

Rear view; Pins facing upwards; All dimensions are in mm; Header pitch is 2.54 mm. Drawing not to scale.

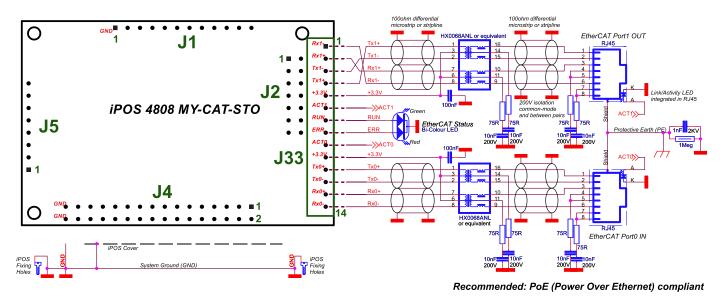
Motor – sensor configurations								
Motor Sensor	PMSM	BLDC	DC BRUSH	STEP (2-ph)	STEP (3- ph)			
Incr. Encoder	T		T	7				
Incr. Encoder + Hall	T	T						
Analog Sin/Cos encoder	T	T	T	3				
SSI	T	T	T	7				
BiSS-C	T	<b>T</b>	T	3				
Linear Halls	T							
Tacho			7					
Open-loop (no sensor)				7	7			

- Features
- Motion controller and drive in a single compact unit based on MotionChip <sup>TM</sup> technology
- Universal solution for control of rotary and linear brushless, brushed and 2 or 3-phase step motors
- Advanced motion control capabilities (PVT,S-curve, electronic cam)
- Motor supply: 11-50V; Logic SELV/ PELV supply: 9-36V; STO SELV/ PELV supply: 18-40V
- Output current: 8A cont. (BLDC mode); 20A<sub>PEAK</sub>, up to 100kHz PWM
- Feedback Devices (dual-loop support)
  - 1st feedback devices supported:
  - Incremental encoder interface (single ended or differential)
  - Analogue sin/cos encoder interface (differential 1V<sub>pp</sub>)
  - Digital Hall sensor interface (single-ended and open collector)
  - Linear Hall sensors interface

- pulse & direction interface (single ended) for external (master) digital reference
- 2<sup>nd</sup> feedback devices supported:
- Incremental encoder interface (differential)
- pulse & direction interface (differential) for external (master) digital reference
- BISS / SSI encoder interface
- STO: 2 safe torque-off inputs, safety integrity level (SIL3/Cat3/PLe) acc. to EN61800-5-1;-2/ EN61508-3;-4/ EN ISO 13849-1.
- 6 digital inputs, 12-36V, PNP/NPN programmable: 2 for limit switches, 4 general-purpose
- 5 digital outputs, 5-36V, 0.5A, NPN open-collector: Ready, Error, 3 general-purpose
- 2 analogue inputs: 12-bit, 0-5V: Reference, Feedback or general purpose
- RS-232 serial & dual 100Mbps EtherCAT® interfaces
- EtherCAT® with CAN application protocol over EtherCAT (CoE), File over EtherCAT (FoE) and Ethernet over EtherCAT (EoE)
- 127 h/w addresses selectable by h/w pins configuration
- 16k x 16 SRAM memory for data acquisition
- 16k x16 E<sup>2</sup>ROM to store setup data, TML motion programs, cam tables and other user data
- Operating ambient temperature: 0-40°C (over 40°C with derating)
- NTC/PTC analogue Motor Temperature sensor input

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(2) LE	CHNOSOFT	iPOS4808 MY-CAT-STO	P027.314.E121.DSH.10D		
		Title of document	N° document		
EP	June 2, 2020		June 2, 2020	GC	
Name	Name First edition Document template: P099.TQT.564.0001 L		Last edition	Visa :	

## iPOS4808 MY-CAT-STO DATASHEET P/N: P027.314.E121



	Mating Connectors								
Ref	Producer	Part No.	Description						
J1	Samtec	SSQ-112-01-G-S	1x12 contacts, socket 2.54mm-pitch accepting 0.635mm square pin						
	FCI	87606-307LF	2x7 contacts, socket, 2.54mm-pitch						
J2	TE Connectivity	534206-7	accepting 0.635mm square pin						
J33	Samtec	SSQ-114-01-G-S	1x14 contacts, socket 2.54mm-pitch accepting 0.635mm square pin						
J4	Samtec	SSQ-116-01-G-D	2x12 contacts, socket 2.54mm-pitch accepting 0.635mm square pin						
J5	Samtec	SSQ-108-01-G-S	1x8 contacts, High-current socket 2.54mm-pitch accepting 0.635mm square pin						

	Pin	Name	Type	Description
	1	GND	-	Return ground for all signals. Internally connected to J4 pins 31 and 32, to metallic cover, and to the 3 fixing screws
	2	reserved	-	Reserved
	3	Axis ID Bit6	ı	
	4	Axis ID Bit5	ı	
	5	Axis ID Bit4	ı	8 bit H/W Axis ID register.
5	6	Axis ID Bit3	ı	Connect pin to GND to set bit to 1.
	7 Axis ID Bit2 8 Axis ID Bit1 9 Axis ID Bit0 10 reserved		ı	Up to 127 H/W axis ID combinations.
-			ı	
			ı	
			-	Reserved for interface extensions†
	11	reserved	-	Reserved for interface extensions†
	12	reserved	-	Reserved for interface extensions <sup>†</sup>
	Pin	Name	Type	Description
	1,2	A/A+	0	Phase A for 3-ph motors, A+ for 2-ph steppers, Motor+ for DC brush motors
35	3,4	B/A-	0	Phase B for 3-ph motors, A- for 2-ph steppers, Motor- for DC brush motors
	5,6	C/B+	0	Phase C for 3-ph motors, B+ for 2-ph steppers
	7,8	Cr/B-	0	Chopping resistor / Phase B- for 2-ph steppers

	Pin	Name	Туре	Description
	1	RX1-	I/O	Receive/Transmit negative, OUT port. Connect to magnetics PHY RX1.
	2	RX1+	I/O	Receive/Transmit positive, OUT port. Connect to magnetics PHY RX1.
	3	TX1-	I/O	Transmit/Receive negative, OUT port. Connect to magnetics PHY TX1.
	4	TX1+	I/O	Transmit/Receive positive, OUT port. Connect to magnetics PHY TX1.
	5	3.3V	0	Return for center tap of magnetics PHY TX1 and RX1. Internally connected to J33 pin 10.
	6	ACT1	0	Anode of Link/Activity LED for port OUT.
က	7	RUN	0	Anode of Run LED (EtherCAT status machine).
J33	8	ERR	0	Anode of Error LED (EtherCAT status machine).
	9	ACT0	0	Anode of Link/Activity LED for port IN.
	10	3.3V	0	Return for center tap of magnetics PHY TX0 and RX0. Internally connected to J33 pin 5.
	11	TX0+	I/O	Transmit/Receive positive, IN port. Connect to magnetics PHY TX0.
	<b>12</b> TX0-		I/O	Transmit/Receive negative, IN port. Connect to magnetics PHY TX0.
	13	RX0+	I/O	Receive/Transmit positive, IN port. Connect to magnetics PHY RX0.
	14	RX0-	I/O	Receive/Transmit negative, IN port. Connect to magnetics PHY RX0.

