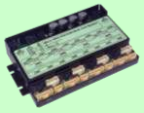
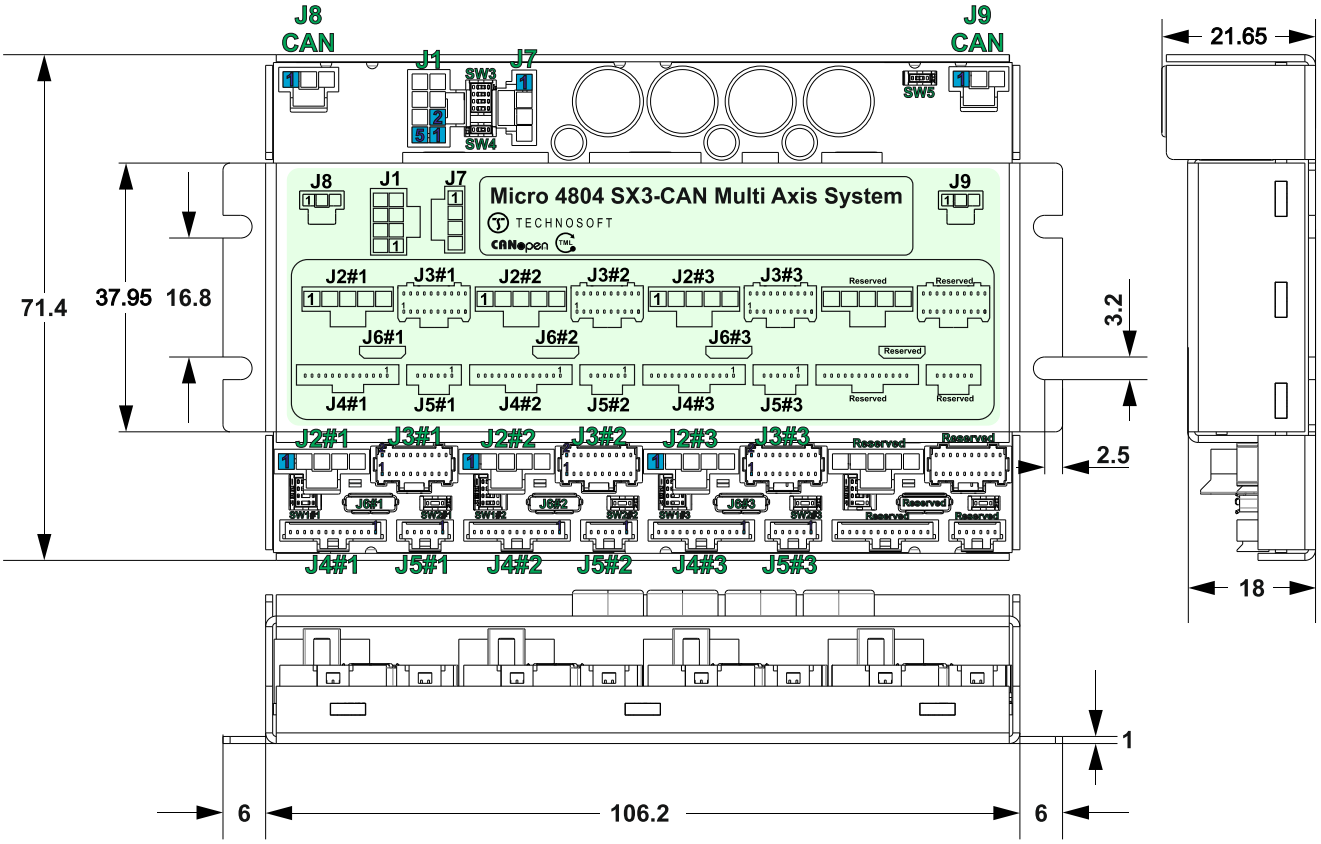


Micro 4804 SX3-CAN Multi Axis System
DATASHEET
P/N: P020.102.E403



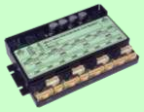
All dimensions are in mm. Drawing not to scale.

