

INSPIRED BY INNOVATION



PRODUCT RANGE

- Safety Monitors for Speed, Standstill, Direction of Rotation
- Electronic Counters, Frequency Meters, Process Displays, Timer
- Autonomous Motion Controller
- Level Converters, Splitters and Switches, Signal Converters for Sensors and Encoders



motrona – always in motion

In the field of machine building our own future-oriented development of hard- and software make us a competent partner for complex applications in industrial automation and drive technology. We are a manufacturer of a unique range of electronic measuring devices, signal converters as well as process- and motion controllers. Our 35 years of market experience distinguishes us as reliable specialist providing professional support for your project development and problem solution.

Our state of the art production facilities have recently been expanded to accommodate growing demand which allows us to maintain a permanent stock of core products, ready for immediate delivery usually on the same working day the order is received.

Quite apart from a continually expanding product portfolio of safety devices, digital displays, controllers and signal converters, motrona offers a bespoke service of customer-specific solutions aided by a team well experienced in solution-finding. There is nothing our engineers relish more than a challenge!

We are internationally oriented and therefore represented worldwide. Our competent and long-term partners stand for maximum flexibility in consultation, problem solving and short product delivery.

This catalogue provides an overview of our product range. Further information, datasheets / operating instructions and software downloads can be found at www.motrona.com.

We are looking forward to hearing from you.

Your motrona team



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STRENGTHENED BY SAFETY

Safety Devices

The motrona range of SIL3 / PLe certified safety devices are intended to detect and monitor machine movements. The purpose is to protect the operator and machine by analyzing speed-, direction-, standstill and position and comparing with pre-selected limits.

For the requirements of increased security criteria according to DIN 61508 or EN ISO 13849 our SIL3 / PLe certified DS series offer maximum reliability and safety.

With an integrated analog output an additional signal is supplied that can be used as feedback for motion controllers.

All these devices and monitors are developed for an easy installation in control cabinets and by the flexible design they are suitable for retrofitting or inclusion in the existing design of an OEM equipment.

DS series:

The safe speed monitors for SinCos and incremental encoders / sensors



- Monitoring of overspeed, underspeed, standstill or rotative direction
- SIL3 / PLe or SIL2 / PLd certification
- Safety functions equivalent to EN 61800-5-2 (SSI, SS2, SOS, SLS, SDI, SSM, SLI, SBC, STO, SMS)
- USB port for easy parameterization via operator software OS6.0
- BG200 operator device for easy parameterization, data storage and operation- / error display (optional)



	DS230	DS236	DS240	DS246	DS250	DS260
SinCos inputs SIN+, SIN-, COS+, COS- [1 Vss]	2	2	1	1	-	-
Pulse inputs A, /A, B, /B [RS422]	2	2	-	-	-	-
Pulse inputs A, B, Z [HTL], A, /A, B, /B, Z, /Z [RS422, HTL]	-	-	-	-	2	1
Control inputs [HTL / PNP]	4	4	4	4	8	8
Input frequency up to	500 kHz					
Forced-guided redundant output relay (NO)	1	1	1	1	2	2
Control outputs short-circuit-proof, [HTL / Push-Pull]	4	4	4	4	4	4
Analog output 4 ... 20 mA (safety related), 14 Bit	1					
Power supply	18 ... 30 VDC					
Snap-on housing for top hat rail, B x H x T (mm)	50 x 100 x 165					

Application fields



Standstill / Overspeed

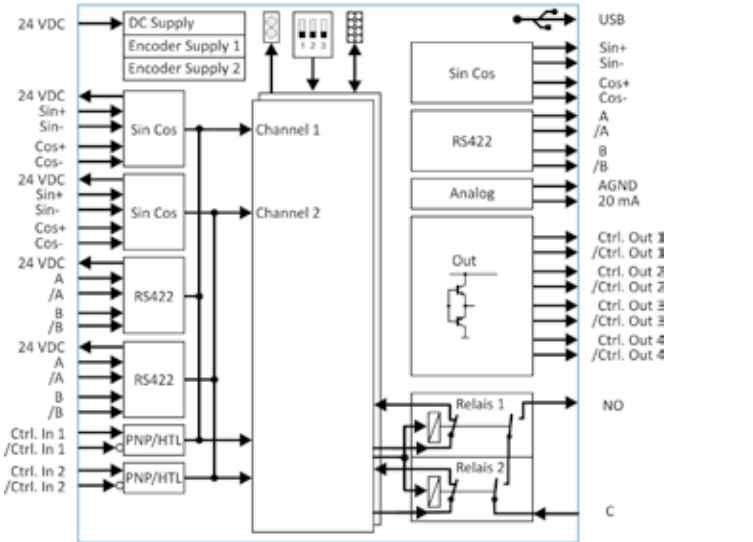


Overspeed

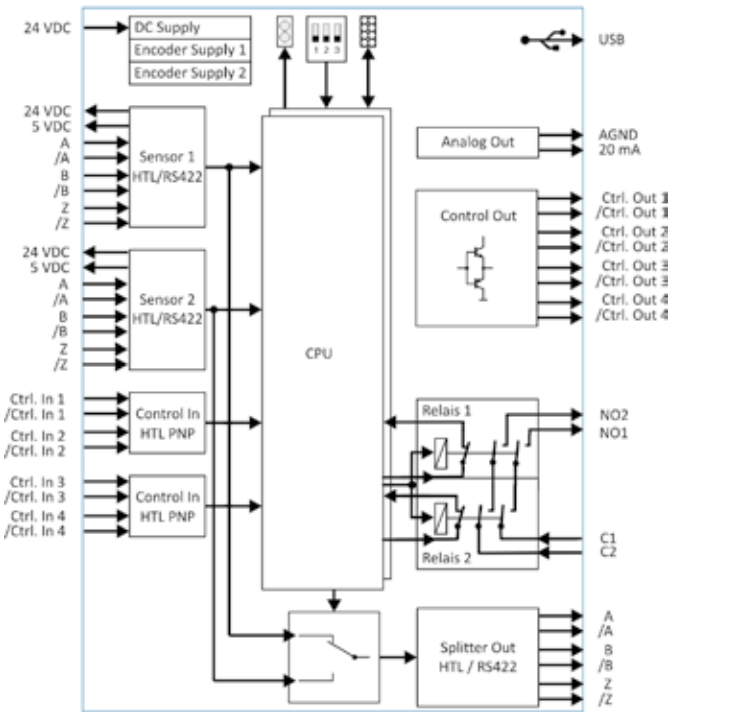


Underspeed

DS230



DS250



BG200:

Plug-in Display and programming unit



- Easy parameterization / visualization of the motrona safety devices
- Editing, saving and loading of parameters
- Individual scalable process or speed indicator as well as dual channel frequency indicator for visualization of the encoder frequency
- 1.54" OLED touchscreen with intuitive navigation

Monitors for Speed, Direction of Rotation and Standstill

Monitors for Speed, Direction of Rotation and Standstill

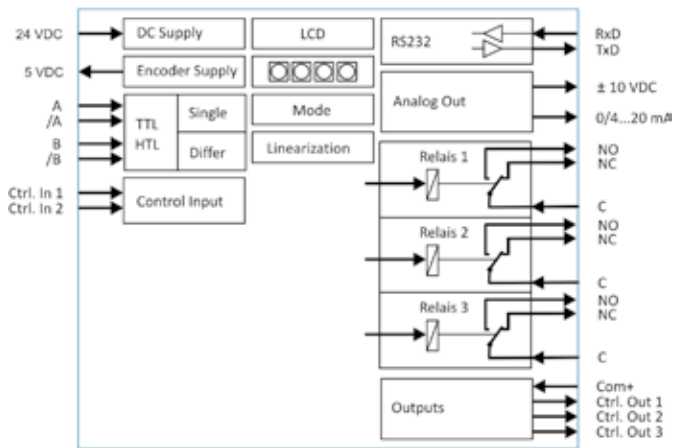
DZ series:

Speed monitors for incremental encoders / sensors



- Speed monitor with fast response time
- Monitoring of overspeed, underspeed (incl. start-up suppression), standstill and rotative direction
- Compact housing for mounting on 35 mm top hat rail (according to EN 60715)
- LCD-display, backlighted
- Setup via keys or via PC by serial RS232 interface