	Pin	Name	Type	Description	n				
	1	STO1+	I	Safe Torque Off input 1, positive input (opto-isolated, 18÷40V)	Apply between both STO1+, STO2+ and				
	2	STO2+	ı	Safe Torque Off input 2, positive input(opto-isolated, 18÷40V)	STO1+, STO2+ and STO1-, STO2- 24V DC from SELV/ PELV				
	3	STO1-	ı	Safe Torque Off input 1, negative return (opto-isolated, 0V)	power supply for motor PWM output				
	4	STO2-	I	Safe Torque Off input 2, negative return (opto-isolated, 0V)	operation				
	5	LH1	- 1	Linear Hall 1 input					
	6	LH2							
	7	IN4	ı	12-36V general-purpose digital PN	NP/NPN input				
2	8	IN5	ı	12-36V general-purpose digital PN	NP/NPN input				
7	9	OUT0	0	5-36V 0.5A, general-purpose digital output, NPN open- collector/TTL pull-up					
	10	OUT3/ Ready	0	5-36V 0.5A, drive Ready output, a collector/TTL pull-up. Also drives to					
	11	OUT1	0	5-36V 0.5A, general-purpose digi collector/TTL pull-up	tal output, NPN open-				
	12	OUT2/ Error	0	5-36V 0.5A, drive Error output, ac collector/TTL pull-up. Also drives to					
	13	REF	I	Analogue input, 12-bit, 0-5V. Read general purpose analogue input	ds analog reference, or				
	14	FDBK / LH3	I	Analogue input, 12-bit, 0-5V. Reads an analogue feedback (tacho), or general purpose/ or Linear Hall 3					

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### **iPOS4808 MY-CAT-STO DATASHEET** P/N: P027.314.E121

Pin	Name	Type	Description
1	INO	-	12-36V general-purpose digital PNP/NPN
'	1140		input " " " I D D D D D D D D D D D D D D D D
2	IN1	I	12-36V general-purpose digital PNP/NPN input
3	IN2/LSP	ı	12-36V digital PNP/NPN input. Positive limit switch input
4	IN3/LSN	I	12-36V digital PNP/NPN input. Negative limit switch input
5	B2-/Dir-/CLK- /MA-	I/O	Incr. encoder2 B- diff. input, or Dir, or Clockfor SSI, or Master- for BiSS; has $120\Omega$ resistor between pins 5 and 7
6	B1-/Cos-	I	Incr. encoder1 B- diff. input, or analogue encoder Cos- diff. input
7	B2+/Dir+/CLK+/ MA+	I/O	Incr. encoder2 B+ diff. input, or Dir+-, or Clock+ for SSI, or Master+ for BiSS; has 120 $\Omega$ resistor between pins 5 and 7
8	B1+/Cos+	ı	Incr. encoder1 B single-ended, or B+ diff. input, or analogue encoder Cos+ diff. input
9	A2+/Pulse+/ Data+/SL+	ı	Incr. encoder2 A+ diff. input, or Pulse+, or Data+ for SSI, or Slave+ for BiSS; has $120\Omega$ resistor between pins 9 and 11
10	A1+/Sin+	ı	Incr. encoder1 A single-ended, or A+ diff. input, or analogue encoder Sin+ diff. input
11	A2- /Pulse-/ Data-/SL-	ı	Incr. encoder2 A- diff. input, or Pulse-, or Data-for SSI, or Slave- for BiSS; has $120\Omega$ resistor between pins 9 and 11
12	A1-/Sin-	ı	Incr. encoder1 A- diff. input, or analogue encoder Sin- diff. input
13	Z2+	ı	Incr. encoder2 Z+ diff. input ; has $120\Omega$ resistor between pins 13 and 15
14	Z1+	I	Incr. encoder1 Z single-ended, or Z+ diff. input,
15	<b>Z</b> 2-	-1	Incr. encoder2 Z- diff. input; has $120\Omega$ resistor between pins 13 and 15
16	Z1-	I	Incr. encoder1 Z- diff. input
17	Hall 1	- 1	Digital input Hall 1 sensor
18	Reserved	-	Reserved. Do not connect.
19	Hall 2	- 1	Digital input Hall 2 sensor
20	Reserved	-	Reserved. Do not connect.
21	Hall 3	- 1	Digital input Hall 3 sensor
22	232TX	0	RS-232 Data Transmission
23	+5V <sub>OUT</sub>	0	5V output supply for I/O usage
24	232RX		RS-232 Data Reception
25	Temp Mot	I	NTC/PTC input. Used to read an analog temperature value
26	Reserved	-	Reserved. Do not connect.
27	+V <sub>LOG</sub>	ı	Positive terminal of the logic supply input: 9 to $36\mbox{V}_{DC}$ from SELV/ PELV type power supply.
28	OUT4	0	5-36V 0.5A, general-purpose digital output, NPN open-collector/TTL pull-up
	+V <sub>MOT</sub>	- 1	Positive terminal of the motor supply: 11 to $48\mbox{V}_{\mbox{\scriptsize DC}}.$
29	T V MOI		
30	+V <sub>MOT</sub>	ı	Positive terminal of the motor supply: 11 to $48V_{DC}$ .
		1	Positive terminal of the motor supply: 11 to
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	1 IN0 2 IN1 3 IN2/LSP 4 IN3/LSN 5 B2-/Dir-/CLK-/MA- 6 B1-/Cos- 7 B2+/Dir+/CLK+/MA+ 8 B1+/Cos+ 9 A2+/Pulse+/Data+/SL+ 10 A1+/Sin+ 11 A2-/Pulse-/Data-/SL- 12 A1-/Sin- 13 Z2+ 14 Z1+ 15 Z2- 16 Z1- 17 Hall 1 18 Reserved 19 Hall 2 20 Reserved 21 Hall 3 22 232TX 23 +5Vout 24 232RX 25 Temp Mot 26 Reserved 27 +VLog	1 INO I 2 IN1 I 3 IN2/LSP I 4 IN3/LSN I 5 B2-/Dir-/CLK- /MA- I/O 6 B1-/Cos- I 7 B2+/Dir+/CLK+/ MA+ I/O 8 B1+/Cos+ I 9 A2+/Pulse+/ Data+/SL+ I 10 A1+/Sin+ I 11 A2- /Pulse-/ Data-/SL- I 12 A1-/Sin- I 13 Z2+ I 14 Z1+ I 15 Z2- I 16 Z1- I 17 Hall 1 I 18 Reserved - 19 Hall 2 I 20 Reserved - 19 Hall 3 I 22 232TX O 23 +5Vour O 24 232RX I 25 Temp Mot I 26 Reserved - 27 +VLog I