Motor – sensor configurations

Sensor \ Motor	PMSM	BLDC	DC BRUSH	STEP (2-ph)	STEP (3-ph)
Incr. Encoder	✓		✓	✓	
Incr. Encoder + Dig. Hall	✓	✓			
Linear Halls	✓				
Digital Hall control only	✓				
BISS / SSI / EnDAT / TAMAGAWA / Nikon / Sanyo Denki / Panasonic	✓	✓	✓	✓	
Tacho			✓		
Open-loop (no sensor)				✓	✓

Features

- Compact 3-axis CAN motion system that integrates a motion controller and drive into a single unit, powered by MotionChip™ technology.
- Universal solution for control of rotary and linear brushless, brushed and 2 or 3-phase step motors
- Advanced motion control features, including CSP, CSV, CST, PVT, S-curve, electronic gearing, camming, and more.
- Motor supply: 48V nominal
- Motor output current per axis:
  - Nominal: 5.7A_{RMS} / 8A amplitude for PMSM motors
    7A for DC / BLDC / Step motors
  - Peak: 11.3A_{RMS} / 16A amplitude
- Logic supply: 24V nominal, 48V max
- Feedback Devices per axis:
  - 1 x Hall sensor interface (digital or linear)
  - Feedback#1 and Feedback#2 can be:
    - Incremental encoder A / B (index Z only for Feedback #1): differential or single-ended;
    - Absolute encoder: differential or single-ended. Supported protocols: SSI, BiSS, EnDAT, Tamagawa, Panasonic, Nikon, Sanyo Denki.
- Integrated termination resistors for each axis's feedback connectors, selectable via sliding switches
- 1 x analogue input per axis, 12-bit, software selectable: 0-5V or ±10V; Reference, Feedback or General purpose
- 3 x digital inputs per axis: 2 for limit switches + one Enable, NPN, pull-up on-board to +5V. Pull to GND to activate.
- 3 x configurable I/Os per axis, each software selectable as:
  - Digital input, NPN, with pull-up on-board to +5V. Pull to GND to activate;
  - Digital output, NPN (open-collector), with pull-up on-board to +5V. Sink current: 1 x 1.5A to drive inductive loads (such as mechanical brake), 2 x 0.1A.
- Communication interfaces: RS232; USB; TMLCAN and CANopen (CiA 301 v4.2, CiA 305 v.2.2.13 and CiA 402 v3.0) protocols
- 24Kwords E^2ROM per axis to store setup data, TML motion programs, cam tables and other user data
- 16Kwords SRAM memory per axis for data acquisition
- Operating ambient temperature: 0-40°C (over 40°C with de-rating)
- Programmable protections: any short-circuit between motor phases, GND and/or supply, over/under-voltage, over-current, I^2t drive & motor, control error
- >98% voltage efficiency, >98% power efficiency



Micro 4804 SX3-CAN Multi Axis System
DATASHEET
P/N: P020.102.E403

Mating Connectors

Producer	Part No.	Connector	Description	
Molex	1053071203	J8, J9	1x3 Nano-Fit, 2.5mm Pitch Nano-Fit Wire-to-Board Housing, 3 circuits	
Molex	1053071204	J7	1x4 Nano-Fit, 2.5mm Pitch Nano-Fit Wire-to-Board Housing,4 circuits	
Molex	1053071205	J2#x[1]	1x5 Nano-Fit, 2.5mm Pitch Nano-Fit Wire-to-Board Housing, 5 circuits	
Molex	5011892010	J3#x[1]	2x10 Pico-Clasp, 1mm Pitch Pico-Clasp Wire-to-Board Housing, 20 Circuits	
Molex	5013301300	J4#x[1]	1x13 Pico-Clasp, 1mm Pitch Pico-Clasp Wire-to-Board Housing, 13 Circuits	
Molex	1053081208	J1	Nano-Fit Receptacle Housing, TPA Capable, 2.5mm Pitch, Dual Row, 8 Circuits, Black, Glow-Wire Capable	
Tensility International Corp	1002333	J6#x[1]	USB cable, Cable USB A Male - Micro B Male, 1m, shielded, black, 9.6mm plastic width	
Molex	0797582140	J1, J7, J8, J9, J2#x[1]	Pre-Crimped wires for Nano-Fit	Cable Assembly, Nano-Fit Crimp Terminal Socket to Nano-Fit Crimp Terminal Socket, 300mm
Molex	0797581019	J3#x[1], J4#x[1]	Pre-Crimped wires for Pico-Clasp	Cable Assembly, Pico-Clasp Crimp Terminal Socket to Pico-Clasp Crimp Terminal Socket, 300mm
Molex	1053001400	J1, J7, J8, J9, J2#x[1]	Pins for Nano-Fit	Nano-Fit Crimp Terminal, Female, 0.76µm Gold (Au) Plating, Lubricated, 24-26 AWG
Molex	5011937000	J3#x[1], J4#x[1]	Pins for Pico-Clasp	1.00mm Pitch, Pico-Clasp Female Crimp Terminal, Gold Plating 0.1µm, 28-32 AWG, Reel
Molex	638276000	J1, J7, J8, J9, J2#x[1]	Crimp tool Nano Fit	Crimp Tool, Ratchet, Molex Nano-Fit 105300 Series 26-24AWG Socket Contacts, 207129 Series
Molex	638191500	J3#x[1], J4#x[1]	Crimp tool Pico-Clasp	Crimp Tool, Ratchet, Molex Pico-Clasp 501193 & 501334 Series 32-28AWG Contacts

