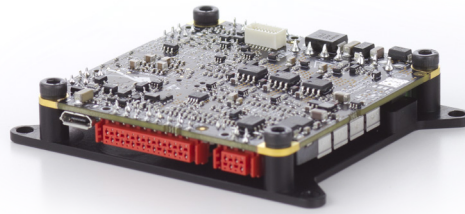


# NIX

## DIGITAL SERVO DRIVE

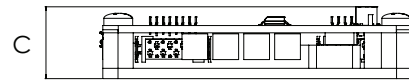
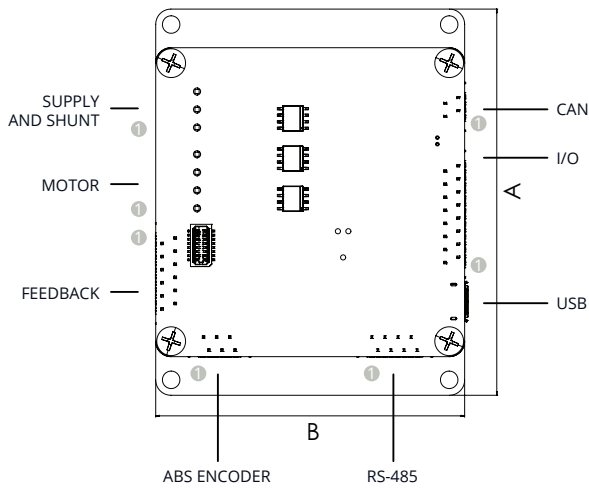


Ultra-compact solution providing top performance, advanced networking and built in safety, as well as a fully featured motion controller. The NIX can control multiple motor types and supports almost any feedback sensor including absolute serial encoders.

- ✓ High power density
- ✓ Ultra low profile
- ✓ High voltage variant
- ✓ Absolute feedback
- ✓ CANopen and EtherCAT
- ✓ Ready to be integrated

Nix Digital Servo Drive	Units	NIX-10/48	NIX-5/170
Supply Voltage	$V_{DC}$	10 - 48	10 - 170
Maximum Phase Peak Current (2 s)	$A_{RMS}$	20	10
Maximum Phase Continuous Current	$A_{RMS}$	10	5
Standby Power Consumption	W	1	
Efficiency	%	>95	
Supported Motor Types		Brushless, Linear Brushless, Brush DC, Voice Coil	
Commutation		Sinusoidal and Trapezoidal	
Minimum Motor Inductance	$\mu H$	300	
Power Stage PWM Frequency	kHz	40, 20 (Configurable)	
Current Sensing		3 $\sigma$ , $\pm$ 1% Accuracy, 10 bit	
Commutation Sensors		Digital Halls, Analog Halls, Incremental Encoder, PWM, Analog	
Supported Feedback		DC Tachometer, Digital Halls, Analog Halls, Quadrature Incremental Encoder, PWM, Analog, Sin-Cos, SSI Absolute Encoder	
Torque Loop Update Rate	kHz	10	
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 ( $\pm$ 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 <sup>2</sup> T)	
Hardware Protections		Short-Circuit Protections, ESD and EMI Protections, Inverse Polarity Supply Protection, High Power Transient Voltage Suppressor for Short Braking, Torque Off	
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		Yes (CoE)	
Ambient Air Temperature (operating)	$^{\circ}C$	-25 to 85 (over 50 with current derating)	
Ambient Air Temperature (storage)	$^{\circ}C$	-40 to 125	
Maximum Humidity (non-condensing)	%	5 to 85	
Dimensions	mm (in)	75 x 60 x 14 (2.95 x 2.36 x 0.55)	
Weight	g (oz)	86 (3.38)	

**DRAWINGS**



Dimension (mm)	NIX-XX/XXX
A	75
B	60
C	14

**PINOUT**

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

**PART NUMBERING INFORMATION**

**NIX XX / XXX - Y - Z**

**Power model:**

10/48 = 10A cont//20 A peak @ 10-48 VDC  
 5/170 = 5A cont//10 A peak @ 10-170 VDC

**Interfaces:**

S = USB/RS-485  
 C = USB/RS-485/CANopen  
 E = USB/RS-485/EtherCAT

**Connectors:**

S = Connectors  
 Q = Quick Connectors

**Option**

**Part Number**

IO Starter Kit	A-IOKIT
Feedback Cable	C-MM-FEED
IO Cable	C-MM-IO
RS-485 Cable	C-MM-RS485
CAN Cable	C-MM-CAN

For the most up to date information visit the support center documentation at [ingeniamc.com/support](http://ingeniamc.com/support)