 $<sup>\</sup>ensuremath{^{\dagger}}$  leave unconnected if interface extensions are not used

#### **Electrical characteristics**

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

- VLOG = 24 VDC; VMOT = 48VDC
- Supplies start-up / shutdown sequence: -any-Load current (sinusoidal amplitude / continuous BLDC, DC, stepper) = 8A

Ambient temperature	Load current	(Sinu	soidal amplitude / continu	ious bll	C, DC, Si	epper) –	oA .	
Ambient humidity	<b>Operating Conditi</b>	ions		Min.	Тур.	Max.	Units	
Allittude / pressure   Allittude (xs. sea level)   -0.1   0 + 2.5   2   Km	Ambient temperatu	ire		0		40 <sup>1</sup>	-	
Ambient pressure	Ambient humidity		Non-condensing	0		90	%Rh	
Min.   Typ.   Max.   Units	Altitude / pressure	2				2	Km	
Ambient temperature	·		Ambient Pressure					
Ambient humidity   Non-condensing   0   100   %Rh	Storage Condition	าร		Min.	Тур.	Max.	Units	
Ambient Pressure   SD capability (Human body model)	Ambient temperatu	ire		-40		100	°C	
Not powered; applies to any accessible part Original packaging   ±15 kV	Ambient humidity		Non-condensing	0		100	%Rh	
any accessible part	Ambient Pressure			0		10.0	atm	
Airdivariable   Airdivariab	ESD canability					+0.5	k\/	
Min.   Typ.   Max.   Units		el)						
Airflow   Spacing required for vertical mounting   Between adjacent drives   30					T			
Between adjacent drives   30   mm   mm   Between adjacent drives   30   mm   mm   mm   mm   mm   mm   mm		ting						
Between drives and nearby walls   Spacing required mounting	AITHOW	Ret	ween adjacent drives		ai convecu	on <sup>-</sup> , close		
Walls   Between drives and roof-top   20   mm   mm								
Between drives and roof-top   20   mm   mm				30			mm	
Spacing required for horizontal mounting	mounting	Bet	ween drives and roof-top	20			mm	
Spacing required for horizontal mounting				4			mm	
Sapace needed for drive removal   10	Spacing required			5			mm	
removal   Retween drives and roof-top   Retween drives and roof	for horizontal				1			
Between drives and roof-top   15	mounting			10			mm	
Insertion force   Extraction force   Extraction force   Extraction force   Extraction force   Connectors   TBD   TBD   N   TBD   TBD   TBD   N   TBD   TBD   TBD   N   TBD				15			mm	
Size ( Length x   Wildth x Height )   Global size   Glo					TBD	TBD	N	
Size ( Length x   Width x Height )   Global size   Global size   C2.52 x 1.72 x 0.87   inch   inc				TBD	TBD			
Weight         Global size         ~2.52 x 1.72 x 0.87         inch           Weight         45         g           Cleaning agents         Dry cleaning is recommended recommended         Only Water- or Alcohol- based           Protection degree         According to IEC60529, UL508         IP20         -           Logic Supply Input (+V <sub>Los</sub> )         Min.         Typ.         Max.         Units           Nominal values         9         36         V <sub>DC</sub> Absolute maximum values, adrive operating but outside guaranteed parameters         8         40         V <sub>DC</sub> Absolute maximum values, surge (duration ≤ 10ms) <sup>†</sup> -1         +45         V           Supply current         +V <sub>Log</sub> = 12V         130         +45         V           Motor Supply Input (+V <sub>Mor</sub> )         Min.         Typ.         Max.         Units           Motor Supply Input (+V <sub>Mor</sub> )         Min.         Typ.         Max.         Units           Supply voltage         Nominal values         11         50         V <sub>DC</sub> Absolute maximum values, continuous         -0.6         54         V <sub>DC</sub> Absolute maximum values, continuous         -0.6		narac	teristics				Units	
Veight		۵.		64	4 x 43.6 x 2	22	mm	
Cleaning agents         Dry cleaning is recommended recommended         Only Water- or Alcohol- based           Protection degree         According to IEC60529, UL508         IP20         -           Logic Supply Input (+V <sub>Los</sub> )         Min.         Typ.         Max.         Units           Absolute maximum values, drive operating but outside guaranteed parameters         8         40         V <sub>DC</sub> Absolute maximum values, continuous         -0.6         42         V <sub>DC</sub> Absolute maximum values, continuous         -0.6         42         V <sub>DC</sub> Supply current         +V <sub>Los</sub> = 12V         130         mA           +V <sub>Los</sub> = 24V         90         280         mA           +V <sub>Los</sub> = 40V         85         mA           Motor Supply Input (+V <sub>Mor</sub> )         Min.         Typ.         Max.         Units           Supply voltage         Nominal values         11         50         V <sub>DC</sub> Supply voltage         Nominal values, drive operating but outside guaranteed parameters         9         52         V <sub>DC</sub> Absolute maximum values, continuous         -0.6         54         V <sub>DC</sub> Supply current         Idle         1         57         V           Supply current         Idle	Width x Height )	Glo	bal size	~2.52 x 1.72 x 0.87			inch	
Cleaning agents         Dry cleaning is recommended recommended         Only Water- or Alcohol- based           Protection degree         According to IEC60529, UL508         IP20         -           Logic Supply Input (+V <sub>Los</sub> )         Min.         Typ.         Max.         Units           Absolute maximum values, drive operating but outside guaranteed parameters         8         40         V <sub>DC</sub> Absolute maximum values, continuous         -0.6         42         V <sub>DC</sub> Absolute maximum values, continuous         -0.6         42         V <sub>DC</sub> Supply current         +V <sub>Los</sub> = 12V         130         mA           +V <sub>Los</sub> = 24V         90         280         mA           +V <sub>Los</sub> = 40V         85         mA           Motor Supply Input (+V <sub>Mor</sub> )         Min.         Typ.         Max.         Units           Supply voltage         Nominal values         11         50         V <sub>DC</sub> Supply voltage         Nominal values, drive operating but outside guaranteed parameters         9         52         V <sub>DC</sub> Absolute maximum values, continuous         -0.6         54         V <sub>DC</sub> Supply current         Idle         1         57         V           Supply current         Idle	Weight				45 g			
Protection degree	•	Dry	cleaning is	0		A1 1 - 1 - 1		
Logic Supply Input (+V <sub>Log</sub> )	Cleaning agents	rec	ommended	Only	Water- or	Alcohol- b	ased	
Logic Supply Input (+V <sub>Log</sub> )   Min.   Typ.   Max.   Units	Protection degree				IP20		_	