J1

Pin	Name	Type	Description
1,2,3	+Vmot	I	Positive terminal of the motor supply: 7 to 48 V_{DC}. Internally connected to all 3 drives $+V_{mot}$ pins.
4	PE	-	Earth connection.
5,6,7	GND	-	Ground return. Internally connected to other GND pins.
8	PE	-	Earth connection

J2#x[1]

Pin	Name	Type	Description
1	A/A+	O	Phase A for 3-ph motors, A+ for 2-ph steppers, Motor+ for DC brush motors
2	B/A-	O	Phase B for 3-ph motors, A- for 2-ph steppers, Motor- for DC brush motors
3	C/B+	O	Phase C for 3-ph motors, B+ for 2-ph steppers
4	Cr/B-	O	Chopping resistor / Phase B- for 2-ph steppers
5	PE	-	Earth connection for motor cable shielding

J4#x[1]

Pin	Name	Type	Description
1	232TX	O	RS-232 Data Transmission.
2	232RX	I	RS-232 Data Reception.
3	GND	-	Ground return.
4	+Vlog	I	Positive terminal of the logic supply input: 6 to 48 V_{DC}. Internally connected to other $+V_{log}$ pins.
5	IN2/LSP	I	5-48V digital NPN input. Positive limit switch input.
6	IN3/LSN	I	5-48V digital NPN input. Negative limit switch input.
7	I/O0	I/O	5-48V 1.5A NPN (sink) general-purpose digital programmable input IN0 or output OUT0
8	I/O1	I/O	5-48V 0.1A NPN (sink) general-purpose digital programmable input IN1 or output OUT1
9	I/O4	I/O	5-48V 0.1A NPN (sink) general-purpose digital programmable input IN4 or output OUT4
10	IN5/Enable	I	5-48V digital NPN input. Drive Enable input.
11	GND	-	Ground return. Internally connected to other GND pins.
12	AnalogIn	I	Analog input (range software selectable 0-5V or ±10V)
13	+5V	O	Supply for all feedback sensors.

J3#x[1]

Pin	Name	Type	Description
1	GND	-	Ground return. Internally connected to other GND pins.
2	Hall1	I	Digital Hall, or Linear Hall sensor 1.
3	+5V	O	5V supply for all feedback sensors.
4	Hall2	I	Digital Hall, or Linear Hall sensor 2.
5	+5V	O	5V supply for all feedback sensors.
6	Hall3	I	Digital Hall, or Linear Hall sensor 3.
7	EncA1+/EncA1 Dt1+/Dt1	I	Encoder 1 A+ / Data+ diff. input or single-ended input. Set SW1 pin 1 for differential.
8	GND	-	Ground return.
9	EncA1-/Dt1-	I	Encoder 1 A-/Data- diff. input. Set SW1 pin 1 for differential.
10	+5V	O	5V supply for all feedback sensors.
11	EncB1+/EncB1 Clk1+/Clk1	I	Encoder 1 B+ / Clock+ diff. input or single-ended input. Set SW1 pin 2 for differential.
12	EncA2+/EncA2 Dt2+/Dt2	I	Incr. encoder 2 A / Data+ diff. input or single-ended input. Set SW1 pin 4 for differential.
13	EncB1-/ Clk1-	I	Encoder 1 B- / Clock- diff. input. Set SW1 pin 2 for differential.
14	EncA2-/Dt2-	I	Incr. encoder 2 A- / Data - diff. input. Set SW1 pin 4 for differential.
15	Z / Z1+	I	Incr. encoder 1 Z / Z+ diff. input or single-ended input. Set SW1 pin 3 for differential.
16	EncB2+/EncB2 Clk2+/Clk2	I/O	Encoder 2 B+ / Clock+ diff. input or single-ended input. Set SW2 pin1 for differential.
17	Z1-	I	Incr. encoder 1 Z- diff. input. Set SW1 pin 3 for differential.
18	EncB2-/ Clk2-	I	Encoder 2 B- / Clock- diff. input. Set SW2 pin1 for differential.
19	GND	-	Ground return.
20	+Vlog	I	Positive terminal of the logic supply input: 6 to 48 V_{DC}. Internally connected to other $+V_{log}$ pins.

