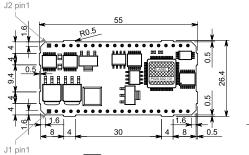
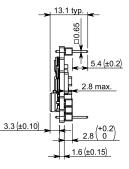


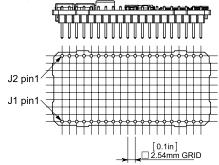
iPOS3604 MX-CAN DATASHEET

P/N: P028.002.E101









Motor – sensor configurations							
Motor Sensor	PMSM	BLDC	DC BRUSH	STEP (2-ph)	STEP (3-ph)		
Incr. Encoder	7		(L)	7			
Incr. Encoder + Hall	T	T					
Analog Sin/Cos encoder	7						
Linear Halls	T						
Digital Halls	7						
Tacho			T				
Open-loop (no sensor)				•	7		

Connectors type						
Ref. Producer On-board connector Mating connec						
	Fischer Elektronik	SL 11 112 020 G	BL 5 20			
J1, J2	-	Standard header square pin 0.635 x 0.635 mm; 2.54 mm pitch	Standard socket for square pin 0.635 x 0.635 mm; 2.54 mm pitch			

14	REF	I	Analogue input, 12-bit, 0-5V. Used to read an analog position, speed or torque reference, or used as general purpose analogue input
15	Z / Z+	ı	Incr. encoder Z (index) single-ended, or Z+ diff. input
16	Z- / LH3	1	Incr. encoder Z- differential input, or linear Hall 3 input
17	A / A+ / Sin+	ı	Incr. encoder A single-ended, or A+ diff. input, or analogue encoder Sin+ diff. input
18	A- / Sin- / LH1	1	Incr. encoder A- diff. input, or analogue encoder Sindiff. input, or linear Hall 1 input
19	B / B+ / Cos+	I	Incr. encoder B single-ended, or B+ diff. input, or analogue encoder Cos+ diff. input
20	B- / Cos- / LH2	1	Incr. encoder B- diff. input, or analogue encoder Cos-diff. input, or linear Hall 2 input

	Pin	Name	Type	Description
	1-2 A / A+ C			Phase A for 3-ph motors, A+ for 2-ph steppers, Motor+ for DC brush motors
	3-4	C / B+	0	Phase C for 3-ph motors, B+ for 2-ph steppers
	5-6	GND	-	Negative return (ground) of the motor supply
	7 IN0 I			5-36V digital input General-purpose
	8	IN1	ı	5-36V digital input
	9 IN2/LSP	ı	5-36V digital input Positive limit switch input	
	10	10 IN3/LSN I	5-36V digital input Negative limit switch input	
7	11	IN4 / Enable	I	5-36V digital input Drive enable input
7	12	GND	-	Return ground
	13	+5V _{OUT}	0	5V output supply
	14	AxisID 2	1	Axis ID/Address input. 7 states: floating, strap to GND or +5V, resistor 4K7 or 22K to GND or +5V
	15	AxisID 1	I	Axis ID/Address input. 7 states: floating, strap to GND or +5V, resistor 4K7 or 22K to GND or +5V
	16 AxisID 0 I		ı	Axis ID/Address input. 7 states: floating, strap to GND or +5V, resistor 4K7 or 22K to GND or +5V
	17	Can-Lo	1/0	CAN-Bus negative line (dominant low)
	18	Can-Hi	1/0	CAN-Bus positive line (dominant high)
	19	232TX	0	RS-232 Data Transmission
	20	232RX	I	RS-232 Data Reception

Features

- Motor supply: 9-36V. Optional logic supply: 7-36V
- Output current: 4A cont. (BLDC mode); 10A_{PEAK} , up to 100KHz PWM
- Digital Hall sensor interface (single-ended and open collector)
- Incremental encoder interface (single-ended, open collector and differential)
- Linear Hall sensors interface
- Analogue sin/cos encoder interface (differential 1V_{pp})
- 5 digital inputs, 5-36V, NPN: Enable, 2 for limit switches, 2 generalpurpose
- 3 digital outputs, 5-36V, 0.5A, NPN O.C.: Ready, Error, 1 general-purpose
- 1 analogue input: 12-bit, 0-5V: Reference or general purpose
- RS-232 serial & CAN-bus 2.0B interfaces with h/w selectable addresses
- TMLCAN and CANopen (CiA 301v4.2 and 402v3.0) protocols
- $2K\times 16\mbox{ SRAM}$ for data acquisition
- $4K \times 16~E^2ROM$ to store TML motion programs and data
- Operating ambient temperature: 0-40°C (over 40°C with derating)
- Hardware Protections: short-circuit between motor phases and from motor phases to GND, over-voltage, under-voltage and I2t
- Firmware: F508M+ or F523E+

C	Connector description								
	Pin	Name	Type	Description					
	1-2	B / A-	0	Phase B for 3-ph motors, A- for 2-ph steppers, Motor- for DC brush motors					
	3-4	CR / B-	0	Chopping resistor / Phase B- for step motors					
	5-6	+V _{MOT}	ı	Positive terminal of the motor supply: 9 to $36V_{\text{DC}}$					
	7	$+V_{LOG}$	1	Positive terminal of the logic supply: 7 to $36V_{DC}$					
7	Q	OUT3 / Ready	0	5-36V 0.5A drive ready output, active low, NPN open-collector/TTL pull-up. Also drives the green LED.					
	9	OUT2 / Error	0	5-36V 0.5A drive error output, active low, NPN open-collector/TTL pull-up. Also drives the red LED					
	10	Hall 1	ı	Digital input Hall 1 sensor					
	11	Hall 2	Ī	Digital input Hall 2 sensor					
	12	Hall 3		Digital input Hall 3 sensor					
	13	OUT0	0	5-36V 0.5A general-purpose digital output, NPN open-collector / TTL pull-up					