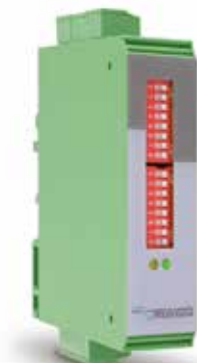
DZ260 - 269



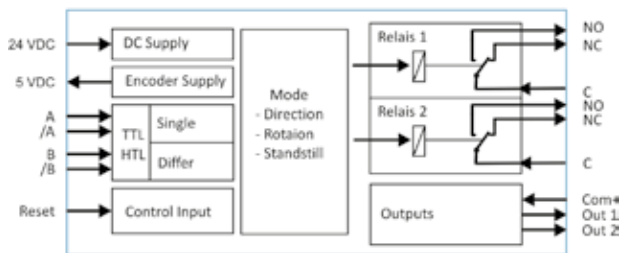
	DZ260	DZ261	DZ266	DZ267	DZ269
Pulse input A, B [HTL , TTL], A, /A, B, /B [RS422, HTL]	1	1	1	1	1
Input frequency up to	1 MHz				
Power supply	17 ... 30 VDC				
Relay outputs	3	-	-	3	-
Transistor outputs	-	3	-	-	3
Analog output	1	1	1	-	-
Snap-on housing for top hat rail, B x H x T (mm)	72 x 91 x 76				
LCD display, backlighted	✓	✓	✓	✓	✓
Serial RS232 / USB interface	✓	✓	✓	✓	✓
Setup via keys and user software OS6.0	✓	✓	✓	✓	✓

DZ210:

Direction and standstill monitor



- Fast, reliable standstill and speed monitor with variable settings
- High input frequency range
- Very fast response time (< 1 ms at f > 1 kHz)



	DZ210
Pulse input A, B [HTL , TTL]	1
Input frequency up to	500 kHz
Output relays with potential-free changeover contact (forward, reward and standstill)	2
Power supply	17 ... 30 VDC
DIL switch for setup of input characteristic and definition of standstill	✓
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102

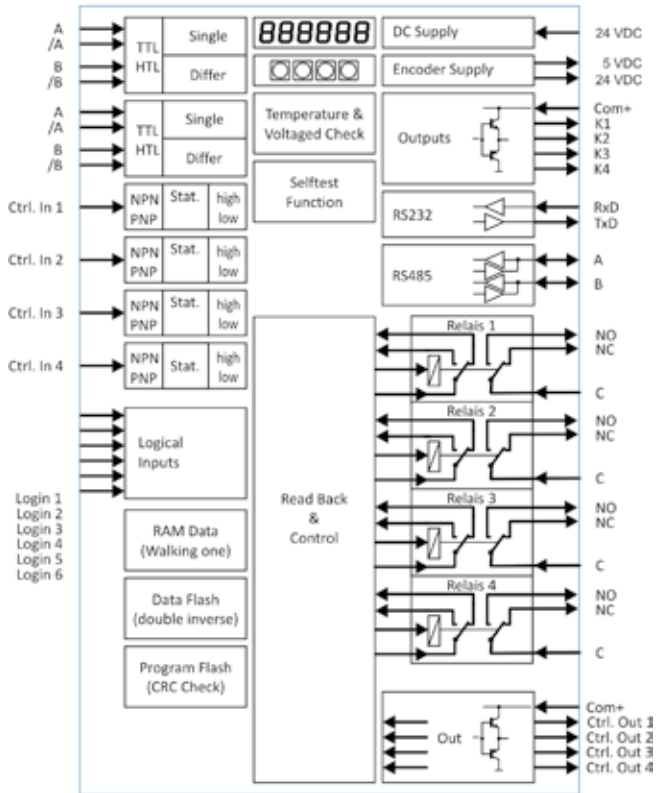
Monitor for Speed, Slip and Shaft Fracture

Monitor for Speed, Slip and Shaft Fracture

MS640: Motion monitor for secure and redundant control of two drive trains



- Measuring of the actual values directly on the drive and periphery
- Comparison between the programed target statuses and triggering the user-programed fault, if the movement is not run plausible or limits are exceeded
- Permanent measuring of the actual value on both encoders (speed, direction of rotation, standstill, actual position and differential positions)
- High level of external safety (Recognition of electrical or mechanical errors in the machinery /sensor systems / wiring etc.)
- High level of internal safety (Detection of internal errors and failures of device components)

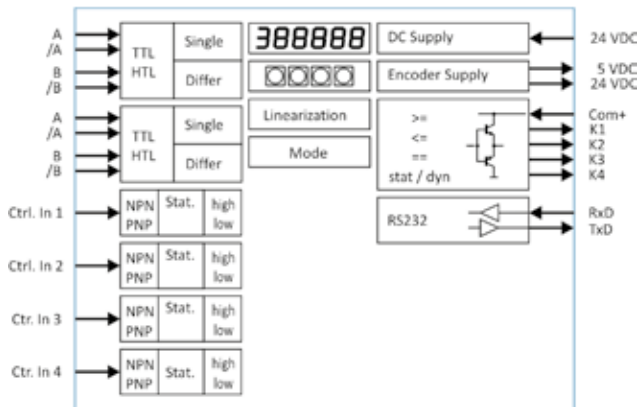


	MS640
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	2
Control inputs [HTL / PNP, HTL / NPN]	4
Logical inputs [HTL / PNP]	6
Input frequency up to	1 MHz
Control outputs short-circuit-proof, [HTL / Push-Pull]	4
Forced-guided redundant output relay	4
Power supply	24 VAC / 17 ... 40 VDC
6 digits LED display with mit 15 mm height, display range -199999 ... 999999	✓
Panel housing, B x H x T (mm)	110 x 48 x 140

ZD640: Position monitoring with 4 presets and output relays



- Display unit for position monitoring
- Suitable for monitoring misalignment, shaft breakage, torsion and slippage
- The slip monitor builds the difference between both encoders and compares these with signs including the 4 adjustable switching thresholds
- The 4 programmable limit values switch the output relays or transistor switch outputs depending on the position difference determined
- A connectable, time-controlled reset function allows the monitoring of slip with definable values for nominal slip



	ZD640
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	2
Control inputs [HTL / PNP, HTL / NPN]	4
Input frequency up to	1 MHz
Control outputs short-circuit-proof, [HTL / Push-Pull]	4
Forced-guided redundant output relay with potential free changeover contact	4
Power supply	24 VAC / 17 ... 40 VDC
6 digits LED display with mit 15 mm height, display range -199999 ... 999999	✓
Setup by keys or PC via serial RS232 interface	✓
Panel housing, B x H x T (mm)	110 x 48 x 140



COUNTED BY CONTROL



Digital- and touch**MATRIX**[®] Graphic Indicators

Our display and evaluation systems ensure a precise monitoring of analog, pulse and absolute value information. The significant parameters for rotating and linear processes are precisely monitored, evaluated and displayed.

The electronic and pulse counters, process and position indicators distinguish themselves by offering a high dynamic range, short response times and an input frequency up to 1 MHz. Our display devices are able to perform complex data manipulation such as summing, difference, filtering, linearization and totalization and comparison between input variables. Additionally, the digital displays provide up to four preset values for relay and transistor outputs. The set-up procedures are straightforward, using an intuitive menu system for entry and adjustment of parameters. Display devices equipped with a serial interface also allow operation and configuration using our OS user software.