J8, J9

Pin	Name	Type	Description
1	GND	-	Ground return.
2	Can Lo	I/O	CAN-Bus negative line (dominant low)
3	Can Hi	I/O	CAN-Bus positive line (dominant high)

Port	Name	Type	Description
J6#x[1]	USB	I/O	Standard Micro USB for PC data transfer
J5#x[1]	Reserved	-	Reserved. Do not connect.

J7

Pin	Name	Type	Description
1	Rsvd	-	Reserved. Do not connect.
2	GND	-	Ground return. Internally connected to other GND pins.
3	+Vlog	I	Positive terminal of the logic supply input: 6 to 48 V_{DC}. Internally connected to all 3 drives $+V_{log}$ pins.
4	PE	-	Earth connection

SW1#x[1] – Feedback Resistors selection

Position	Description
1	ON = Connect an 120Ω resistor between EncA1-/Dt1- and EncA1+/EncA1/Dt1+/Dt1 feedback pins.
2	ON = Connect an 120Ω resistor between EncB1-/Clk1- and EncB1+/EncB1/Clk1+/Clk1 feedback pins.
3	ON = Connect an 120Ω resistor between Z1- and A / Z1+ feedback pins.
4	ON = Connect an 120Ω resistor between EncA2-/Dt2- and EncA2+/EncA2/Dt2+/Dt2 feedback pins.

SW2#x[1] – Feedback Resistors selection

1	ON = Connect an 120Ω resistor between EncB2-/Clk2- and EncB2+/EncB2/Clk2+/Clk2 feedback pins.

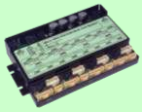
SW5 – CAN Resistors selection

1	ON = Connect an 120Ω resistor between CAN Hi and CAN Lo signals.

SW4 – Communication Protocol selection

1	**OFF** – CANopen mode **ON** – TMLCAN mode

[1] "x" can be drive 1, 2 or 3



Micro 4804 SX3-CAN Multi Axis System
DATASHEET
P/N: P020.102.E403

SW3 - AxisID selection						
SW3				Drive AxisID		
Pin 1	Pin 2	Pin 3	Pin 4	Drive #1	Drive #2	Drive #3
off	off	off	off	1	2	3
off	off	off	on	9	10	11
off	off	on	off	17	18	19
off	off	on	on	25	26	27
off	on	off	off	33	34	35
off	on	off	on	41	42	43
off	on	on	off	49	50	51
off	on	on	on	57	58	59
on	off	off	off	65	66	67
on	off	off	on	73	74	75
on	off	on	off	81	82	83
on	off	on	on	89	90	91
on	on	off	off	97	98	99
on	on	off	on	105	106	107
on	on	on	off	113	114	115
on	on	on	on	121	122	123

Electrical characteristics

All parameters measured under the following conditions (unless otherwise specified):

- V_{LOG} = 24 VDC; V_{MOT} = 48 VDC; F_{PWM} = 20 kHZ
- Ambient temperature = 25°C (typical values) / 0°C…40°C (min/max values)
- Supplies start-up / shutdown sequence: -any-
- Load current = nominal
- Data is provided for each axis of the system