		PRODUCT DATA SHEET		Page: 1 of 4	
TE	CHNOSOFT	iPOS3604 MX-CAN	P028.002.E101.DSH.10K.docx		
		Title of document	cument N° document		
A. N.	May 11, 2011		October 02, 2018 R. G.		
Name	First edition	Document template: P099.TQT.564.0001	Last edition Visa :		



iPOS3604 MX-CAN DATASHEET P/N: P028.002.E101



Electrical characteristics

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

Tamb = 0...40°C, VLOG = 24 VDC; VMOT = 36VDC

Supplies start-up / shutdown sequence: -anyLoad current (sinusoidal amplitude / continuous BLDC, DC, stepper) = 2A

Operating Condit	ions		Min.	Тур.	Max.	Units	
Ambient temperatu	ıre1		0		+40	٥C	
Ambient humidity		Non-condensing	0		90	%Rh	
Altitude / pressure	2	Altitude (vs. sea level)	-0.1	0 ÷ 2.5	2	Km	
	Ambient Pressure Storage Conditions			0.75 ÷ 1	10.0	atm Units	
			Min.	Тур.	Max.		
Ambient temperature			-40		+85	°C	
Ambient humidity					100	%Rh	
Ambient Pressure					10.0	atm	
ESD capability (three barts and all) Not powered; applies to any accessible part					±0.5	kV	
(Human body mod	el)	Original packaging			±15	kV	
Mechanical Mour	tina		Min.	Тур.	Max.	Units	
Airflow	Ĭ		natura	al convecti	on³, close	ed box	
Spacing required	Bet	ween adjacent drives	30			mm	
for vertical		ween drives and nearby	30			mm	
mounting	wal	ween drives and roof-top	20				
		ween adjacent drives	4			mm mm	
Cassing required		ween drives and nearby	5				
Spacing required for horizontal	wal		υ			mm	
mounting		ace needed for drive	10			mm	
		ween drives and roof-top	15			mm	
Insertion force		ng recommended mating		20	36	N	
Extraction force	con	nectors; without retainer	5	10		N	
Environmental Cl	nara	cteristics	Min.	Тур.	Max.	Units	
Size (Length x	Č.	hala'a	55	55 x 26.4 x 13.1			
Width x Height)	GIO	bal size	~	2.2 x 1 x 0	.5	inch	
Weight			8			g	
Power		(no load)		1		W	
dissipation	Ope	erating		3			
Efficiency	Dn	alaaning is	98			%	
01 1	ing agents Dry cleaning is			Only Water- or Alcohol- I			
Cleaning agents		ommended	Only	water- or	Alconol- I	oased	
Protection	rec	ommended ording to IEC60529,	Only		Alconol- I	ased _	
Protection degree	Acc UL	ommended ording to IEC60529, 508		IP00		-	
Protection	Acc UL:	ommended ording to IEC60529, 508 V _{Loe})	Min.		Max.	- Units	
Protection degree	Acc UL: Ut (+	ommended ording to IEC60529, 508 VLog) ninal values		IP00		-	
Protection degree	Acc UL: ut (+ Nor Abs	ommended ording to IEC60529, 508 VLoc) Ininal values olute maximum values,	Min.	IP00	Max.	- Units	
Protection degree	Acc UL£ ut (+ Nor Abs driv gua	ommended cording to IEC60529, 608 VLos) minal values colute maximum values, e operating but outside ranteed parameters	Min. 7	IP00	Max. 36	- Units	
Protection degree	reco Acc ULS ut (+ Nor Abs driv gua Abs	ommended cording to IEC60529, 508 VLos) minal values colute maximum values, te operating but outside ranteed parameters colute maximum values,	Min. 7	IP00	Max. 36	- Units	
Protection degree Logic Supply Inp	Record ULS ut (+ Nor Absorbing driving guar Absorbing con	ommended ording to IEC60529, 508 VLos) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous	Min. 7 4.9	IP00	Max. 36 40	- Units V _{DC} V _{DC}	
Protection degree Logic Supply Inp	Record ULS ut (+ Nor Absorbing driving guar Absorbing con	ommended cording to IEC60529, 508 VLos) Ininal values colute maximum values, e operating but outside ranteed parameters colute maximum values, titinuous colute maximum values,	Min. 7 4.9	IP00	Max. 36 40	- Units V _{DC} V _{DC}	
Protection degree Logic Supply Inp	Nor Abs driv gua Abs con Abs	ommended cording to IEC60529, 508 VLos) Ininal values colute maximum values, e operating but outside ranteed parameters colute maximum values, titinuous colute maximum values,	Min. 7 4.9 -0.7	IP00	Max. 36 40 42	- Units VDC VDC VDC	
Protection degree Logic Supply Inp	Nor Abs driv gua Abs con Abs surg (dur	ommended cording to IEC60529, 508 VLo6) ninal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous co	Min. 7 4.9 -0.7	125	Max. 36 40 42 +45	- Units VDC VDC VDC	
Protection degree Logic Supply Inp	Record Accounts (Head Street Accounts Absoluted Absolute Absoluted Absolute	ommended cording to IEC60529, 508 V.co minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge aration ≤ 10ms) toos = 7V cos = 12V	Min. 7 4.9 -0.7	125 80	Max. 36 40 42 +45 300 200	- Units VDC VDC VDC	
Protection degree Logic Supply Inp Supply voltage	Record Accounts (Account (Acco	ommended cording to IEC60529, 508 VLos) ininal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, eration ≤ 10ms) cos = 7V cos = 7V cos = 12V cos = 24V	Min. 7 4.9 -0.7	125 80 50	Max. 36 40 42 +45 300 200 125	- Units VDC VDC VDC	
Protection degree Logic Supply Inp Supply voltage Supply current	recc Acc ULS ULS Wit (+ Non Abs driv gua Abs con Abs surg (dul +VL +VL +VL	ommended cording to IEC60529, 508 VLoc) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous co	Min. 7 4.9 -0.7 -1	125 80 50 40	Max. 36 40 42 +45 300 200 125 100	Units Vbc Vbc Vbc	
Protection degree Logic Supply Inp Supply voltage	record Accord Absolute (dull +VL	ommended cording to IEC60529, 508 VLos) ininal values colute maximum values, e operating but outside ranteed parameters colute maximum values, titinuous colute maximum values, et outside ranteed parameters colute ranteed	Min. 7 4.9 -0.7 -1	125 80 50	Max. 36 40 42 +45 300 200 125 100 Max.	Units Vbc Vbc Vbc	