Nominal values	· ·			Min	T	Marr	I Indian	
Supply voltage    Absolute maximum values, drive operating but outside guaranteed parameters   8	Logic Supply Inpl				ιyp.			
Supply voltage				9		30	VDC	
Supply voltage				8		40	$V_{DC}$	
Absolute maximum values, surge (duration ≤ 10ms)   1			ranteed parameters					
	0							
	Supply voltage	Abs	solute maximum values,	-0.6		42	Vnc	
Supply current $\frac{+V_{LoG} = 12V}{+V_{LoG} = 24V}$ 90 280 mA  Motor Supply Input $\frac{+V_{LOG} = 40V}{+V_{LOG} = 40V}$ Min. Typ. Max. Units  Supply voltage $\frac{-0.6}{4}$ $-0$	Supply voltage	Abs	solute maximum values, tinuous	-0.6		42	V <sub>DC</sub>	
Supply current $+V_{LOG} = 24V$ $+V_{LOG} = 40V$ $+V_{L$	Supply voltage	Abs	solute maximum values, tinuous solute maximum values,					
+V <sub>LOG</sub> = 40V   85	Supply voltage	Abs con Abs	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms)		420			
Motor Supply Input (+V <sub>Mor</sub> )         Min.         Typ.         Max.         Units           Supply voltage         Nominal values         11         50         V <sub>DC</sub> Absolute maximum values, drive operating but outside guaranteed parameters         9         52         V <sub>DC</sub> Absolute maximum values, continuous         -0.6         54         V <sub>DC</sub> Absolute maximum values, surge (duration ≤ 10ms) †         -1         57         V           Supply current         Absolute maximum value, short-circuit condition (duration ≤ 10ms) †         -20         ±8         +20         A           Supply Output (+5V)         Min.         Typ.         Max.         Units           Supply Output voltage         Current sourced = 250mA         4.8         5         5.2         V           Output current         Short-circuit         NOT protected           Over-voltage         NOT protected		Abs con Abs sur +V <sub>L</sub>	colute maximum values, tinuous colute maximum values, ge (duration ≤ 10ms)			+45	V	
$Supply \ voltage \  \   \begin{array}{ c c c c c c }\hline & Nominal \ values \\ Absolute \ maximum \ values, \\ drive \ operating \ but \ outside \\ guaranteed \ parameters \\ Absolute \ maximum \ values, \\ continuous \\ Absolute \ maximum \ values, \\ continuous \\ Absolute \ maximum \ values, \\ surge \ (duration \le 10ms)^{\dagger} & -1 & 57 & V \\ \hline \\ Supply \ current \\ \hline Supply \ current \\ \hline Supply \ current \\ \hline Supply \ Output \ (+5V) & Min. \ Typ. \ Max. \ Units \\ \hline Supply \ Output \ (v+5V) & Min. \ Typ. \ Max. \ Units \\ \hline Output \ current \ Supply \ Current \ sourced = 250mA & 4.8 & 5 & 5.2 & V \\ \hline Output \ current \ Supply \ Supply \ Current \ Supply \ Sup$		Abs con Abs sur +V <sub>L</sub>	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) <sup>†</sup> oo = 12V oo = 24V		90	+45	V	
Supply voltage	Supply current	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub>	solute maximum values, tinuous solute maximum values, solute maximum values, ge (duration ≤ 10ms) to Ge = 12V  GG = 24V  GG = 40V	-1	90 85	+45	V mA	
$Supply \ voltage \\ Supply voltage \\ & \begin{array}{c} \mbox{drive operating but outside guaranteed parameters} \\ \mbox{Absolute maximum values, continuous} \\ \mbox{Absolute maximum values, surge (duration $\leq$ 10ms)^{$^{\dagger}$} \\ \mbox{Supply current} \\ \mbox{Supply current} \\ & \begin{array}{c} \mbox{Idle} \\ \mbox{Operating} \\ \mbox{Absolute maximum value, short-circuit condition (duration $\leq$ 10ms)^{$^{\dagger}$} \\ \mbox{Supply Output (+5V)} \\ \mbox{Supply Output (+5V)} \\ \mbox{Output current} \\ \mbox{Supply Current} \\ \mbox{Output current} \\ \mbox{Output current} \\ \mbox{Supply Over-voltage} \\ \mbox{Over-voltage} \\$	Supply current	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub> +V <sub>L</sub>	solute maximum values, tinuous solute maximum values, solute maximum values, ge (duration ≤ 10ms) to oo = 12V oo = 24V oo = 40V VMor)	-1 <b>Min</b> .	90 85	+45 280 <b>Max.</b>	V mA	
	Supply current	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub> +V <sub>L</sub>	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) <sup>†</sup> o <sub>G</sub> = 12V o <sub>G</sub> = 24V o <sub>G</sub> = 40V  ✓wor) minal values	-1 <b>Min</b> .	90 85	+45 280 <b>Max.</b>	V mA	
Supply current	Supply current	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub> +V <sub>L</sub> Nor Abs	solute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values tolute maximum values, tinuous tinuous tolute maximum values, tinuous tinuous tolute maximum values, tinuous	-1 <b>Min.</b>	90 85	+45 280 <b>Max.</b> 50	V mA Units	
Absolute maximum values, surge (duration ≤ 10ms) $^{\dagger}$ -1 $^{\dagger}$ 57 $^{\dagger}$ V supply current $^{\dagger}$ Absolute maximum value, short-circuit condition (duration ≤ 10ms) $^{\dagger}$ $^$	Supply current  Motor Supply Input	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub> +V <sub>L</sub> ut (+' Nor Abs driv gua	solute maximum values, tinuous solute maximum values, solute maximum values, ge (duration ≤ 10ms) to solute maximum values, os = 12V  os = 24V  os = 40V  VMort)  minal values solute maximum values, ge operating but outside tranteed parameters	-1 <b>Min.</b>	90 85	+45 280 <b>Max.</b> 50	V mA Units	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Supply current  Motor Supply Input	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub> tut (+' Nor Abs driv gua Abs	solute maximum values, tinuous solute maximum values, solute maximum values, ge (duration ≤ 10ms) <sup>†</sup> oos = 12V oos = 24V oos = 40V  Voor) minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values,	-1 Min. 11	90 85	+45  280  Max. 50  52	V mA Units V <sub>DC</sub>	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Supply current  Motor Supply Input	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub> +V <sub>L</sub> Mon Abs driv gua Abs con	solute maximum values, tinuous solute maximum values, solute maximum values, ge (duration ≤ 10ms) toge = 12V oos = 24V oos = 40V  Voor) minal values solute maximum values, ge operating but outside uranteed parameters solute maximum values, tinuous	-1 Min. 11 9 -0.6	90 85	+45  280  Max. 50 52	V mA Units VDC VDC	
Supply current $\begin{pmatrix} Operating & -20 & \pm 8 & +20 & A \\ Absolute maximum value, short-circuit condition (duration ≤ 10ms) ^{\dagger} \begin{pmatrix} Min. & Typ. & Max. & Units \end{pmatrix} \begin{pmatrix} Supply Output (+5V) & Min. & Typ. & Max. & Units \end{pmatrix} \begin{pmatrix} Output voltage & Current sourced = 250mA & 4.8 & 5 & 5.2 & V & 200 & 250 & mA & 200 & 250 & $	Supply current  Motor Supply Input	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub> +V <sub>L</sub> (+' Nor Abs driv gua Abs con Abs	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 12V os = 24V os = 40V  Very minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous	-1 Min. 11 9 -0.6	90 85	+45  280  Max. 50 52	V mA Units VDC VDC	