Operating Conditions		Min.	Typ.	Max.	Units
Ambient temperature		0		40[1]	°C
Ambient humidity	Non-condensing	0		90	%Rh
Altitude / pressure[2]	Altitude (vs. sea level)	-0.1	0 ÷ 2.5	[2]	Km
	Ambient Pressure	0	0.75 ÷ 1	10.0	atm

Storage Conditions		Min	Typ	Max	Units
Ambient temperature		-40		100	°C
Ambient humidity	Non-condensing	0		100	%Rh
Ambient Pressure		0		10.0	atm
ESD capability (Human body model)	Not powered; applies to any accessible part			±5	kV
	Original packaging			±15	kV

Mechanical Mounting		Min	Typ	Max	Units
Airflow	natural convection, closed box				
Spacing required between adjacent drives		10			mm
Spacing required above drive	For counter-connectors & cable bending	30	80		

Environmental Characteristics		Min.	Typ.	Max.	Units
Size (Length x Width x Height)	Global size		118.2 x 71.4 x 21.65		mm
			~4.65 x 2.81 x 0.85		inch
Weight			141		g
Cleaning agents	Dry cleaning is recommended		Only Water- or Alcohol- based		
Protection degree	According to IEC60529		IP20		-
Power dissipation	Idle (I_{MOT} = 0A)		1	1.2	W
	Full power (I_{MOT} = nominal)		2.0	2.4	
Power efficiency	Full power (I_{MOT} = nominal)		98.7		%
Voltage efficiency	f_{PWM} = 20KHz		98.3		
	f_{PWM} = 100KHz		91.4		
Surface temperature of metallic baseplate			40		°C

Logic Supply Input (+V_{LOG})		Min	Typ.	Max.	Units
Supply voltage	Nominal values	6	24	48	V_{DC}
	Absolute maximum values, drive operating but outside guaranteed parameters	4.9		50	V_{DC}
	Absolute maximum values, continuous	-0.5		53	V_{DC}
Supply current	+V_{LOG} = 12V		90	150	mA
	+V_{LOG} = 24V		60	90	
	+V_{LOG} = 48V		45	60	
Utilization category	Acc. to 60947-4-1(I_{PEAK}<=1.05*I_{NOM})	DC-1			

Motor Supply Input (+V_{MOT})		Min	Typ.	Max.	Units
Supply voltage	Nominal values	7		48	V_{DC}
	Absolute maximum values, drive operating but outside guaranteed parameters	6		50	V_{DC}
	Absolute maximum values, continuous	-0.5		53	V_{DC}
Supply current	Idle		0.3		mA
	Operating	-16	±7	+16	A
Voltage measurement error			±0.15	±0.25	V
Utilization category	Acc. to 60947-4-1 (I_{PEAK}<=4.0*I_{NOM})	DC-3			

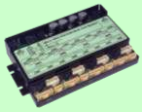
Motor Outputs (A/A+, B/A-, C/B+, CR/B-)				Min.	Typ.	Max.	Units
Nominal current	PMSM motors sinusoidal amplitude					±8	A
	PMSM motors sinusoidal RMS					5.7	A_{RMS}
	DC/BLDC/STEP motors continuous					7	A
Peak current	maximum 4 seconds			-16		+16	A
Short-circuit protection threshold					±25	±28	A
Short-circuit protection delay				2.6		3.5	µs
On-state voltage drop	Nominal output current; including typical mating connector contact resistance				50	70	mV
Off-state leakage current					0.3	1	mA
Current measurement	Accuracy (FS = Full Scale)				±1	±1.5	%FS
	Noise (current ≤ 2A)				±4	±6	mA
	Noise (current ≥ 2A)				±30	±50	
	Offset drift (compensated @ AxisOn)					±0.16	mA/ºC
Motor inductance (phase-to-phase)	Recommended value to avoid spurious short-circuit protection, triggered by ripple	Fast loop[3]	V_{MOT}				µH
		50µs	48V		133		
		100µs	48V		266		
		50µs	24V		66		
		100µs	24V		133		
Motor electrical time-constant (L/R)	Recommended value for ±5% current measurement error	F_{PWM} = 20 kHz			330		µs
		F_{PWM} = 40 kHz			170		
		F_{PWM} = 60 kHz			140		
		F_{PWM} = 80 kHz			80		
		F_{PWM} = 100 kHz			66		