Protection degree Logic Supply Inp Supply voltage Supply current	Record Accord Accord Accord Accord Absolute (Accord Absolute Absol	ommended cording to IEC60529, 508 VLoc) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous co	Min. 7 4.9 -0.7 -1	125 80 50 40	Max. 36 40 42 +45 300 200 125 100	Units Vbc Vbc Vbc	
Protection degree Logic Supply Inp Supply voltage Supply current	Account (4 Normal Absolute (4 No	ommended cording to IEC60529, 508 V.co minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge ration ≤ 10ms) † cos = 7V cos = 12V cos = 24V cos = 40V V.mor) minal values colute maximum values, e operating but outside	Min. 7 4.9 -0.7 -1	125 80 50 40	Max. 36 40 42 +45 300 200 125 100 Max.	Units Vbc Vbc Vbc	
Protection degree Logic Supply Inp Supply voltage Supply current	Acc UL£ Ut (+ Nor Abs driv (du + VL + VL + VL (+ Nor Abs driv guar (du transporter to the	ommended cording to IEC60529, 508 VLoa) Numinal values colute maximum values, e operating but outside ranteed parameters colute maximum values, titinuous colute maximum values, editionuous	Min. 7 4.9 -0.7 -1 Min. 9 8.5	125 80 50 40	Max. 36 40 42 +45 300 200 125 100 Max. 36 40	Units VDC	
Protection degree Logic Supply Inp Supply voltage Supply current Motor Supply Inp	recconductor Accounts of the conductor Accounts of the conductor Absolute of the conductor Absolute of the conductor of the c	ommended cording to IEC60529, 508 V.co minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, gre ration ≤ 10ms) cos = 7V cos = 7V cos = 24V cos = 24V cos = 40V V.Mor1 minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous	Min. 7 4.9 -0.7 -1 Min. 9	125 80 50 40	Max. 36 40 42 +45 300 200 125 100 Max. 36	Units VDC VDC VDC VDC VDC VDC VDC VDC VDC	
Protection degree Logic Supply Inp Supply voltage Supply current Motor Supply Inp	recconductor Accounts of the conductor Accounts of the conductor Absolute of the conductor Absolute of the conductor of the c	ommended cording to IEC60529, 508 V.co ninal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge ration ≤ 10ms) colute maximum values, ge ration ≤ 10ms) voc = 7V voc = 12V voc = 24V voc = 24V voc = 40V V.mor) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values,	Min. 7 4.9 -0.7 -1 Min. 9 8.5 -0.7	125 80 50 40	Max. 36 40 42 +45 300 200 125 100 Max. 36 40 42	Units VDC	
Protection degree Logic Supply Inp Supply voltage Supply current Motor Supply Inp	record Account (Account (Accou	ommended cording to IEC60529, 508 V.co minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge aration ≤ 10ms) toge = 7V cos = 12V cos = 12V cos = 24V cos = 40V V.mor) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous	Min. 7 4.9 -0.7 -1 Min. 9 8.5	125 80 50 40 Typ.	Max. 36 40 42 +45 300 200 125 100 Max. 36 40 42 +45	Units VDC	
Protection degree Logic Supply Inp Supply voltage Supply current Motor Supply Inp	record Accord Accord Accord Accord Absolute (+VL +VL +VL +VL +VL Absolute A	ommended cording to IEC60529, 508 VLoc) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, toute maximum values, ge = 7V cos = 7V cos = 24V cos = 24V cos = 40V VMor) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous	Min. 7 4.9 -0.7 -1 Min. 9 8.5 -0.7	125 80 50 40 Typ .	Max. 36 40 42 +45 300 200 125 100 Max. 36 40 42 +45 5	Units VDC	
Protection degree Logic Supply Inp Supply voltage Supply current Motor Supply Inp	record Accord Absolute (duit +VL +VL +VL +VL +VL didle Absolute Ab	ommended cording to IEC60529, 508 V.co Ninal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge ration ≤ 10ms) toce = 7V coc = 12V coc = 24V coc = 24V coc = 40V V.mor) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge (duration ≤ 10ms) erating	Min. 7 4.9 -0.7 -1 Min. 9 8.5 -0.7	125 80 50 40 Typ.	Max. 36 40 42 +45 300 200 125 100 Max. 36 40 42 +45	Units VDC	
Protection degree Logic Supply Inp Supply voltage Supply current Motor Supply Inp Supply voltage	record Account (House	ommended cording to IEC60529, 508 V.co minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge ration ≤ 10ms) † cos = 7V cos = 12V cos = 12V cos = 24V cos = 40V V.mor) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, colute maximum values, tinuous colute maximum values, colute maximum values, tinuous colute maximum values, colute maximum values, colute maximum values, colute maximum values, colute maximum value, colute ma	Min. 7 4.9 -0.7 -1 Min. 9 8.5 -0.7 -1	125 80 50 40 Typ .	Max. 36 40 42 +45 300 200 125 100 Max. 36 40 42 +45 5 +10	Units Vbc	
Protection degree Logic Supply Inp Supply voltage Supply current Motor Supply Inp Supply voltage	record Account (House	ommended cording to IEC60529, 508 VLos) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge ration ≤ 10ms) vos = 12V vos = 24V vos = 24V vos = 40V VMor) minal values colute maximum values, e operating but outside ranteed parameters colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, tinuous colute maximum values, ge (duration ≤ 10ms) erating colute maximum value,	Min. 7 4.9 -0.7 -1 Min. 9 8.5 -0.7 -1	125 80 50 40 Typ .	Max. 36 40 42 +45 300 200 125 100 Max. 36 40 42 +45 5	Units VDC	