DX series:

touchMATRIX® Digital counter

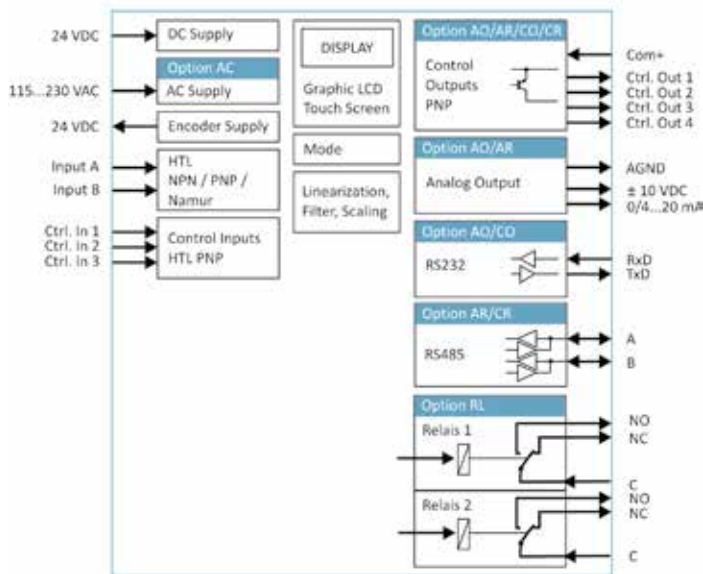


- Multifunction device with operating modes: position counter, event counter or sum / difference counter
- Various functions: Scaling, filter, start-up bypass, counter with edge evaluation (x1, x2, x4), adjustable pulse scaling and actual value memory
- 4 Preselection / limit values
- Linearization with 24 control points
- IP65 protection
- The 186 x 64 pixel graphic display enables emulation of a 7 segment display with freely editable symbols and units
- Intuitive and easy parameterization by plain text and touchscreen
- Bright and high-contrast display with event-dependent color variations

Options (can be combined):

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

DX350



ZX020:

Small-sized position or event counter



- Multi-functional counter in a compact design
- Including programmable pulse factor, power down memory, as well as numerous programmable operating modes, e. g. position counter, event counter or sum / differential counter
- 6 digits LED display with 8 mm
- Display range -199999 ... 999999

MX series:

touchMATRIX® Dual mode counter



- Digital tachometer with dual evaluation for incremental encoders or sensor signals
- For simultaneous measurement and display of two values, such as speed and length / piece
- Various functions: Scaling, filter, start-up bypass, counter with edge evaluation (x1, x2, x4), adjustable pulse scaling and actual value memory
- 4 Preselection / limit values
- Linearization with 24 control points
- IP65 protection

Options (can be combined):

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

	DX350	DX355	MX350	MX355	ZX020
Pulse input A, B [HTL]	1	-	1	-	1
Pulse input A, B [HTL], A, /A, B, /B [RS422, HTL]	-	1	-	1	-
Control inputs [HTL / PNP]	3	3	3	3	1
Input frequency up to	250 kHz	1 MHz	250 kHz	1 MHz	20 kHz
Power supply	17 ... 30 VDC	17 ... 30 VDC	17 ... 30 VDC	17 ... 30 VDC	10 ... 30 VDC
Auxiliary output for encoder supply	24 VDC	5 / 24 VDC	24 VDC	5 / 24 VDC	24 VDC
Panel housing, B x H x T (mm)	96 x 48 x 116	96 x 48 x 116	96 x 48 x 116	96 x 48 x 116	48 x 24 x 59
Optionally expandable	✓	✓	✓	✓	-

Application fields



Piece / length detection



Speed / Speedometer



Processing time / Timer

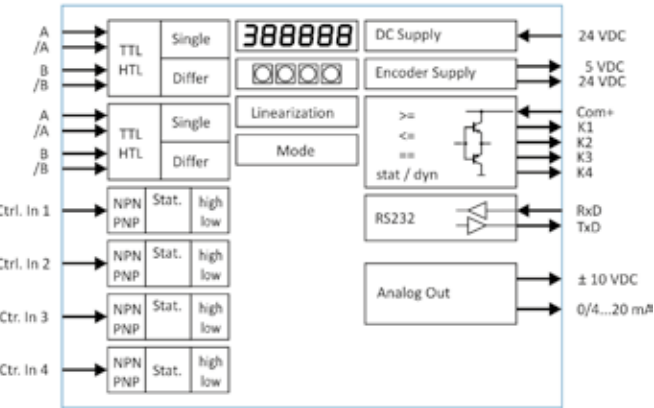
ZA / ZD series:

Multifunctional counter with 2 input frequencies



- Fast universal counters with a large selection of functions and operating modes such as single counter, totalizer and difference counter, measurement of actual cutting lengths, etc.
- Separately switchable linearization for each counter input
- Various versions with analog output, relay outputs and front thumbwheel switches available

ZA330 / 340 / 630 / 640

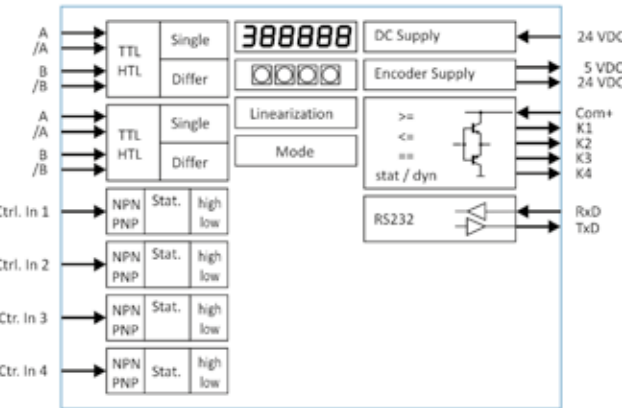


	ZA330	ZA340	ZD330	ZD340
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	2	2	2	2
Control inputs [HTL / PNP, HTL / NPN]	4	4	4	4
Input frequency up to	1 MHz			
Analog output ±10 V, 0/4 ... 20 mA, 14 Bit	1	1	-	-
Control outputs short-circuit-proof, [HTL / Push-Pull]	4	4	4	4
Forced-guided redundant output relay with potential free changeover contact	-	-	-	-
Programmable preset values	4	4	4	4
Preset counter with front-side selector switches	-	-	-	-
Power supply	24 VAC / 17 ... 40 VDC			
Panel housing,B x H x T (mm)	96 x 48 x 140			
6 digits LED display with mit 15 mm height, display range -199999 ... 999999	-	✓	-	✓
8 digits LED display with mit 10 mm height, display range -19999999 ... 99999999	✓	-	✓	-
Serial RS232 interface	✓	✓	✓	✓



- Variant 644 with 6 digit display

ZD330 / 340 / 630 / 640



ZD630	ZD632	ZD634	ZD640	ZD642	ZD644
2	2	2	2	2	2
4	4	4	4	4	4
1 MHz					
-	-	-	-	-	-
4	4	4	4	4	4
4	4	4	4	4	4
-	2	4	-	2	4
24 VAC / 17 ... 40 VDC					
96 x 96 x 140					
-	-	-	✓	✓	✓
✓	✓	✓	-	-	-
✓	✓	✓	✓	✓	✓

DX series:

touchMATRIX® Frequency display

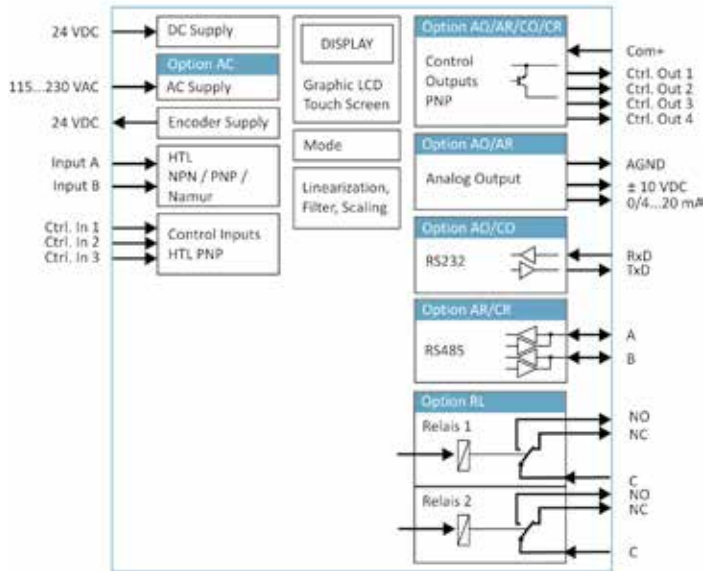


- Multifunction device with operating modes: speed controller, processing time, tachometer, timer for running times, stopwatch, speed from differential time
- Numerous functions: Scaling, filter, start-up bridging
- Signal evaluation of encoders, light barriers, proximity switches or length measuring systems
- 4 Preselection / limit values
- Linearization with 24 control points
- IP65 protection
- The 186 x 64 pixel graphic display enables emulation of a 7 segment display with freely editable symbols and units
- Intuitive and easy parameterization by plain text and touchscreen
- Bright and high-contrast display with event-dependent color variations

Options (can be combined):

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

DX350



DX020:

Small-sized tachometer for diverse measurement tasks



- Programmable indicator for reliable measurement of RPM, speed, frequency and many other measurements
- 6 digits LED display with 8 mm height
- Display range -199999 ... 999999