Digital Inputs (IN0, IN1, IN2/LSP, IN3/LSN, IN4, IN5/ENA)			Min.	Typ.	Max.	Units
Mode compliance				NPN (sink)		
Default state	Input floating (wiring disconnected)			Logic HIGH		
Input voltage	Logic “LOW”	IN0, IN1, IN4, IN5/ENA		1.4	1.8	V
	Logic “HIGH”		3.1	2.5		
	Hysteresis		0.9	1.1	1.4	
	Logic “LOW”	IN2/LSP, IN3/LSN		1.4	1.6	
	Logic “HIGH”		4	3.5		
	Hysteresis			0.6		
	Floating voltage (not connected)			4.7		
	Absolute maximum, continuous	IN2/LSP, IN3/LSN, IN5/ENA	-2		+80	
		IN0, IN1, IN4	-0.5		V_{LOG}+0.5	
Input current	Logic “LOW”; Pulled to GND			6.5	8	mA
	Logic “HIGH”; Pulled to +24V			0.2	0.4	
Input frequency			0		500	kHz
Minimum pulse			1			µs
ESD protection - Human body model			±2			kV

Digital Outputs (OUT0, OUT1, OUT4)				Min.	Typ.	Max.	Units
Mode compliance				NPN (sink) 24V			
Load type				Resistive, Inductive			
Default state	Not supplied (+V_{LOG} floating)			High-Z (floating)			
	Immediately after power-up			Logic “HIGH”			
Output voltage	Logic “LOW”; output current = 1.5A for OUT0/ 0.05A for OUT1, OUT4					0.4	V
	Logic “HIGH”; output current = 0, no load			4	4.7	5.2	
	Logic “HIGH”, external load to +V_{LOG}				V_{LOG}		
	Absolute maximum, continuous (free-wheeling diodes to +V_{LOG} to GND)			-0.5		V_{LOG}+0.5	
	Absolute maximum, surge (duration ≤ 1s)[†]			-1		V_{LOG}+1	
Output current	Logic “LOW”, sink current, short duration, duty cycle <=1%	5s max	OUT1, OUT4			0.1	A
			OUT0			2	
		0.5s max	OUT1, OUT4			0.15	
			OUT0			2.5	
	Logic “LOW”, sink current, continuous; V_{OUT} ≤ 0.4V		OUT1, OUT4			0.05	
			OUT0			1.5	
	Logic “HIGH”, source current; external load to GND; V_{OUT} ≥ 2.0V					5	mA
	Logic “HIGH”, leakage current; external load to +V_{LOG}; V_{OUT} = V_{LOG} max = 40V	V_{LOG}=24V			0.18	0.2	mA
		V_{LOG}=48V			0.42	0.45	
Minimum pulse width				0.5			µs
ESD protection - Human body model				±25			kV

Supply Output (+5V)		Min.	Typ.	Max.	Units
Output voltage	Current sourced = 400mA[4]	5.05	5.2	5.25	V
Output current[4]	Output voltage ≥ 4.85V			1,200	mA
Short-circuit to GND protection		Yes / Drive resets at event			
Over-voltage protection		NOT protected			
ESD protection	Human body model	±1			KV

[1] Operating temperature at higher temperatures is possible with reduced current and power ratings
[2] Micro 4804 can be operated in vacuum (no altitude restriction), but at altitudes over 2,500m, current and power rating are reduced due to thermal dissipation efficiency.
[3] Fast loop period of 50µs is not possible with all feedback device types.
[4] Specified currents are intended per drive. Each drive has separate +5V outputs



Micro 4804 SX3-CAN Multi Axis System
DATASHEET
P/N: P020.102.E403

Hall Inputs (Hall1, Hall2, Hall3)			Min.	Typ.	Max.	Units
Mode compliance	TTL / CMOS / Open-collector (NPN sink), or analog (linear) 0…5V					
Default state	Input floating (Wiring disconnected)		4.5	4.8	5.2	V
Input voltage	Digital	Logic "LOW"		1.5	1.7	V
		Logic "HIGH"	3	2.5		
		Hysteresis		0.5		
	Analog		0	0.5…4.5	4.95	
Input current	Logic "LOW"; Pull to GND			2.4		mA
	Logic "HIGH"; Internal 2.2KΩ pull-up to +5			0		
Minimum pulse width				66		µs
ESD protection - Human body model				±15		kV