Motor Outputs (A			-	Min.	Тур.	Max.	Units
	for DC brushed, BLDC motors w trapezoidal cont	ith Ha				4	
Nominal output current, continuous	for PMSM moto sinusoidal contr amplitude value	rs with ol (sir	nusoidal			4	A
	for PMSM motors with FOC sinusoidal control (sinusoidal effective value)					2.82	
Motor output current, peak	maximum 2.5s			-10		+10	Α
Short-circuit protection threshold	measurement ra	ange			±13	±15	А
Short-circuit protection delay				5	10		μS
On-state voltage drop	Nominal output including typical connector conta	l matir	ng		±0.3	±0.5	V
Off-state leakage current					±0.5	±1	mA
	Recommended		F _{PWM}	050			
	value, for currer	nt 40	0 kHz 0 kHz	250 120			1
	ripple max. ±5%		0 kHz	100			μН
	full range;		0 kHz	60			1
Motor inductance	$+V_{MOT} = 36 \text{ V}$		00 kHz	45			1
(phase-to-phase)		20	0 kHz	75			
	Minimum value,		0 kHz	25			
	limited by short- circuit protection		0 kHz	20			μН
	+V _{MOT} = 36 V	80	0 kHz	10			
			00 kHz	5			
	Recommended		0 kHz	250			4
Motor electrical	value for ±5%		0 kHz	125			
time-constant (L/R)	current measure-ment		0 kHz	100			μs
(2.1)	error		0 kHz 00 kHz	63 50			1
Current		10	00 kHz		±4	±8	%FS
Current measurement Digital Inputs	error FS = Full Scale	accur	00 kHz racy		±4 Typ.	±8 Max.	%FS Units
Current measurement Digital Inputs (IN0, IN1, IN2/LSF	error FS = Full Scale	accur	00 kHz racy	Min.	Typ.	Max. TL (3.3V)	Units / Open-
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance	FS = Full Scale P, IN3/LSN, IN4/E Input floating (w	accur Enable	00 kHz racy	Min.	Typ. MOS / LVT ctor / NPN	Max. TL (3.3V) / 24V out	Units / Open-
Current measurement Digital Inputs (IN0, IN1, IN2/LSF	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected)	accur Enable	00 kHz racy	Min.	Typ. MOS / LVT ctor / NPN Logic	Max. TL (3.3V) / 24V out HIGH	Units / Open-
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW"	accur Enable	00 kHz racy	Min. TTL / CN colle	Typ. MOS / LVT ctor / NPN Logic 0	Max. TL (3.3V) / 24V out	Units / Open-
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH"	accur Enable	00 kHz racy	Min.	Typ. MOS / LVT ctor / NPN Logic	Max. TL (3.3V) / 24V out HIGH	Units / Open-
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage	accur Enable	00 kHz racy	Min. TTL / CN colle	Typ. MOS / LVT ctor / NPN Logic 0	Max. TL (3.3V) / 24V out HIGH	Units / Open-
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH"	accur Enable viring	00 kHz racy	Min. TTL/CN colled	Typ. MOS / LVT ctor / NPN Logic 0 5÷24	Max. TL (3.3V) / 24V out HIGH 0.8	Units / Open-
Current measurement Digital Inputs (IN0, IN1, IN2/LSF Mode compliance Default state	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous	accur Enable riring e (not	00 kHz racy	Min. TTL / CN colle	Typ. MOS / LVT ctor / NPN Logic 0 5÷24	Max. TL (3.3V) / 24V out HIGH	Units / Open- puts
Current measurement Digital Inputs (IN0, IN1, IN2/LSF Mode compliance Default state	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim	accur Enable riring (not num, num, s	00 kHz racy	Min. TTL/CN colled	Typ. MOS / LVT ctor / NPN Logic 0 5÷24	Max. TL (3.3V) / 24V out HIGH 0.8	Units / Open- puts
Current measurement Digital Inputs (IN0, IN1, IN2/LSF Mode compliance Default state	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1S) Logic "LOW"; ul	accur Enable riring (not num, num, s	00 kHz racy e) surge	Min. TTL / Ch colle	Typ. MOS / LVT ctor / NPN Logic 0 5÷24	Max. TL (3.3V) / 24V out HIGH 0.8	Units / Open- puts
Current measurement Digital Inputs (IN0, IN1, IN2/LSF Mode compliance Default state Input voltage	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1 S) Logic "LOW"; ul Logic "HIGH"; Ir	accur Enable riring (not num, num, s	00 kHz racy e) surge	50 Min. TTL / CN colled	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40	Units / Open-puts
Current measurement Digital Inputs (IN0, IN1, IN2/LSF Mode compliance Default state	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1s) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3	accurring e (not num, sum, seled to neternal)	00 kHz racy a) Surge GND II 4.7ΚΩ	Min. TTL / Ch colle	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1	Units / Open- puts
Current measurement Digital Inputs (IN0, IN1, IN2/LSF Mode compliance Default state Input voltage	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 15) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; Ir	accurring e (not num, sum, sum, sum, sum, sum, sum, sum, s	00 kHz racy e) GND 14.7KΩ to +5V	50 Min. TTL / CN colled	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2	Units / Open-puts
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1s) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3	accurring e (not num, sum, sum, sum, sum, sum, sum, sum, s	00 kHz racy e) GND 14.7KΩ to +5V	Min. TTL / CN colle 2 -10 -20	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5	Units / Open-puts V
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 15) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; Ir	accurring e (not num, sum, sum, sum, sum, sum, sum, sum, s	00 kHz racy e) GND 14.7KΩ to +5V	50 Min. TTL / CN colled	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2	Units / Open-puts V mA
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 15) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; P Logic "HIGH"; P	accur Enable Inable	00 kHz racy e) GND 14.7KΩ to +5V	50 Min. TTL / CN colled 2 -10 -20 0 0 3.3	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5	Units / Open-puts V mA KHz µS
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse ESD protection	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1S) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; Ir	accur Enable Inable	00 kHz racy e) GND 14.7KΩ to +5V	50 Min. TTL / CN colle 2 -10 -20 0 3.3 ±5	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5 150	Units / Open-puts V mA KHz µS KV
