _____
 S = USB/RS-485
 C = USB/RS-485/CANopen

Option	Part Number
IO Starter Kit	A-IOKIT
Feedback Cable	C-HYD-FEED
IO Cable	C-HYD-IO
RS-485 Cable	C-HYD-RS485
CAN Cable	C-HYD-CAN