Encoder Inputs (A1+, A1-, B1+, B1-, Z1+, Z1-, A2+, A2-, B2+, B2-)[1]		Min.	Typ.	Max	Units
Single-ended mode compliance	Leave A1-, B1-, Z1-, A2-, B2- floating	TTL / CMOS / Open-collector (NPN sink)			
Single-ended threshold	A1+, B1+, Z1+, A2+, B2+	1.3	1.4	1.5	V
Single-ended input current	Input pulled to GND against on-board 2.2 KΩ pull-up to +5V		2.4	2.7	mA
Differential mode compliance	For full RS422 compliance, see[1]	TIA/EIA-422-A			
Input voltage	Hysteresis	±0.03	±0.05	±0.2	V
	Differential mode	-15		+15	
	Common-mode range (A+ to GND, etc.)	-7		+12	
Input impedance, differential	Common-mode (A1+ to GND, etc.)		2.2		kΩ
	Differential (A1+ to A1-, etc.)		4.4		
Input frequency	Differential mode	0		15	MHz
Minimum pulse width	Differential mode	33			ns
ESD protection	Human body model	±30			kV

RS-232		Min.	Typ.	Max.	Units
Compliance		TIA/EIA-232-C			
Bit rate	Software selectable	9600		115200	Baud
Output voltage		±5	±5.7		V
Short-circuit	232TX to GND	Guaranteed			
Input voltage	Absolute maximum, continuous	-30		+30	V
ESD protection	Human body model	±15			kV

Absolute encoder interface: SSI, BISS-C, EnDAT, Tamagawa, Nikon, Sanyo Denki		Min	Typ.	Max	Units
Single-ended mode	Not recommended, reduced robustness & speed				
Differential mode compliance	For full RS422 compliance, see[1]	TIA/EIA-422-A			
Output voltage	Differential; 50Ω differential load	1.5	3.3		V
	Common-mode, referenced to GND	1	1.7	3	
CLOCK frequency	Nikon, Sanyo Denki	2.5, 4			MHz
	Panasonic, Tamagawa	2.5			
	All others	1, 2, 3, 4			
Output Short- circuit protection	Common-mode voltage ±15V	Yes, protected			
DATA format	Software selectable	Binary / Gray			
		Single-turn / Multi-turn			
		Counting direction			
		CRC type			
DATA resolution	Including CRC, flags, …			64	Bits
	If total resolution >31 bits, some bits must be ignored by software setting to achieve a max. 31 bits resolution				

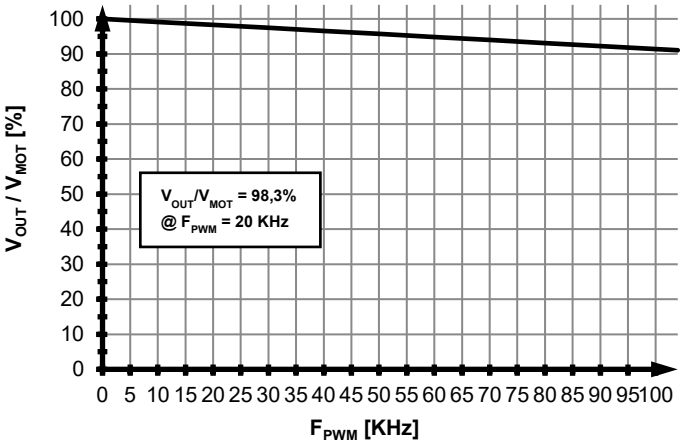
Analog Input (REF/ FDBK)		Min	Typ.	Max	Units
Input voltage	Operational range	0…5, -10…+10			V
	Absolute maximum values, continuous	-22		+26	
	Absolute maximum, surge (duration ≤ 1s)			±38	
Input impedance	To 1.44V		20		kΩ
Bandwidth (-3dB)	Software selectable	0		5.3	kHz
Resolution		12			bits
Integral linearity				±1	bits
Offset error	Range -10V … +10V			±3	±10	bits
	Range 0 …+5V			±10	±30	
Gain error	Range -10V … +10V			±0.3	±0.5	%
	Range 0 …+5V			±0.5	±0.8	
ESD protection	Human body model	±1.5			kV