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 15) Logic "LOW"; ul Logic "HIGH"; P Logic "HIGH"; P Logic "HIGH"; P Human body mo or, OUT3/ Ready	accur enable irining e (not num, s led to numerna ulled ulled	00 kHz racy e) GND 14.7KΩ to +5V	Min. TTL / Ch colle 2 -10 -20 0 3.3 ±5 Min.	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ.	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5 150 Max.	Units / Open-puts V mA KHz µS KV Units
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse ESD protection Digital Outputs (OUT0, OUT2/Err Mode	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 15) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; P Logic "HIGH"; P Human body mo or, OUT3/ Ready All outputs (OUT) OUT2/Error, OUT2	accur ac	00 kHz racy surge GND II 4.7KΩ to +5V to +24V	50 Min. TTL/CN colle 2 -10 -20 0 3.3 ±5 Min. TTL/C	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ. MOS / Opp 22	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5 150 Max. en-collecte V	Wnits / Open-puts V mA KHz µS KV Units Units
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse ESD protection Digital Outputs (OUTO, OUT2/Err	error FS = Full Scale Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1s) Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; P Logic "HIGH"; P Logic "HIGH"; P Human body mo or, OUT3/ Ready All outputs (OU OUT2/Error, OL Ready, Error	accur Enable Finable Finabl	00 kHz racy surge GND II 4.7KΩ to +5V to +24V eady)	50 Min. TTL/CN colle 2 -10 -20 0 3.3 ±5 Min. TTL/C	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ.	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5 150 Max. en-collecte V	Wnits / Open-puts V mA KHz µS KV Units Units
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse ESD protection Digital Outputs (OUT0, OUT2/Err Mode	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim (duration ≤ 1S) Logic "HOH"; I Logic "HIGH"; F Logic "HIGH"; F Logic "HIGH"; P Human body mo or, OUT3/ Ready All outputs (OU' OUT2/Error, OL Ready, Error Not supplied (+')	accur Enable Finable Finabl	00 kHz racy surge GND II 4.7KΩ to +5V to +24V eady)	50 Min. TTL/CN colle 2 -10 -20 0 3.3 ±5 Min. TTL/C	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ. MOS / Opp 22	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5 150 Max. en-collectedV + LVTTL (4.0V)	Wnits / Open-puts V mA KHz µS KV Units Units
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse ESD protection Digital Outputs (OUT0, OUT2/Err Mode	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1S) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; P Human body mo or, OUT3/ Ready All outputs (OU OUT2/Error, OL Ready, Error Not supplied (+¹ or to GND)	accur Enable Indiana Indian	on kHz racy surge GND II 4.7KΩ to +5V to +24V eady) loating	50 Min. TTL/CN colle 2 -10 -20 0 3.3 ±5 Min. TTL/C	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ. MOS / Op- 22 as above High-Z (fi	Max. TL (3.3V) / 24V out HIGH	Wnits / Open-puts V mA KHz µS KV Units Units
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse ESD protection Digital Outputs (OUT0, OUT2/Err Mode	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1S) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; P Logic "HIGH"; P Human body mo or, OUT3/ Ready All outputs (OU OUT2/Error, OU Ready, Error Not supplied (+) or to GND) Immediately	iring e (not num, sum, sum, sum, sum, sum, sum, sum, s	on kHz racy surge GND II 4.7KΩ to +5V to +24V eady) loating	50 Min. TTL/CN colle 2 -10 -20 0 3.3 ±5 Min. TTL/C	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ. MOS / Ope 2e as above High-Z (i Logic "	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5 150 Max. en-collecte VV + LVTTL (floating) HIGH"	Wnits / Open-puts V mA KHz µS KV Units Units
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input current Input frequency Minimum pulse ESD protection Digital Outputs (OUT0, OUT2/Err Mode	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 1s) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; P Logic "HIGH"; P Human body mo or, OUT3/ Ready All outputs (OU OUT2/Error, OL Ready, Error Not supplied (+¹ or to GND) Immediately after power-	accur Enable Finable Finabl	on kHz racy surge GND II 4.7KΩ to +5V to +24V eady) loating	50 Min. TTL/CN colle 2 -10 -20 0 3.3 ±5 Min. TTL/C	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ. MOS / Op- 22 as above High-Z (fi	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5 150 Max. en-collecte VV + LVTTL (floating) HIGH"	Wnits / Open-puts V mA KHz µS KV Units Units
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input voltage Input frequency Minimum pulse ESD protection Digital Outputs (OUTO, OUT2/Err Mode compliance	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim continuous Absolute maxim (duration ≤ 15) Logic "LOW"; ul Logic "HIGH"; Ir pull-up to +3.3 Logic "HIGH"; P Human body mo or, OUT3/ Ready All outputs (OU OUT2/Error, OU Ready, Error Not supplied (+) or to GND) Immediately after power- up	accur Enable Indiana Indian	Surge GND Il 4.7KΩ to +5V to +24V eady) loating D Z/Error, 3/ Ready 0,	50 Min. TTL/CN colle 2 -10 -20 0 3.3 ±5 Min. TTL/C	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ. MOS / Opp 22 as above High-Z (i Logic "	Max. TL (3.3V) / 24V out HIGH 0.8 +30 +40 1 0 0.2 2.5 150 Max. en-collecte VV + LVTTL (floating) HIGH" LOW"	Wnits / Open-puts V mA KHz µS KV Units Units
Current measurement Digital Inputs (INO, IN1, IN2/LSF Mode compliance Default state Input voltage Input voltage Input frequency Minimum pulse ESD protection Digital Outputs (OUTO, OUT2/Err Mode compliance	error FS = Full Scale P, IN3/LSN, IN4/E Input floating (w disconnected) Logic "LOW" Logic "HIGH" Floating voltage connected) Absolute maxim (duration ≤ 1S) Logic "HOH"; I Logic "HIGH"; F Logic "HIGH"; F Logic "HIGH"; F Logic "HIGH"; P Cor, OUT3/ Ready All outputs (OU' OUT2/Error, OL Ready, Error Not supplied (+' or to GND) Immediately after power- up	accur Enable In the content of the	e) Surge GND 14.7KΩ to +5V to +24V eady) loating 02/Error, 3/ Ready	50 Min. TTL/CN colle 2 -10 -20 0 3.3 ±5 Min. TTL/C	Typ. MOS / LVT ctor / NPN Logic 0 5÷24 3 0.6 0 0.15 2 Typ. MOS / Ope 2e as above High-Z (i Logic "	Max. TL (3.3V) / 24V out HIGH	Wnits / Open-puts V mA KHz µS KV Units Units