Supply Output (+5V)   Min.   Typ.   Max.   Units	Supply current  Motor Supply Input	Abs sure that the sure that th	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 12V os = 24V os = 40V  Very minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos ge (duration ≤ 10ms)	-1 Min. 11 9 -0.6	90 85 <b>Typ</b> .	+45  280  Max. 50 52 54	V mA Units VDC VDC VDC	
Supply Output (+5V)   Min.   Typ.   Max.   Units	Supply current  Motor Supply Input	Abs sure that the sure that th	solute maximum values, tinuous solute maximum values, solute maximum values, ge (duration ≤ 10ms) to solute maximum values, one = 22V one = 24V one = 40V  ✓ Morr) minal values solute maximum values, solute maximum values, tinuous solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) to solute maximum values, ge (duration ≤ 10ms)	-1  Min. 11 9 -0.6	90 85 <b>Typ</b> .	+45  280  Max. 50 52 54 57	V mA Units VDC VDC VDC VDC VDC	
Supply Output (+5V)         Min.         Typ.         Max.         Units           Output voltage         Current sourced = 250mA         4.8         5         5.2         V           Output current         200         250         mA           Short-circuit         NOT protected           Over-voltage         NOT protected	Supply current  Motor Supply Input  Supply voltage	Abs con Abs sur +V <sub>L</sub> +V <sub>L</sub> +V <sub>L</sub> ut (+ Non Abs con Abs sur Idle	solute maximum values, tituous solute maximum values, solute maximum values, solute maximum values, ge (duration ≤ 10ms) to so = 12V so = 24V so = 40V  Vor) minal values solute maximum values, re operating but outside raranteed parameters solute maximum values, tituous solute maximum values, ge (duration ≤ 10ms) to solute maximum values, ge (duration ≤ 10ms) to solute maximum value, solute maximum value,	-1  Min. 11 9 -0.6	90 85 <b>Typ</b> .	+45  280  Max. 50 52 54 57	V mA Units VDC VDC VDC VDC VDC	
Output voltage         Current sourced = 250mA         4.8         5         5.2         V           Output current         200         250         mA           Short-circuit         NOT protected           Over-voltage         NOT protected	Supply current  Motor Supply Input  Supply voltage	Abs surry +Vi +Vi +Vi ut (++ Non Abs driv gua Abs con Abs surry Idle Ope Abs	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) to so = 12V oos = 24V oos = 24V oos = 40V  Vwor) minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) to ge (durati	-1  Min. 11 9 -0.6	90 85 <b>Typ</b> .	+45  280  Max. 50  52  54  57  5 +20	V mA Units VDC VDC VDC VDC	
Output current         200         250         mA           Short-circuit         NOT protected           Over-voltage         NOT protected	Supply current  Motor Supply Input  Supply voltage	Abs surry +Vi +Vi +Vi ut (++ Non Abs driv gua Abs con Abs surry Idle Ope Abs	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) to so = 12V oos = 24V oos = 24V oos = 40V  Vwor) minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) to ge (durati	-1  Min. 11 9 -0.6	90 85 <b>Typ</b> .	+45  280  Max. 50  52  54  57  5 +20	V mA Units VDC VDC VDC VDC	
Short-circuit NOT protected Over-voltage NOT protected	Supply current  Motor Supply Inpu Supply voltage  Supply current	Abs surrivit (+'Vi +Vi +Vi ut (+' Nori Abs driv gua Abs con Abs surrivit Idle Ope Abs sho	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) to so = 12V oos = 24V oos = 24V oos = 40V  Vwor) minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) to ge (durati	-1 Min. 11 9 -0.6 -1	90 85 <b>Typ.</b>	+45  280  Max. 50 52 54 57 5 +20 26	V mA Units Voc Voc Voc V mA A A	
Over-voltage NOT protected	Supply current  Motor Supply Input Supply voltage  Supply current  Supply Output (+4 Output voltage	Abs surri +Vi +Vi ut (+' Nor Abs driv gua Abs con Abs sho (du	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 12V oos = 24V oos = 40V  Vor) minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 10ms  erating solute maximum values, ge (duration ≤ 10ms) toos = 10ms  erating solute maximum value, ort-circuit condition ration ≤ 10ms) toos = 10ms	-1 Min. 11 9 -0.6 -1 -20 Min. 4.8	90 85 <b>Typ.</b> 1 ±8 <b>Typ.</b> 5	+45  280  Max. 50 52 54 57 5 +20 26  Max.	V mA Units VDC VDC VDC V mA A A Units	
	Supply current  Motor Supply Input Supply voltage  Supply current  Supply Output (+t Output voltage Output current	Abs surri +Vi +Vi ut (+' Nor Abs driv gua Abs con Abs sho (du	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 12V oos = 24V oos = 40V  Vor) minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 10ms  erating solute maximum values, ge (duration ≤ 10ms) toos = 10ms  erating solute maximum value, ort-circuit condition ration ≤ 10ms) toos = 10ms	-1 Min. 11 9 -0.6 -1 -20 Min. 4.8	90 85 <b>Typ.</b> 1 ±8 <b>Typ.</b> 5 250	+45  280  Max. 50  52  54  57  5 +20  26  Max. 5.2	V mA Units Vbc Vbc V mA A A Units	
LOD Protection   Fluman body model   E1   KV	Supply current  Motor Supply Input Supply voltage  Supply Current  Supply Output (+8 Output voltage Output current Short-circuit	Abs surri +Vi +Vi ut (+' Nor Abs driv gua Abs con Abs sho (du	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 12V oos = 24V oos = 40V  Vor) minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 10ms  erating solute maximum values, ge (duration ≤ 10ms) toos = 10ms  erating solute maximum value, ort-circuit condition ration ≤ 10ms) toos = 10ms	-1 Min. 11 9 -0.6 -1 -20 Min. 4.8	90 85 <b>Typ.</b> 1 ±8 <b>Typ.</b> 5 250 NOT pn	+45  280  Max. 50 52 54 57 5 +20 26  Max. 5.2 otected	V mA Units Vbc Vbc V mA A A Units	
	Supply current  Motor Supply Input Supply voltage  Supply current Supply Output (+: Output voltage Output current Short-circuit Over-voltage	Abs surr +V <sub>L</sub> +V <sub>L</sub> +V <sub>L</sub> Word Abs corr Abs surr Idle Ope Abs corr (du	solute maximum values, tinuous solute maximum values, ge (duration ≤ 10ms) toos = 12V oos = 24V oos = 40V  Vor) minal values solute maximum values, ge operating but outside tranteed parameters solute maximum values, ge (duration ≤ 10ms) toos too too too too too too too too to	-1 Min. 11 9 -0.6 -1 -20 Min. 4.8 200	90 85 <b>Typ.</b> 1 ±8 <b>Typ.</b> 5 250 NOT pn	+45  280  Max. 50 52 54 57 5 +20 26  Max. 5.2 otected	V mA Units VDC VDC V MA A A Units V mA	

