Data Sheet

![motrona logo] safety - control - motion - interface

touchMATRIX® Indicator MX350 / MX355
Frequency counter, tachometer and speed indicator with touchscreen and graphic display

Product features:

- Multifunction unit with operating modes for incremental encoders (tachometer, pulse counter, position indicator)
  - Operating modes as frequency display and / or position display (pulse counter)
  - Universal incremental inputs (HTL / TTL / RS422) for NPN / PNP / NAMUR encoders and sensors
  - Functions such as links (eg A+B, A-B, ...), scaling, filters, start-up delay, ...
- Bright and high-contrast display with event controlled color variations
- Emulation of a 7-segment display inclusively icons and units
- Intuitive and easy parameterization by plain text and touchscreen
- 5 / 24 V auxiliary output for encoder supply
- Input frequencies up to 1 MHz
- Linearization with 24 interpolation points
  96 x 48 mm (3.78 x 1.89 inch) norm panel housing and IP65

Available options:

MX350:	Basic unit with HTL inputs (A, B), 3 control inputs
MX355:	Basic unit with HTL/RS422 inputs (A, /A, B, /B), 3 control inputs

- Option **AC:**   Power supply 115 … 230 VAC
- Option **AO:**   16 bit analog output, 4 control outputs, serial RS232 interface
- Option **AR:**   16 bit analog output, 4 control outputs, serial RS485 interface
- Option **CO:**   4 control outputs, serial RS232 interface
- Option **CR:**   4 control outputs, serial RS485 interface
- Option **RL:**   2 relay outputs

Options can be combined

Technical Specifications:		
Connections:	Connector type:	screw terminal, 1.5 mm² / AWG 16
Power supply (DC):	Input voltage:	18 … 30 VDC
	Protection circuit:	reverse polarity protection
	Consumption:	approx. 100 mA (unloaded)
	Fuse protection:	extern: T 0.5 A
Power supply (AC): (Option AC)	Input voltage:	115 … 230 VAC (50 … 60 Hz)
	Power consumption:	approx. 3 VA (unloaded)
	Fuse protection:	extern: T 0.1 A
Encoder supply:	DC version:	24 VDC (approx. 1 V lower than the power supply voltage), max. 250 mA
	AC version:	24 VDC (± 15%), (max. 150 mA until 45°C / 80 mA by more than 45°C)
Encoder supply: (MX355)	DC version:	24 VDC (approx. 1 V lower than the power supply voltage), max. 250 mA or 5 VDC (± 15%), max. 250 mA
	AC version	24 VDC (± 15%) (max. 150 mA until 45°C / 80 mA by more than 45°C) or 5 VDC (± 15%), max. 250 mA
Incremental inputs:	Number of inputs:	2 (A, B)
	Configuration:	PNP, NPN, Namur or Tri-State
	Format:	HTL (Low 0 … 3 V, High 9 … 30 V)
	Frequency:	max. 250 kHz
	Load:	max. 6 mA / Ri > 5 kOhm / 470 pF
Incremental inputs: (MX355)	Number of inputs:	2 with inverted signal (A, /A, B, /B)
	Configuration::	RS422, HTL differential, HTL PNP or HTL NPN
	RS422:	max. 1 MHz (RS422 differential signal > 0,5 V)
	HTL differential	max. 500 kHz (HTL differential signal > 2 V)
	HTL PNP / NPN:	max. 250 kHz (Low 0 … 3 V, High 9 … 30 V)
	Load:	max. 3 mA / Ri > 10 kOhm / 47 pF
Accuracy:	Measurement:	+/- 50 ppm, +/- 1 digit
Control inputs:	Number of inputs:	3
	Format:	HTL, PNP (Low 0 … 3 V, High 9 … 30 V)
	Frequency:	max. 10 kHz
	Load:	max. 2 mA / Ri > 15 kOhm / 470 pF
Analog output: (Option AO/AR)	Configuration:	current or voltage operation
	Voltage output:	-10…+10 V (max. 2 mA)
	Current output:	0/4 … 20 mA (burden: max. 270 Ohm)
	Resolution:	16 Bit
	Accuracy:	± 0,1 %
	Reaction time:	< 150 ms
Control outputs: (Option AO/AR/CO/CR)	Number of outputs:	4
	Format / level:	5 … 30 V (depend on COM+ voltage), PNPc
	Output current:	max. 200 mA
	Reaction time:	< 1 ms
Relay outputs: (Option RL)	Number of outputs:	2
	Configuration:	potential free changeovers
	AC-Switching capacity:	max. 250 VAC / 3 A / 750 VA
	DC-Switching capacity	max. 150 VDC / 2 A / 50 W
	Reaction time:	< 20 ms
Serielle Schnittstelle: (Option AO/AR/CO/CR)	Format (Option A0/CO):	RS232
	Format (Option AR/CR)	RS485
	Baudrate:	9600, 19200 oder 38400 Baud
Display:	Type:	Graphic LCD with backlight
	Display range:	8 digits plus sign (-99999999 … 99999999)
	Digit height	13 mm height
	Color:	red / green / yellow (selectable)
	Operation:	resistive touchscreen
Housing:	Material:	ABS, UL 94 V-0
	Mounting:	panel
	Dimensions (w x h x d):	96 x 48 x 116 mm / 3.78 x 1.89 x 4.56 inch
	Cut out (w x h):	91 x 43 mm / 3.58 x 1.69 inch
	Protection class:	IP65 (front), IP20 (rear)
	Weight:	approx. 200 g
Ambient temperature:	Operation:	-20°C … +60°C / -4 … 140°F
	Storage:	-25°C … +70°C / -13 … 158°F
Conformity and standards:	EMC 2014/30/EU:	EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61326-1
	LV 2014/35/EU: (Only for option AC and RL)	EN 61010-1
	RoHS (II) 2011/65/EU	
	RoHS (III) 2015/863:	EN IEC 63000