¹ Operating temperature can be extended up to +65°C with reduced current and power ratings.

² iPOS360x 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 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

Name	First edition	Document template: P099.TQT.564.0001	Last edition Visa :		
A. N. May 11, 2011			October 02, 2018	R. G.	
		Title of document	N° document		
TECHNOSOFT		TECHNOSOFT iPOS3604 MX-CAN			
	CHNOSOF I	iPOS3604 MX-CAN	P028.002.E101.DSH.10K.de	осх	



iPOS3604 MX-CAN DATASHEET P/N: P028.002.E101



	Logic "LOW"; o = 0.5A	utput current		0.2	0.8	
Output voltage	Logic "HIGH";	OUT2/Error, OUT3/ Ready	2.9	3	3.3	٧
	current = 0,	OUT0	4	4.5	5	
	Logic "HIGH", e	external load		V_{LOG}		
	Absolute maxin continuous	-0.5		V _{LOG} +0.5	V	
	Absolute maxin (duration ≤ 1S)		-1		V _{LOG} +1	
	Logic "LOW", si	ink current,			0.5	А
	continuous Logic "LOW", si	ink current,			1	А
Output current	pulse ≤ 5 sec. Logic "HIGH", source current;				2	mA
	external load to GND; V _{OUT} >= 2.0V	Ready OUT0			4	mA
	Logic "HIGH", locurrent; externation +VLog; Vout = V	al load to		0.1	0.2	mA
Minimum pulse width	1 1203, 1001 - 1	100 max = 40 V	2			μS
ESD protection	Human body m	odol	±5			KV
Digital Hall Inputs			Min.	Тур.	Max.	Units
Mode	5 (пант, пан z , г	ialis)				
compliance	lancat flantina		TTL	/ CMOS /	Open-colle	ector
Default state	Input floating (wiring disconne	ected)		Logic		ı
	Logic "LOW" Logic "HIGH"		2	<u>0</u> 5	0.8	
Input voltage	Floating voltage			4.4		V
,	(not connected) Absolute maxin	-10		+15		
	(duration ≤ 1S) Logic "LOW"; P	ull to GND	- 10		1.2	
Input current	Logic "HIGH"; In pull-up to +5		0	0	0	mA
Minimum pulse width			2			μS
ESD protection	Human body m	odel	±5			KV
Encoder Inputs (A/A+, A-, B/B+, I	B-, Z/Z+, Z)	Min.	Тур.	Max.	Units
Single-ended mode compliance	Leave negative disconnected	inputs	TTL	/ CMOS /	Open-colle	ector
Input voltage,	Logic "LOW"		4.0		1.6	
single-ended mode A/A+,	Logic "HIGH" Floating voltage	e (not	1.8	4.5		V
B/B+	connected) Logic "LOW"				1.2	
Input voltage, single-ended	Logic "HIGH"		1.4			V
mode Z/Z+	Floating voltage connected)	e (not		4.7		•
Input current,	Logic "LOW"; P	ull to GND		2.5	3	
single-ended mode A/A+, B/B+, Z/Z+	Logic "HIGH"; In pull-up to +5	nternal 2.2K Ω	0	0	0	mA
Differential mode compliance	For full RS422 see 1	compliance,		TIA/EIA	-422-A	
Input voltage,	Hysteresis		±0.06	±0.1	±0.2	
differential mode	Common-mode (A+ to GND, etc	c.)	-7		+7	V
Input impedance, differential	A+ to A-, B+ to Z+ to Z-	B-	4.2 6.1	4.7 7.2		ΚΩ
	Single-ended m	ode, Open-	0		500	KHz
Input frequency	Differential moderated driven by (TTL / CMOS)		0		10	MH z
Maria de la compansión de	Single-ended m		1			μS
Minimum pulse width	Differential mode ended driven by (TTL / CMOS)	de, or Single-	50			nS
	,					