<sup>&</sup>lt;sup>1</sup>Operating temperature at higher temperatures is possible with reduced current and power ratings <sup>2</sup> iPOS4808 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.

 $<sup>^3</sup>$  In case of forced cooling (conduction or ventilation) the spacing requirements may drop substantially down to zero as long as the ambient temperature is kept below the maximum operating limit

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# iPOS4808 MY-CAT-STO DATASHEET P/N: P027.314.E121

Motor Outputs (A	/A+, B/A-, C/B+, CR	Min.	Тур.	Max.	Units	
Nominal output	for DC brushed, steppers and BLDC motors with Hall- based trapezoidal control				8	
current, continuous <sup>1</sup>	for PMSM motors sinusoidal control ( amplitude value)	(sinusoidal			8	А
	for PMSM motors sinusoidal control ( effective value)				5.66	
Motor output current, peak	maximum 2.5s		-20		+20	Α
Short-circuit protection threshold			±22	±26	±30	Α
Short-circuit protection delay			5	10		μS
On-state voltage drop	Nominal output cui including typical m connector contact	ating		±0.3	±0.5	٧
Off-state leakage current				±0.5	±1	mA
	Recommended	F <sub>PWM</sub>				
	value, for current	20 kHz	330			μH
	ripple max. ±5% of	40 kHz	150			
	full range;	60 KHZ	120			
Motor inductance	+V <sub>MOT</sub> = 36 V	80 kHz	80			
(phase-to-phase)		100 kHz	60			
, ,	Minimum value,	20 kHz	120			μΗ
	limited by short-	60 kHz	40			
	circuit protection;	40 kHz 80 kHz	30 15			
	+V <sub>MOT</sub> = 36 V	100 kHz	8			
	Recommended	20 kHz	250			
Motor electrical	value for ±5%	40 kHz	125			
time-constant	current	60 kHz	100			μs
(L/R)	measure-ment	80 kHz	63			μο
(=)	error	100 kHz	50			
Current measurement	FS = Full Scale ac	curacy		±4	±8	%FS
Digital Inputs (IN0, IN1, IN2/LSP	, IN3/LSN, IN4, IN5	)2	Min.	Тур.	Max.	Units
Mode compliance				PI	NP	
Default state	Input floating (wirir	ng		Logic	LOW	
	disconnected) Logic "LOW"		-10	0	2.2	ı
	Logic LOW Logic "HIGH"		6.3	24	36	
	Hysteresis		1.2	2.4	2.8	1
Input voltage	Floating voltage (n connected)	ot		0		V
	Absolute maximun continuous	٦,	-10		+39	
	Absolute maximun (duration ≤ 1s)	n, surge	-20		+40	
Innut oursest	Logic "LOW"; pulle	d to GND		0		n- ^
Input current	Logic "HIGH"			8	10	mA

Mode compliance			NF	PN		
Default state	Input floating (wiring disconnected)		Logic HIGH			
	Logic "LOW"		0	2.2		
	Logic "HIGH"	6.3	24	36		
	Hysterezis	1.2	2.4	2.8		
Input voltage	Floating voltage (not connected)		15		V	
	Absolute maximum, continuous			+39		
	Absolute maximum, surge (duration ≤ 1s) <sup>†</sup>	-20		+40		
	Logic "LOW"; Pulled to GND		8	10		
Input current	Logic "HIGH"; Pulled to +24V	0	0	0	mA	
Input frequency		0		10	kHz	
Minimum pulse		6			μs	
ESD protection	Human body model	±5			kV	