MX series:

touchMATRIX® Dual mode counter



- Digital tachometer with dual evaluation for incremental encoders or sensor signals
- For simultaneous measurement and display of two values, such as speed and length / piece
- Various functions: Scaling, filter, start-up bypass, counter with edge evaluation (x1, x2, x4), adjustable pulse scaling and actual value memory
- 4 Preselection / limit values
- Linearization with 24 control points
- IP65 protection

Options (can be combined):

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

	DX350	DX355	MX350	MX355	DX020
Pulse input A, B [HTL]	1	-	1	-	1
Pulse input A, B [HTL], A, /A, B, /B [RS422, HTL]	-	1	-	1	-
Control inputs [HTL / PNP]	3	3	3	3	1
Input frequency up to	250 kHz	1 MHz	250 kHz	1 MHz	20 kHz
Power supply	17 ... 30 VDC	17 ... 30 VDC	17 ... 30 VDC	17 ... 30 VDC	10 ... 30 VDC
Auxiliary output for encoder supply	24 VDC	5 / 24 VDC	24 VDC	5 / 24 VDC	24 VDC
Panel housing, B x H x T (mm)	96 x 48 x 116	96 x 48 x 116	96 x 48 x 116	96 x 48 x 116	48 x 24 x 59
Optionally expandable	✓	✓	✓	✓	-

Application fields



Piece / length detection



Speed / Speedometer



Processing time / Timer

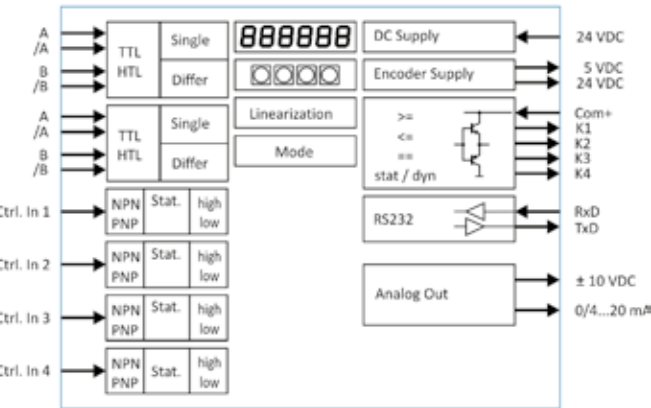
SA / SD series:

High performance display units with 2 sensor inputs



- Fast frequency displays with a large selection of functions and tachometer, speed and RPM counter as well as timer
- Indicates measurement results, times, sums, differences and speed ratios
- Separately switchable linearization for each counter input
- Various versions with analog output, relay outputs and front thumbwheel switches available

SA330 / 340 / 630 / 640

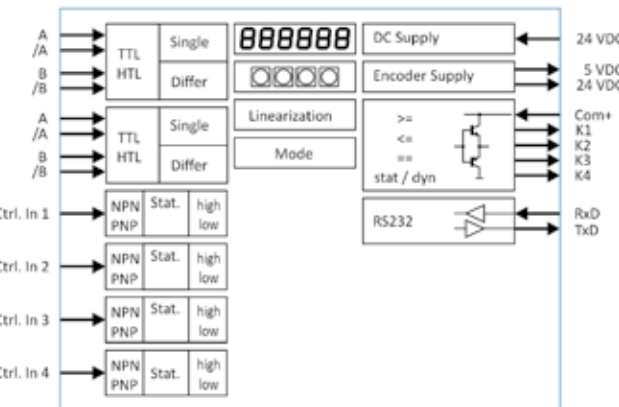


	SA330	SA340	SD330	SD340
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	2	2	2	2
Control inputs [HTL / PNP, HTL / NPN]	4	4	4	4
Input frequency up to	1 MHz			
Analog output ±10 V, 0/4 ... 20 mA, 14 Bit	1	1	-	-
Control outputs short-circuit-proof, [HTL / Push-Pull]	4	4	4	4
Forced-guided redundant output relay with potential free changeover contact	-	-	-	-
Programmable preset values	4	4	4	4
Preset counter with front-side selector switches	-	-	-	-
Power supply	24 VAC / 17 ... 40 VDC			
Panel housing, B x H x T (mm)	96 x 48 x 140			
6 digits LED display with mit 15 mm height, display range -199999 ... 999999	-	✓	-	✓
8 digits LED display with mit 10 mm height, display range -19999999 ... 99999999	✓	-	✓	-
Serial RS232 interface	✓	✓	✓	✓



- Variant 644 with 6 digit display

SD330 / 340 / 630 / 640



SD630	SD632	SD634	SD640	SD642	SD644
2	2	2	2	2	2
4	4	4	4	4	4
1 MHz					
-	-	-	-	-	-
4	4	4	4	4	4
4	4	4	4	4	4
4	4	4	4	4	4
-	2	4	-	2	4
24 VAC / 17 ... 40 VDC					
96 x 96 x 140					
-	-	-	✓	✓	✓
✓	✓	✓	-	-	-
✓	✓	✓	✓	✓	✓

IX series:

touchMATRIX® SSI indicators for absolute encoder

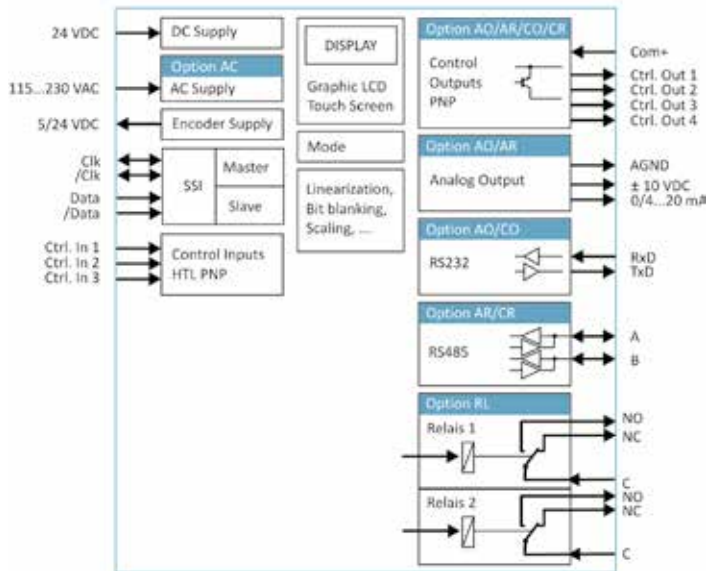


- Operations in master or slave with frequencies up to 1 MHz
- For single or multi turn encoder with 10 ... 32 Bit
- Various functions: filter, start-up bridging, free scalability and zero definition, programmable bit blanking, concentricity function
- 4 Preselection / limit values
- Linearization with 24 control points
- IP65 protection
- The 186 x 64 pixel graphic display enables emulation of a 7 segment display with freely editable symbols and units
- Intuitive and easy parameterization by plain text and touchscreen
- Bright and high-contrast display with event-dependent color variations

Options (can be combined):

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

IX350

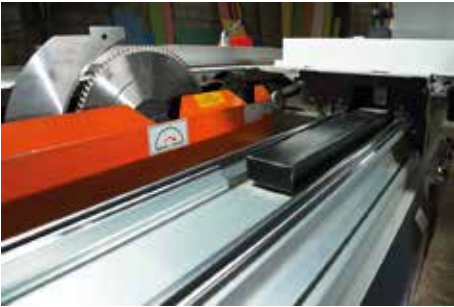


	IX350	IX355
SSI input CLOCK+, CLOCK-, DATA+, DATA- [RS422]	1	1
SSI clock frequency up to	1 MHz	1 MHz
Control inputs [HTL / PNP]	3	3
Power supply	18 ... 30 VDC	18 ... 30 VDC
Auxiliary output for encoder supply	5 / 24 VDC	5 / 24 VDC
Operating mode as Master / Slave	✓	✓
SSI scaling, bit blanking, round loop	✓	✓
Wire break monitoring of the SSI data line	-	✓
Panel housing, B x H x T (mm)	96 x 48 x 116	96 x 48 x 116
Optionally expandable	✓	✓

Application fields



Position measurement



Length measurement



Angle measurement

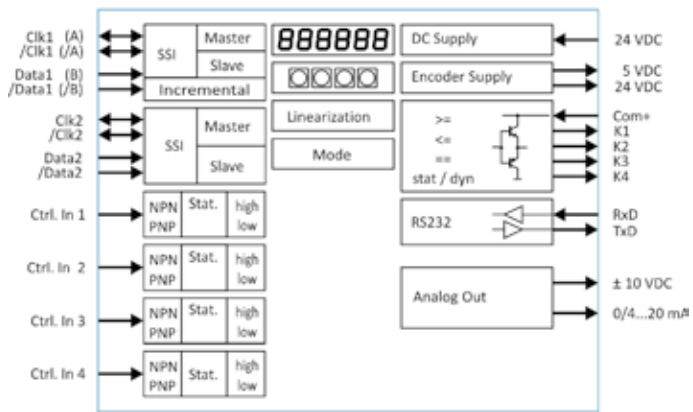
IA / ID series:

Position indicators with dual encoder inputs



- Position indicators with two universal encoder inputs (incremental and SSI) provide a variety of functions unique to incremental or SSI counters
- Evaluation of differences or sums
- Linking measured values of an incremental encoder with the measured values of an SSI absolute encoder
- Suitable for all 8-32 bit SSI formats
- Master- and slave operation possible
- Display with 6 or 8 decades possible

IA330 / 340 / 630 / 640

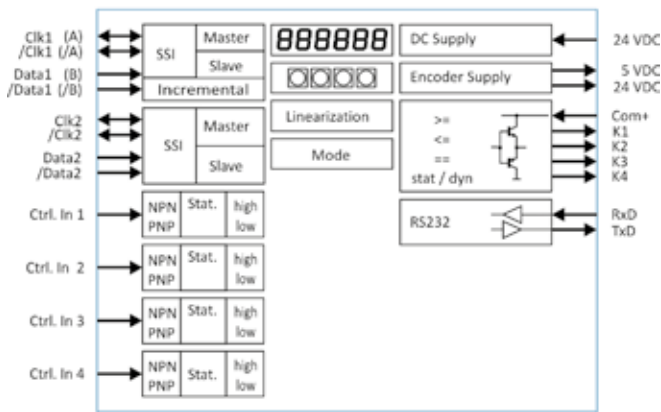


	IA330	IA340	ID330	ID340
SSI inputs CLOCK+, CLOCK-, DATA+, DATA- [RS422]	2	2	2	2
Control inputs [HTL / PNP, HTL / NPN]	4	4	4	4
Input frequency up to	1 MHz			
Analog output ± 10 V, 0/4 ... 20 mA, 14 Bit	1	1	-	-
Control outputs short-circuit-proof, [HTL / Push-Pull]	4	4	4	4
Forced-guided redundant output relay with potential free changeover contact	-	-	-	-
Programmable preset values	4	4	4	4
Preset counter with front-side selector switches	-	-	-	-
Power supply	24 VAC / 17 ... 40 VDC			
Panel housing, B x H x T (mm)	96 x 48 x 140			
6 digits LED display with mit 15 mm height, display range -199999 ... 999999	-	✓	-	✓
8 digits LED display with mit 10 mm height, display range -19999999 ... 99999999	✓	-	✓	-
Serial RS232 interface	✓	✓	✓	✓



- Variant 644 with 6 digit display

IA / ID / IR



ID630	ID632	ID634	ID640	ID642	ID644
2	2	2	2	2	2
4	4	4	4	4	4
1 MHz					
-	-	-	-	-	-
4	4	4	4	4	4
4	4	4	4	4	4
4	4	4	4	4	4
-	2	4	-	2	4
24 VAC / 17 ... 40 VDC					
96 x 96 x 140					
-	-	-	✓	✓	✓
✓	✓	✓	-	-	-
✓	✓	✓	✓	✓	✓

Process Indicators with analog input

Process Indicators with analog input

AX series:

touchMATRIX® Process indicators

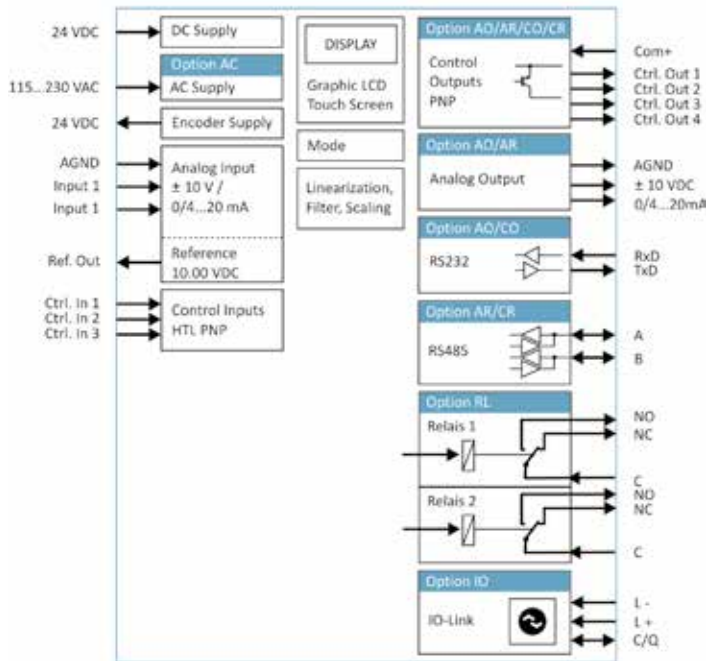


- Process indicators for two analog signals with various functions as linkage of the input signals (IN1 + IN2, IN1 - IN2, IN1 x IN2, IN1 : IN2), tare and average calculation, scaling, filter, start-up bridging
- Totalizator for each input
- 4 preselection / limit values
- Linearization with 24 control points
- IP65 protection
- The 186 x 64 pixel graphic display enables emulation of a 7 segment display with freely editable symbols and units
- Intuitive and easy parameterization by plain text and touchscreen
- Bright and high-contrast display with event-dependent color variations

Options (can be combined):

- AC: Power supply with 115 ... 230 VAC
- AO: 16 bit analog output, 4 control outputs, serial RS232 interface
- AR: 16 bit analog output, 4 control outputs, serial RS485 interface
- CO: 4 control outputs, serial RS232 interface
- CR: 4 control outputs, serial RS485 interface
- RL: 2 relay outputs
- IO: IO-Link Device V1.1

AX350



AX020:

Compact process indicators with analog input



- Miniature process indicator for analog norm signals
- 5 digits LED display with display range 8 mm
- Display range -19999 ... 99999, adjustable zero and end value
- Latch input to freeze the display, minimum / maximum record memory
- Easy to set up by only two front keys and menu support

	AX350	AX020
Analog inputs ± 10 V, 0/4 ... 20 mA	2 (16 Bit)	1 (14 Bit)
Control inputs [HTL / PNP]	3	1
Power supply	18 ... 30 VDC	10 ... 30 VDC
High accuracy reference output for potentiometer [10 VDC > 1 kOhm]	✓	-
Auxiliary output for encoder supply	24 VDC	24 VDC
Panel housing, B x H x T (mm)	96 x 48 x 116	48 x 24 x 59
Optionally expandable	✓	-

Application fields



Flow / mixing ratio



Filling level / pressure



Linear position measurement

SAFETY

CONTROL

MOTION

INTERFACE

DP350:

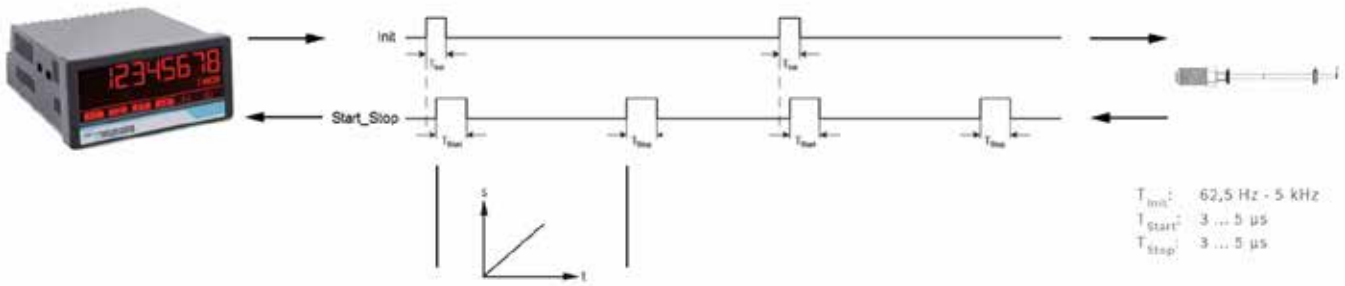
touchMATRIX® Indicator für transonic distance measurement