Input voltage, any pin to GND					
	Absolute maximum values,	-7		+7	
any pin to GND	continuous				V
'	Absolute maximum, surge	-11		+14	,
FOD	(duration ≤ 1S) †				10.7
ESD protection Linear Hall Inputs	Human body model	±1 Min.	T	Man	KV Units
Linear Hail Inputs	· · · · · · · · · · · · · · · · · · ·		Typ.	Max.	V
	Operational range Absolute maximum values.	0	0.5÷4.5	4.9	V
Input voltage	continuous	-7		+7	
input voltage	Absolute maximum, surge				V
	(duration ≤ 1S) [†]	-11		+14	
Input current	Input voltage 0+5V	-1	±0.9	+1	mA
Interpolation	Depending on software			11	bits
Resolution	settings				
Frequency ESD protection	Human hadu madal	0 ±1		1	KHz KV
Sin-Cos Encoder	Human body model				
(Sin+, Sin-, Cos+,		Min.	Тур.	Max.	Units
Input voltage,	Sin+ to Sin-, Cos+ to Cos-		1	1.25	V _{PP}
differential	·		•		VPP
<u> </u>	Operational range	-1	2.5	4	
Input voltage,	Absolute maximum values, continuous	-7		+7	.,
any pin to GND	Absolute maximum, surge				V
<u> </u>	(duration ≤ 1S)	-11		+14	
	Differential, Sin+ to Sin-,				
Input impedance	Cos+ to Cos- ²	4.2	4.7		ΚΩ
	Common-mode, to GND		2.2		ΚΩ
Resolution with	Software selectable, for one	2		10	bits
interpolation	sine/cosine period				
	Sin-Cos interpolation	0		450	KHz
Frequency	Quadrature, no interpolation	0		10	MH z
ESD protection	Human body model	±1			ΚV
Analog 05V Inp		Min.	Тур.	Max.	Units
	Operational range	0	,	4.95	
<u> </u>	Absolute maximum values,	-12		+18	
Input voltage	continuous	-12		+10	V
<u> </u>	Absolute maximum, surge			±36	
	(duration ≤ 1S) [†]			200	
Input impedance	To GND		30		ΚΩ
Resolution Integral linearity			12	±2	bits
Offset error			±2	±2 ±10	bits bits
Gain error			±1%	±3%	% FS ³
Bandwidth (-3dB)	Software selectable	0		1	KHz
ESD protection	Human body model	±5			KV
Axis ID Inputs (A	xisID 0, AxisID 1, AxisID 2)	Min.	Тур.	Max.	Units
			nected; St		
-vtornal	7 levels		/; 4.7KΩ to		
External connections	Llos to size DCB tracks	+5V; 2	2KΩ to GN		o +5V;
connections					A
connections Pin current	Use to size PCB tracks	3		±0.5	mA mW
connections Pin current $4.7K\Omega/22K\Omega$	Power rating	3		±0.5	mW
connections Pin current $4.7K\Omega/22K\Omega$ resistor	Power rating Torelance				mW %
Connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection	Power rating	±5	Typ	±5	mW % KV
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232	Power rating Torelance		Typ.	±5 Max.	mW %
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance	Power rating Torelance Human body model	±5 Min.	Typ.	±5 Max. -232-C	mW % KV Units
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232	Power rating Torelance Human body model Software selectable	±5		±5 Max. -232-C 115200	mW % KV
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate	Power rating Torelance Human body model	±5 Min.	TIA/EIA	±5 Max. -232-C 115200	mW % KV Units
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit	Power rating Torelance Human body model Software selectable 232TX short to GND	±5 Min. 9600	TIA/EIA	±5 Max. -232-C 115200	mW % KV Units
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection	Power rating Torelance Human body model Software selectable 232TX short to GND	±5 Min. 9600 ±2 Min.	TIA/EIA Guara	±5 Max232-C 115200 nteed Max.	mW % KV Units Baud KV Units
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection CAN-Bus Compliance	Power rating Torelance Human body model Software selectable 232TX short to GND Human body model	±5 Min. 9600 ±2 Min. ISO118	TIA/EIA Guara Typ.	±5 Max232-C 115200 nteed Max. 01v4.2 & 4	mW % KV Units Baud KV Units C2v3.0 Kbp
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection CAN-Bus	Power rating Torelance Human body model Software selectable 232TX short to GND Human body model Software selectable	±5 Min. 9600 ±2 Min.	TIA/EIA Guara Typ.	±5 Max232-C 115200 nteed Max. 01v4.2 & 4	mW % KV Units Baud KV Units 02v3.0
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection CAN-Bus Compliance	Power rating Torelance Human body model Software selectable 232TX short to GND Human body model Software selectable 1Mbps	±5 Min. 9600 ±2 Min. ISO118	TIA/EIA Guara Typ.	±5 Max232-C 115200 nteed Max. 01v4.2 & 4 1000 25	mW % KV Units Baud KV Units C2v3.0 Kbp
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection CAN-Bus Compliance	Power rating Torelance Human body model Software selectable 232TX short to GND Human body model Software selectable 1Mbps 800Kbps	±5 Min. 9600 ±2 Min. ISO118	TIA/EIA Guara Typ.	#5 Max232-C 115200 nteed Max. 01v4.2 & 4 1000 25 50	mW % KV Units Baud KV Units C2v3.0 Kbp
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection CAN-Bus Compliance Bit rate	Power rating Torelance Human body model Software selectable 232TX short to GND Human body model Software selectable 1Mbps 800Kbps 500Kbps	±5 Min. 9600 ±2 Min. ISO118	TIA/EIA Guara Typ.	±5 Max232-C 115200 nteed Max. 01v4.2 & 4 1000 25 50 100	mW % KV Units Baud KV Units 02v3.0 Kbp s
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection CAN-Bus Compliance Bit rate	Power rating Torelance Human body model Software selectable 232TX short to GND Human body model Software selectable 1Mbps 800Kbps 500Kbps ≤ 250Kbps	±5 Min. 9600 ±2 Min. ISO118	TIA/EIA Guara Typ. 998, CiA-30	±5 Max232-C 115200 nteed Max. 01v4.2 & 4 1000 25 50 1000 250	mW % KV Units Baud KV Units 02v3.0 Kbp s
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection CAN-Bus Compliance Bit rate Bus length Resistor	Power rating Torelance Human body model Software selectable 232TX short to GND Human body model Software selectable 1Mbps 800Kbps 500Kbps	±5 Min. 9600 ±2 Min. ISO118 125	TIA/EIA Guara Typ.	±5 Max232-C 115200 nteed Max. 01v4.2 & 4 1000 25 50 1000 250 -board	mW % KV Units Baud KV Units 02v3.0 Kbp s
connections Pin current 4.7ΚΩ/22ΚΩ resistor ESD protection RS-232 Compliance Bit rate Short-circuit ESD protection CAN-Bus Compliance Bit rate	Power rating Torelance Human body model Software selectable 232TX short to GND Human body model Software selectable 1Mbps 800Kbps 500Kbps 5250Kbps 8 250Kbps Between CAN-Hi, CAN-Lo	±5 Min. 9600 ±2 Min. ISO118 125	TIA/EIA Guara Typ. 398, CiA-30	±5 Max232-C 115200 nteed Max. 01v4.2 & 4 1000 25 50 100 250 -board); 1-195 &	mW % KV Units Baud KV Units 02v3.0 Kbp s