Digital Outputs (OUT0, OUT1, OUT2/Error, OUT3/ Ready, OUT4)		Min.	Тур.	Max.	Units		
Mode compliance	All outputs (OUT0, OUT1, OUT2/Error, OUT3/Ready)		NPN 24V				
	Not supplied (+V <sub>LOG</sub> floating or to GND) High-Z (floating		floating)				
Default state	Immediately after power-	OUT0, OUT1, OUT4		Logic '	Logic "HIGH"		
	up	OUT2/Error, OUT3/ Ready		Logic "LOW"			
	Normal OUT0, OUT1, OUT2/Error		Logic "HIGH"				
	operation	OUT3/Ready		Logic			
	Logic "LOW"; = 0.5A	output current			0.8		
	Logic "HIGH"; output	OUT2/Error, OUT3/ Ready	2.9	3	3.3		
Output voltage	current = 0, no load	OUT0, OUT1, OUT4	4	4.5	5	V	
	Logic "HIGH", to +V <sub>LOG</sub>	external load		$V_{LOG}$			
	Absolute max continuous		-0.5		V <sub>LOG</sub> +0.5		
	Absolute max (duration ≤ 1s	†	-1		V <sub>LOG</sub> +1		
	Logic "LOW",	sink current			0.5	Α	
	Logic "LOW", sink current, pulse ≤ 5 sec.				1	Α	
Output current	Logic "HIGH", source current external load to GND; V <sub>OUT</sub> >= 2.0V	t; Ready			2	mA	
		OUT0, OUT1, OUT4			4	mA	
	Logic "HIGH", current; extern +V <sub>LOG</sub> ; V <sub>OUT</sub> = 40V	nal load to		0.1	0.2	mA	
Minimum pulse width			2			μs	
ESD protection	Human body i	model	±15			kV	
Digital Hall Inputs	(Hall1, Hall2,	Hall3)	Min.	Тур.	Max.	Units	
Mode compliance			TTL / CMOS / Open-collector			ector	
Default state	Input floating (wiring discon	nected)		Logic	HIGH		
	Logic "LOW" Logic "HIGH"		2	<u>0</u> 5	0.8		
Input voltage	Floating voltage (not connected) Absolute maximum, surge (duration ≤ 1s)  †			4.4		V	
			-10		+15		
	(duration ≤ 1s)   Logic "LOW"; Pull to GND   Logic "HIGH"; Internal 4.7KΩ   pull-up to +5				1.2	mA	
Input current			0	0	0		
Minimum pulse width			2			μs	
ESD protection	Human body i	model	±5			kV	
Linear Hall Inputs (LH1, LH2, LH3)		Min.	Тур.	Max.	Units		
	Operational rar		0	0.5÷4.5	4.9	V	
	Absolute maximum values, continuous Absolute maximum, surge (duration ≤ 1s) <sup>†</sup>		-7		+7	V	
			-11		+14	,	
Input current	Input voltage 0		0		0.2	mA	
Resolution	Depending on s settings	software			11	bits	
Frequency ESD protection	Luman hade	adal	0		1	kHz	
ESD protection	Human body m	ouei	±1	<u>I</u>	<u>I</u>	kV	

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@20kHz F <sub>PWN</sub>	M	<sup>2</sup> The digital inputs are software selectable as PNP or NPN				

## **iPOS4808 MY-CAT-STO DATASHEET** P/N: P027.314.E121

Encoder1 Inputs (A1/A1+, A1-, B1/I	31+, B1-, Z1/Z1+, Z1-)	Min.	Тур.	Max.	Units	
Single-ended mode compliance	Leave negative inputs disconnected	TTL	CMOS /	Open-colle	ector	
•	Logic "LOW"			1.6		
Input voltage, single-ended	Logic "HIGH"	1.8			v	
mode A/A+, B/B+	Floating voltage (not		3.3		7 °	
	connected)		0.0	4.0		
Input voltage,	Logic "LOW" Logic "HIGH"	1.4		1.2	V	
single-ended	Floating voltage (not		4.7			
mode Z/Z+	connected)		4.7			
Input current,	Logic "LOW"; Pull to GND		5.5	6		
single-ended mode A/A+.	Logic "HIGH"; Internal 2.2KΩ	0	0	0	mA	
B/B+, Z/Z+	pull-up to +5	0	U	U		
Differential mode	For full RS422 compliance,		TIA/EIA	_/122_A	1	
compliance	see 1					
Input voltage,	Hysteresis	±0.06	±0.1	±0.2	V	
differential mode	Common-mode range (A+ to GND, etc.)	-7		+7	v	
Input impedance,	A1+ to A1-, B1+ to B1-		1			
differential	Z1+ to Z1-		1		kΩ	
	Single-ended mode, Open-	0		5	MHz	
	collector / NPN	0		J	141112	
Input frequency	Differential mode, or Single- ended driven by push-pull	0		10	MHz	
	(TTL / CMOS)	0		10	IVITIZ	
	Single-ended mode, Open-	1				
Minimum pulse	collector / NPN	1			μs	
width	Differential mode, or Single-					
	ended driven by push-pull (TTL / CMOS)	50			ns	
	Absolute maximum values,				· v	
Input voltage, any	continuous	-7		+7		
pin to GND	Absolute maximum, surge					
	(duration ≤ 1s) <sup>†</sup>	-11		+14		
ESD protection	Human body model	±1			kV	
	eata-, B2+/Clk+, B2-/Clk-, Z2+,	Min.	Тур.	Max.	Units	
<b>Z2-)</b> <sup>2</sup> Differential mode	For full RS422 compliance,					
compliance	see 1		TIA/EIA	-422-A		
	Hysteresis	±0.06	±0.1	±0.2	V	
Input voltage	Differential mode	-14		+14		
input voitage	C					
	Common-mode range (A+ to GND, etc.)	-11		+14		
In most image and a man						
Input impedance, differential	A2+, B2+, Z2+ A2-, B2-, Z2-		150		Ω	
				40	N 41 1-	
Input frequency Minimum pulse	Differential mode	0		10	MHz	
width	Differential mode	50			ns	
Sin-Cos Encoder		Min.	Тур.	Max.	Units	
(Sin+, Sin-, Cos+,	Cos-)	WIIII.	τyp.	IVIAX.	Ullits	
Input voltage, differential	Sin+ to Sin-, Cos+ to Cos-		1	1.25	$V_{PP}$	
unierentiai	Operational range	-1	2.5	4		
Input voltage, any pin to GND	Absolute maximum values,				V	
	continuous	-7		+7		
	Absolute maximum, surge	-11		+14		
	(duration ≤ 1s) <sup>†</sup>	''		. 17		
to an at to an at	Differential, Sin+ to Sin-,	4.2	4.7		kΩ	
Input impedance	Cos+ to Cos- <sup>3</sup> Common-mode, to GND		2.2			
	Common-mode, to GND	<b></b>	۷.۷		kΩ	
Resolution with	Software selectable, for one					
Resolution with interpolation	Software selectable, for one sine/cosine period	2		10	bits	
interpolation	Software selectable, for one sine/cosine period Sin-Cos interpolation	2		10 450	bits kHz	
	Software selectable, for one sine/cosine period					