- For absolute and magnetostrictive displacement transducers with a start-stop interface
- Numerous functions: scaling, zero offset filter, counting direction
- Linearization with 24 control points
- IP65 protection
- The 186 x 64 pixel graphic display enables emulation of a 7 segment display with freely editable symbols and units
- Intuitive and easy parameterization by plain text and touchscreen
- Bright and high-contrast display with event-dependent color variations

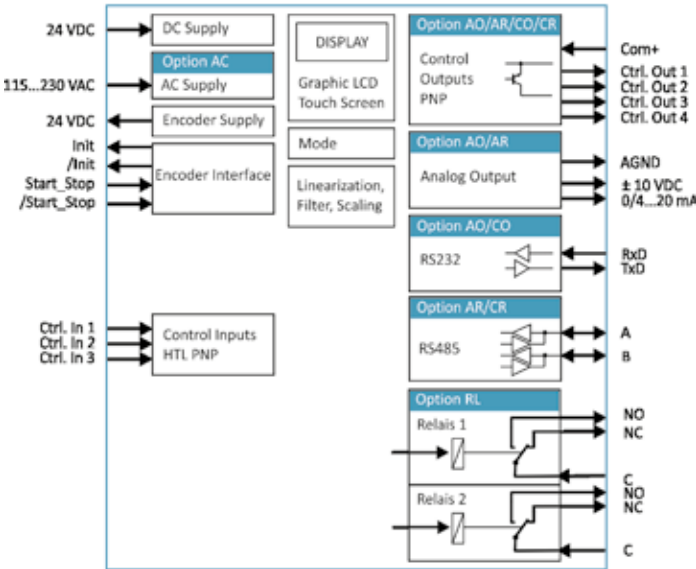
Options (can be combined):

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



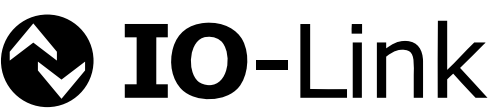
During the transonic measurement, the device sends an Init pulse to the encoder, whereupon the measurement is started. The encoder sends back a start and a stop pulse. The position can be calculated by the time between the start and stop pulse and the preset waveguide speed of the encoder. This method can be used for distances and also for angle measurement. The angles can also be displayed as angular minutes and angular seconds.

DP350



DP350

Start-stop interface RS485 input	1
Start-stop interface RS485 output	1
Control inputs	3
Power supply DC	18 ... 30 VDC
Power supply AC	115 ... 230 VDC, 50 ... 60 Hz
Auxiliary voltage output for encoder supply	5 V / 24 VDC
Panel housing, B x H x T (mm)	96 x 48 x 116
Optionally expandable	✓



AX350/IO:

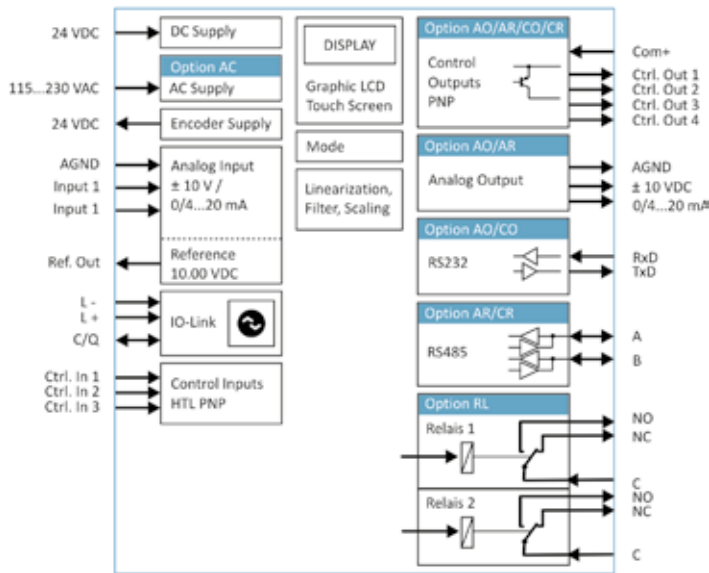
touchMATRIX® IO-Link indicator



- Decentralized indicator for displaying two process data
- Wide range of features like limit value monitoring and analog output optional available, tare, average calculation, scaling, filter, start-up bridging
- Process data IN 32 Byte and process data OUT 8 Byte
- 4 Preselection / limit values
- Linearization with 24 control points
- The 186 x 64 pixel graphic display enables emulation of a 7 segment display with freely editable symbols and units
- Intuitive and easy parameterization by plain text and touchscreen
- Bright and high-contrast display with event-dependent color variations

Options (can be combined):

- AC: Power supply with 115 ... 230 VAC
- AO: 16 bit analog output, 4 control outputs, serial RS232 interface
- AR / CR: As option AO / CO with serial RS485 interface
- CO: 4 control outputs, serial RS232 interface
- RL: 2 relay outputs



	AX350/IO
IO-Link-Device V1.1, expandable by further options	✓
COM3 data transfer	230,4 kBaud
Cycle times	< 3 msec
Analog inputs ±10 V, 0/4 ... 20 mA, 16 Bit	2
Control inputs [HTL / PNP]	3
Power supply	18 ... 30 VDC
High accuracy reference output for potentiometer [10 VDC > 1 kOhm]	✓
Auxiliary output for encoder supply	24 VDC
Panel housing, B x H x T (mm), IP65	96 x 48 x 116

CA340:

CAN Bus indicator



- Decentralized digital display for all process values available on the CAN-Bus
- Visualization of individual parameters or process data in plants that are networked via a CAN Bus (e. g. display and specification of speed values)
- This "on-site" digital display is suitable for all process values available on the CAN Bus up to 6 digits
- The device works with both PDO and SDO objects

CA306:

CAN Bus data input



- Simple devices with BCD thumbwheel switches for remote adjustment of individual parameters via the fieldbus interface
- By pressing the ENTER button on the front, the adjusted value is transmitted to the desired target unit
- Setting range 6 decades or 5 decades with sign

CA541:

CAN Bus indicator with data input



- Combination of a 6-digit display for visualization of numerical information as well as a 6 decade remote setting for the transmission of input values (e. g. set point speed or set point) and parameters within a CANopen fieldbus network.
- The unit communicates on the CANopen parameter channel and accesses adjustable code positions of any bus subscriber
- While arbitrary set points can be switched to the CAN Bus via the 6-digit remote adjustment, the current actual value of the same or another code point can be visualized on the 6 decade LED display

	CA340	CA306	CA541
Power supply	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Panel housing, B x H x T (mm)	96 x 48 x 140	96 x 48 x 140	96 x 72 x 140
6 digits LED display with mit 15 mm height, display range -199999 ... 999999	✓	-	✓
DIL switch for setting the transmission parameters	✓	✓	✓
CAN Bus interface [SDO, PDO]	✓	✓	✓
Thumbwheel switch	-	✓	✓



Motion

Our Motion Controllers are implemented in numerous applications in the field of modern drive technology.

The firmware library includes optimized routines for applications such as drive synchronization, index or intermitted printing, label-printing, rotary cutters, flying shears and eccentric scissors.

As other motrona products, the set-up procedures are simple and intuitive. The highly integrated Motion Controllers feature by a very high cut-off frequency up to 2 MHz, a very flexible bus architecture as well as a variable input configuration of encoders and sensors.

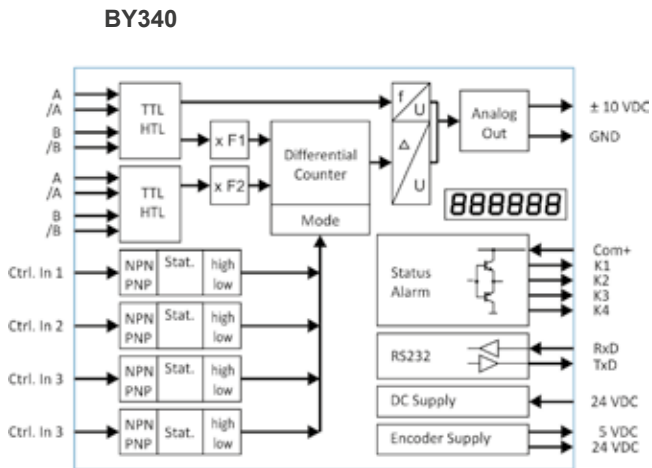
A unique feature of the MC800 drive controller is the integrated tandem drive controller which enables achieving the acceleration requirement of a slave axis by distributing the power on two independent drives.