 $^{^2}$ For many applications, an 120 $\!\Omega$ termination resistor should be connected across SIN+ to SIN-, and across COS+ to COS-. Please consult the feedback device datasheet for confirmation. 3 "FS" stands for "Full Scale"

Name	First edition	Document template: P099.TQT.564.0001	Last edition	Visa:		
A. N.	May 11, 2011		October 02, 2018	R. G.		
		Title of document N° document				
(2) LE	CHNOSOFT	iPOS3604 MX-CAN	P028.002.E101.DSH.10K.dd	осх		
		PRODUCT DATA SHEET		Page: 3 of 4		

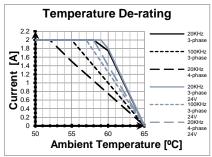
 $^{^1}$ For full RS-422 compliance, 120 $\!\Omega$ termination resistors must be connected across the differential pairs, as close as possible to the drive input pins.



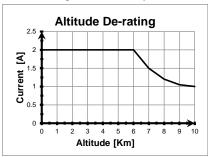
Supply Output (+5V)		Min.	Тур.	Max.	Units
Output voltage	Current sourced = 250mA	4.8	5	5.2	V
Output current		250	350		mA
Short-circuit		NOT protected			
Over-voltage		NOT protected			
ESD protection	Human body model	±1			KV

Conformity		Min.	Тур.	Max.	Units	
EU Declaration		2014/30/EU (EMC), 2014/35/EU (LVD), 2011/65/EU (RoHS), 1907/2006/EC (REACH), 93/68/EEC (CE Marking Directive),				
		EC 428/2009 (non dual-use item, output frequency limited to 590Hz)				

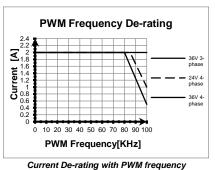
[†] Stresses beyond values listed under "absolute maximum ratings" may cause permanent damage to the device. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

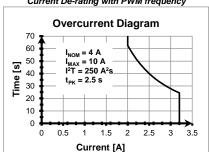


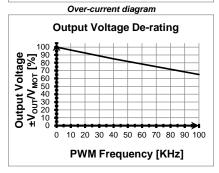
De-rating with ambient temperature



De-rating with altitude







Output Voltage De-rating with PWM frequency¹

 1 V_{OUT} – the output voltage, V_{MOT} – the motor supply voltage

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		Title of document	N° document	
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