Analog 05V Inp	uts (REF, FDBK)	Min.	Тур.	Max.	Units	
	Operational range	0		5		
	Absolute maximum values,	-12		+18		
Input voltage	continuous				V	
	Absolute maximum, surge			±36		
	(duration ≤ 1s) <sup>†</sup>			_00		
Input impedance	To GND		28		kΩ	
Resolution			12		bits	
Integral linearity				±2	bits	
Offset error			±2	±10	bits	
Gain error	0.6	_	±1%	±3%	% FS <sup>4</sup>	
Bandwidth (-3Db)	Software selectable	0		1	kHz	
ESD protection	Human body model	±5			kV	
RS-232		Min.	Тур.	Max.	Units	
Compliance			TIA/EIA	\-232-C		
Bit rate	Software selectable	9600		115200	Baud	
Short-circuit	232TX short to GND		Guara	nteed		
ESD protection	Human body model	±2			kV	
Safe torque OFF		Min.	Тур.	Max.	Units	
(STO1+,STO1-; S						
Safety function	According to EN61800-5-2		TO (Safe T			
EN 61800-5-1/ -2	Safety Integrity Level	safe	ety integrity	/ level 3 (S	SIL3)	
and EN 61508-5-	PFHD (probability of dangerous					
3/ -4	failures per hour)	8*10 <sup>-10</sup>	ho	ur¹ (0.8 FI	T)	
Classification	. ,					
EN13849-1	Performance Level		Cat3	/PLe		
Classification	MTTFM (meantime to		377		voore	
Classification	dangerous failure)		311		years	
Mode			DI	NP		
compliance			FI	NP		
Default state	Input floating (wiring		Logio	1.0\\\		
Delault State	disconnected)		Logic	LOW		
	Logic "LOW"	-20		5.6		
Input voltage	Logic "HIGH"	18		36	V	
	Absolute maximum, continuous	-20		+40		
Input current	Logic "LOW"; pulled to GND		0		mA	
input current	Logic "HIGH", pulled to +Vlog		5	13	ША	
Repetitive test	Ignored high-low-high			5		
pulses	ignered ingir lett ingir				ms	
•				20	Hz	
(high-low-high)						
Fault reaction	From internal fault detection to					
time	register DER bit 14 =1 and			30	ms	
ume	OUT2/Error high-to-low					
	F					
PWM operation	From external STO low-high			30	ma	
delay	transition to PWM operation enabled			30	ms	
ESD protection	Human body model	±2			kV	
Ethernet Ports		Min.	Тур.	Max.	Units	
		Ether(	CAT (IEC6	1158-3/4/	5/6-12)	
		Fas	t Ethernet	100BASE	-TX	
Standard		(IEEE802.3u) Auto-negotiation for 100Mbps/s				
Compliance					1bps/s	
		full-duplex Auto-detect MDI/MDI-X				
Power over	NOT used by the	compliant to IEEE802.3af mode				
1 01101		A "Mixed DC & Data"				
Ethernet			A "Mixed [	NOT compliant to IEEE802.3af		
Ethernet	iPOS4808MY, requires				J2.3af	
Ethernet		NOT		to IEEE80		
Ethernet Isolation	iPOS4808MY, requires separate +Vlog SELV/ PELV	NOT	compliant	to IEEE80		
	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply	NOT m	compliant	to IEEE80	V <sub>rms</sub>	
Isolation GND0,GND1	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing	NOT m 500	compliant ode B "DC	to IEEE80	V <sub>rms</sub>	
Isolation	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard	NOT m	compliant	to IEEE80	V <sub>rms</sub>	
Isolation GND0,GND1 Maximum cable length	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing	NOT m 500	compliant ode B "DC	to IEEE80	V <sub>rms</sub>	
Isolation GND0,GND1 Maximum cable length ESD protection	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100	compliant node B "DC 150	to IEEE80	V <sub>rms</sub> kV <sub>peak</sub> m	
Isolation GND0,GND1 Maximum cable length ESD protection LED signals	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100 ±4 Min.	compliant node B "DC 150 Typ.	to IEEE8(C) on Spare	vrms kVpeak m kV Units	
Isolation GND0,GND1 Maximum cable length ESD protection LED signals	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100 ±4 Min.	compliant node B "DC 150	to IEEE8(C) on Spare	vrms kVpeak m kV Units	
Isolation GND0,GND1 Maximum cable length ESD protection LED signals	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100 ±4 Min.	compliant dode B "DO 150 Typ.	on Spare  Max.  hode to G	Vrms KVpeak m kV Units	
Isolation GND0,GND1 Maximum cable length ESD protection LED signals LED connection	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100 ±4 Min.	150 Typ.  mmon cat irect, no se	Max. hode to Geries resis	Vrms  KV <sub>peak</sub> m  kV  Units	
Isolation GND0,GND1 Maximum cable length ESD protection LED signals LED connection LED current	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100 100 ±4 Min. Co	compliant tode B "DC"  150  Typ.  mmon cat frect, no see 8	Max. hode to Geries resis	Vrms KVpeak m kV Units	
Isolation GND0,GND1 Maximum cable length ESD protection LED signals  LED connection LED current 3.3 output	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100 ±4 Min.	150 Typ.  mmon cat irect, no se	Max. hode to Geries resis	Vrms  KV <sub>peak</sub> m  kV  Units	
Isolation GND0,GND1 Maximum cable length ESD protection LED signals LED connection LED current 3.3 output voltage	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100 100 ±4 Min. Co	compliant tode B "DC"  150  Typ.  mmon cat frect, no see 8	Max. hode to Geries resiss 10 3.45	V	
Isolation GND0,GND1 Maximum cable length ESD protection LED signals  LED connection LED current 3.3 output	iPOS4808MÝ, requires separate +Vlog SELV/ PELV supply Requirement for motherboard PCB routing 2-pair UTP Cat5	NOT m 500 1.5 100 100 ±4 Min. Co	compliant tode B "DC"  150  Typ.  mmon cat frect, no see 8	Max. hode to Geries resis	Vrms  KV <sub>peak</sub> m  kV  Units	

<sup>†</sup> 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.

 $<sup>^3</sup>$  For many applications, a 120 $\Omega$  termination resistor should be connected across SIN+ to SIN-, and across COS+ to COS-. Please consult the feedback device datasheet for confirmation.

<sup>2</sup> Encoder2 di	fferential input pins have internal 120 $\Omega$ termin	nation resistors connected across 4 "FS" stands for "Full Scale"		
Name	First edition	Document template: P099.TQT.564.0001	Last edition	Visa :
EP	June 2, 2020		June 2, 2020	GC
TECHNOSOFT		Title of document	N° document	
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 $<sup>^1</sup>$  For full RS-422 compliance, 120 $\Omega$  termination resistors must be connected across the differential pairs, as close as possible to the drive input pins.

 $<sup>^2</sup>$  Encoder2 differential input pins have internal 120 $\Omega$  termination resistors connected across