CAN-Bus			Min.	Typ.	Max.	Units
Compliance			CAN 2.0B, ISO 11898-2			
Software protocols compatibility			CiA301, CiA305, CiA402, TechnoCAN, TMLcan			
Bit rate	Software selectable		125, 250, 500, 1000			KBaud
Node addressing	TMLcan	SW3 selectable	1÷123			-
	CANopen					-
Voltage	Common-mode, operating		-12		+12	V
	Common-mode, max. continuous		-58		+58	V
	Differential, max. continuous		-45		+45	V
Input impedance	Differential		40		90	KΩ
	Common-mode		20		45	KΩ
Termination resistor (120Ω)			Included – SW5			
ESD protection	Human body model		±10			kV

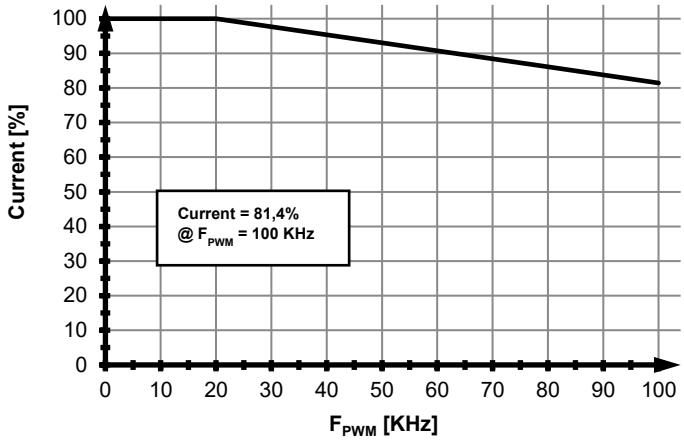
† Stresses beyond values listed under "absolute maximum ratings" may cause permanent damage to the device. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

[1] To achieve full RS-422 compatibility and enhance noise rejection, it is necessary to connect an 120Ω resistor across each signal pair (A1+/A1-, B1+/B1-, Z1+/Z1-, A2+/A2-, B2+/B2-). This can be done through SW1 and SW2.

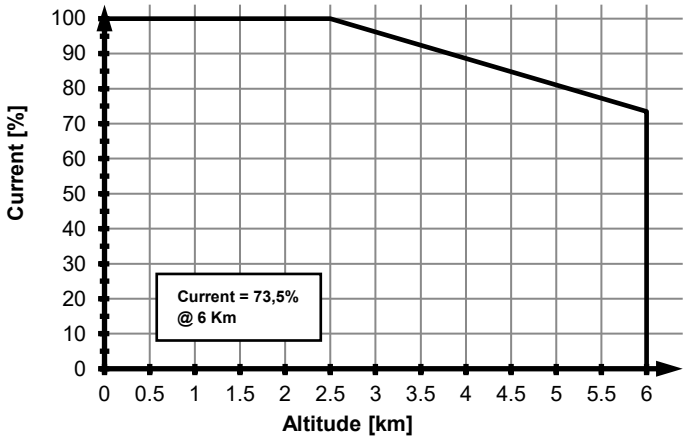
Micro 4804 SX



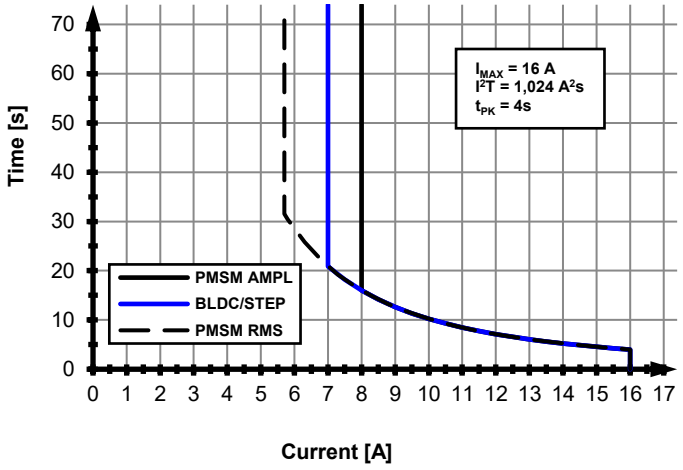
Micro 4804 SX



Micro 4804 SX



Micro 4804 SX



Micro 4804 SX