BY340 / BY641:

High performance synchronizers for one slave axis



- Single-axis controllers with excellent control characteristics are suitable for use in smaller systems with tight cost specifications
- Applications are variable speed drives with an analog set point input
- Essential features of wide function range are e. g. an absolute angle or position synchronization as well as speed synchronization with adjustable ratios and phase angles. The trim and index functions allow the adjustment of the relative position between the axes



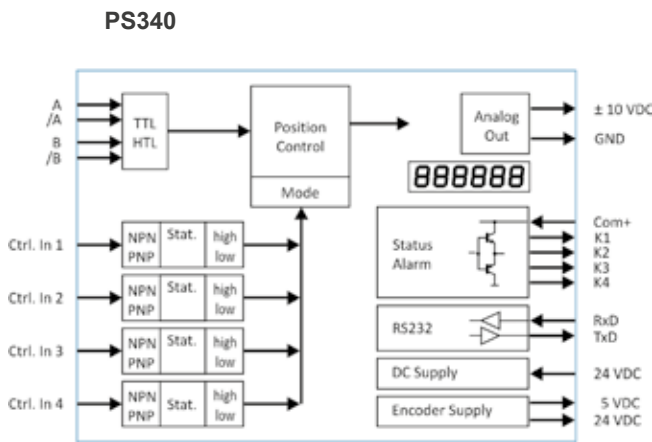
	BY340	BY641
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	2	2
Control inputs [HTL / PNP, HTL / NPN]	4	4
Input frequency up to	300 kHz	300 kHz
Control outputs short-circuit-proof, [HTL / Push-Pull]	4	4
Forced-guided redundant output relay with potential free changeover contact	-	4
Analog output ± 10 V, 0/4 ... 20 mA, 14 Bit	1	1
Loop time approx.	250 μ s	250 μ s
Power supply	24 VAC / 17 ... 40 VDC	
Snap-on housing for top hat rail, B x H x T (mm)	96 x 48 x 140	96 x 96 x 140
Front thumbwheel switches	-	✓
Setup by keys or PC via serial RS232 interface	✓	✓
PROFIBUS connction via motrona gateway PB251	✓	✓

PS340 / PS641:

Autonomous position controller for single axis applications



- Excellent price performance ratio, especially for operators of smaller machines
- A very short position loop time and intelligent calculation algorithms ensure the best precision
- For uniaxial applications with electric or hydraulic 4-Q drives, equipped with ± 10 V set point input
- Extremely smooth motion with minimum stress for all mechanical parts due to self-optimized polynomial motion profile
- Different operation modes e. g. absolute and relative (incremental) positons or loop mode



	PS340	PS641
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	2	2
Control inputs [HTL / PNP, HTL / NPN]	4	4
Input frequency up to	300 kHz	300 kHz
Control outputs short-circuit-proof, [HTL / Push-Pull]	4	4
Forced-guided redundant output relay with potential free changeover contact	-	4
Analog output ± 10 V, 0/4 ... 20 mA, 14 Bit	1	1
Loop time approx.	250 μ s	250 μ s
Power supply	24 VAC / 17 ... 40 VDC	
Snap-on housing for top hat rail, B x H x T (mm)	96 x 48 x 140	96 x 96 x 140
Front thumbwheel switches	-	✓
Setup by keys or PC via serial RS232 interface	✓	✓
PROFIBUS connction via motrona gateway PB251	✓	✓

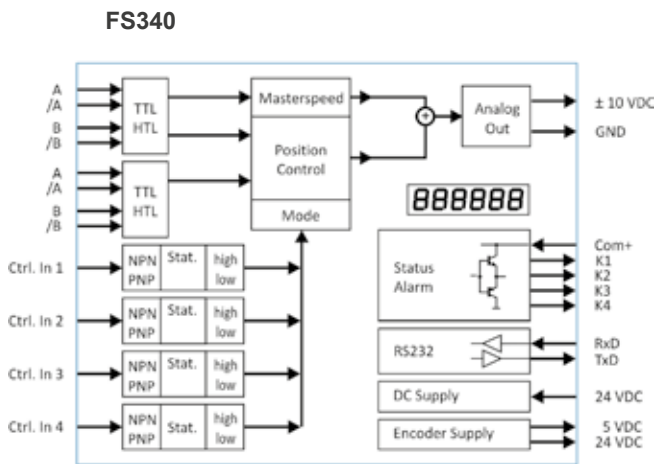
Controller for Flying Saw

FS340 / FS641:

High performance controller for flying saws and shears



- Specifically matched to the requirements of flying saws and shears
- Processing endless material that cannot be stopped during the cutting operation
- Maximum cutting performance and precision combined with high protection for the mechanical parts.
- The short position control cycle and the intelligent calculation algorithms are further essential advantages of these controllers



	FS340	FS641
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	2	2
Control inputs [HTL / PNP, HTL / NPN]	4	4
Input frequency up to	300 kHz	300 kHz
Control outputs short-circuit-proof, [HTL / Push-Pull]	4	4
Forced-guided redundant output relay with potential free changeover contact	-	4
Analog output ±10 V, 0/4 ... 20 mA, 14 Bit	1	1
Loop time approx.	250 µs	250 µs
Power supply	24 VAC / 17 ... 40 VDC	
Snap-on housing for top hat rail, B x H x T (mm)	96 x 48 x 140	96 x 96 x 140
Front thumbwheel switches	-	✓
Setup by keys or PC via serial RS232 interface	✓	✓
PROFIBUS connction via motrona gateway PB251	✓	✓

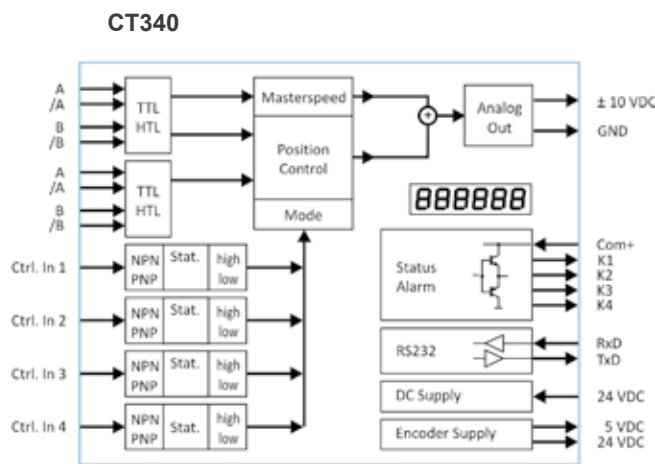
Controller for Rotary Cutters and Printing Rolls

CT340 / CT641:

Controller for rotary cutters and printing rolls



- Precision controller for applications of rotation cutters and rotating printing, stamping or sealing rollers
- Processing of endless that cannot be stopped during the cutting operation
- Short control response ensures high dynamic performance and precise cutting (even during speed changes)
- Maximum cutting performance and precision combined with high protection for the mechanical parts
- The short position control cycle and the intelligent calculation algorithms are further essential advantages of these controllers



	CT340	CT641
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	2	2
Control inputs [HTL / PNP, HTL / NPN]	4	4
Input frequency up to	300 kHz	300 kHz
Control outputs short-circuit-proof, [HTL / Push-Pull]	4	4
Forced-guided redundant output relay with potential free changeover contact	-	4
Analog output ±10 V, 0/4 ... 20 mA, 14 Bit	1	1
Loop time approx.	250 µs	250 µs
Power supply	24 VAC / 17 ... 40 VDC	
Snap-on housing for top hat rail, B x H x T (mm)	96 x 48 x 140	96 x 96 x 140
Front thumbwheel switches	-	✓
Setup by keys or PC via serial RS232 interface	✓	✓
PROFIBUS connction via motrona gateway PB251	✓	✓

MC700:

Universal motion controller up to 4 axes



- Universal and proven 1 to 4 axes motion controller, which can be cascaded for additional axes
- Mathematically optimized motion profiles and extremely short position control cycles guarantee high accuracy even at maximum speed
- In addition to the standard application as a multi-axis synchronizer, this controller is suitable especially for control tasks of motion profiles with flying material processing and for numerous movements of printing machines, packaging machines and winding equipment
- Function assignment of the controller by corresponding application firmware, that is available on the motrona website or on our product CD

MC800:

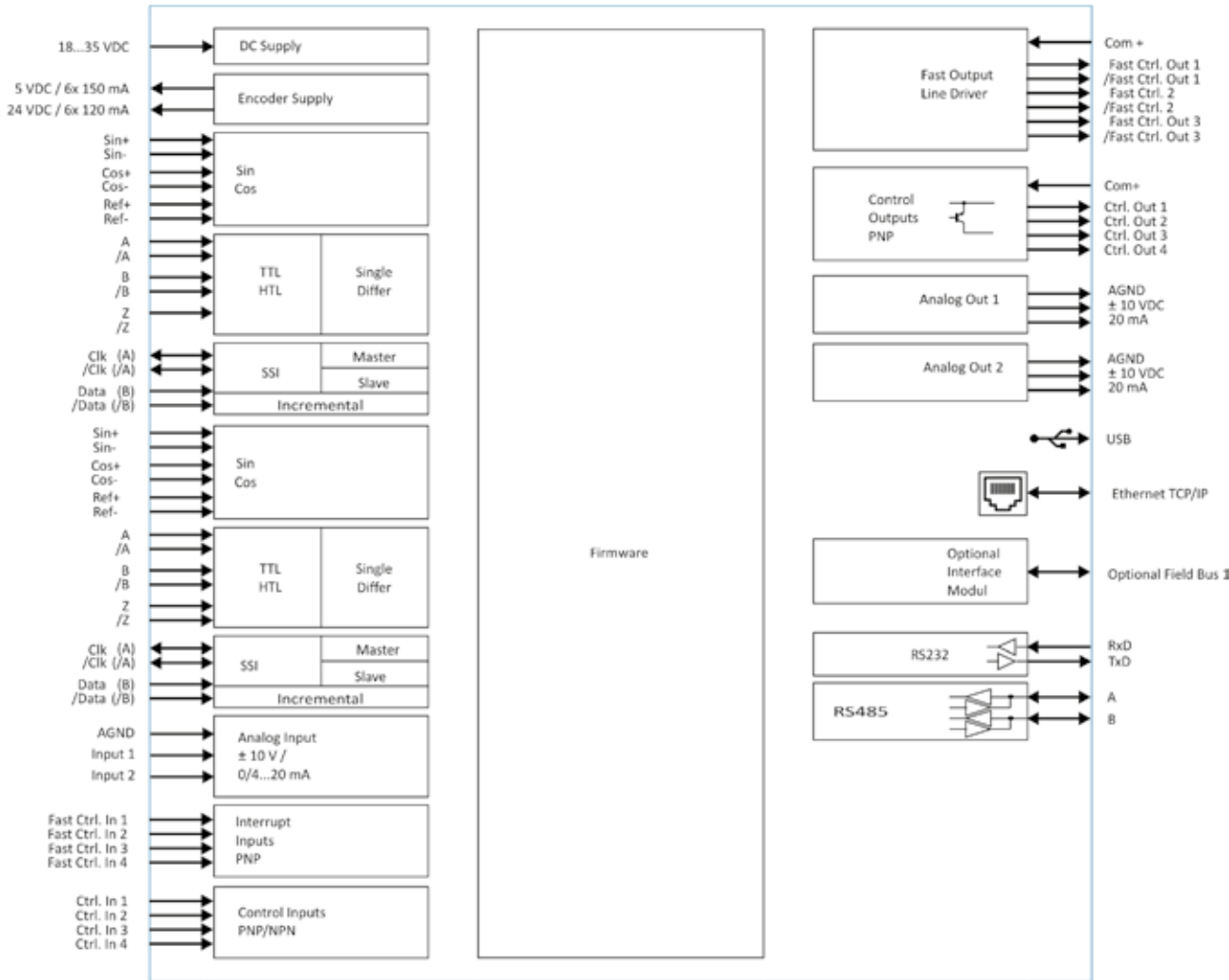
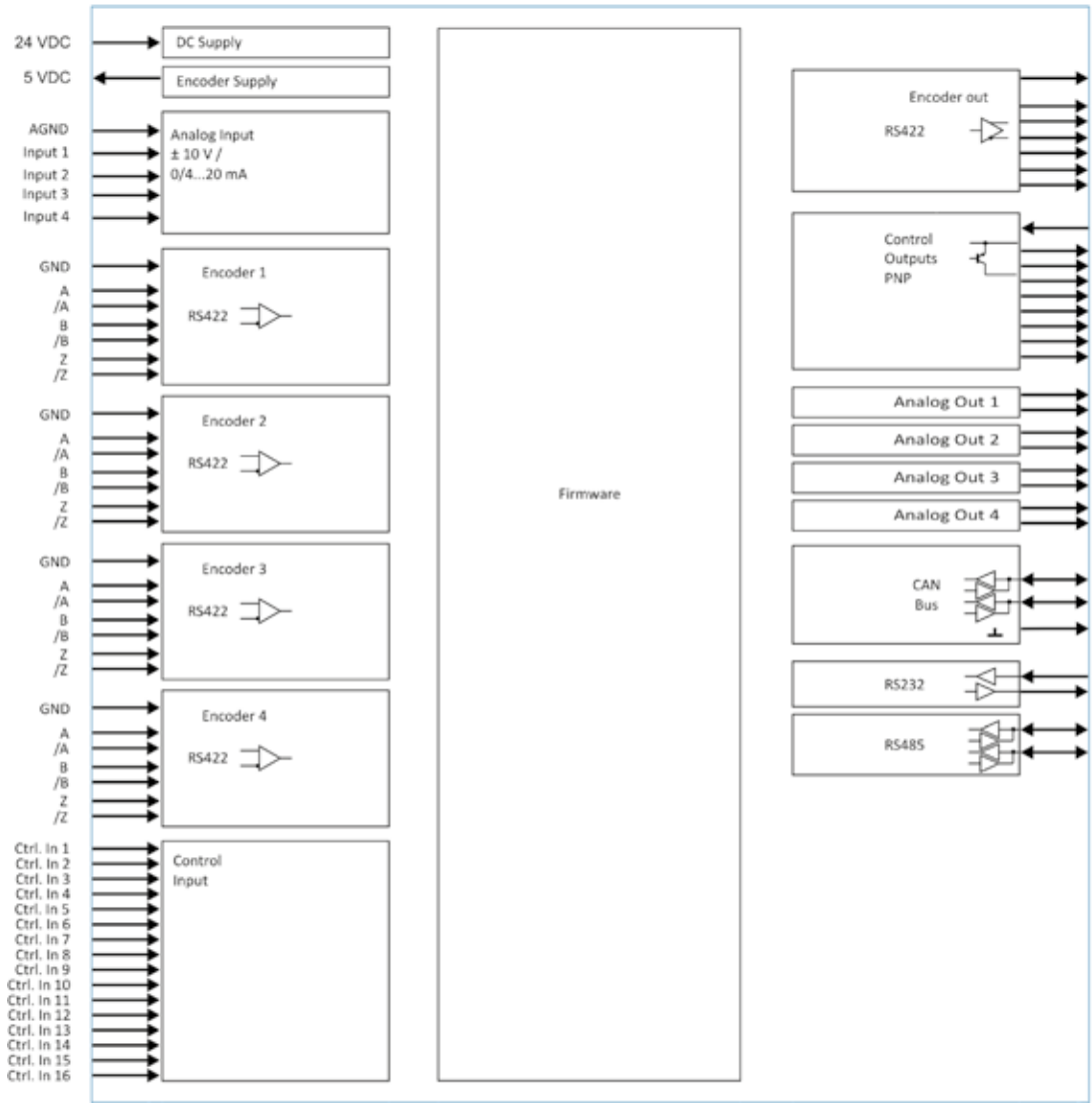
Motion controller with integrated tandem drive controller



- Universal motion controller with application firmware
- Drive synchronization of a master and slave axis, index- and print mark evaluation as well as control of rotating cross cutters, flaying and eccentric shears, label printing machines and many more.
- Adjustable function as cascadable tandem drive controller with the option of splitting heavy loads to two independent drives.
- Flexible and combinable input configuration for encoders, measuring systems and sensors of different types
- Adaptive interface architecture
- Self-optimizing polynomial motion profile
- Excellent accuracy, even at high line speeds
- Very smooth motion with maximum protection of the mechanical parts

Options:

- CI800: CANopen interface
- MB800: Modbus RTU interface
- PB800: Profibus interface
- PS800: PROFIsafe interface



	MC700	MC800
Pulse inputs A, /A, B, /B [RS422] with input frequency up to 400 kHz	4	-
Pulse inputs A, /A, B, /B [RS422] with input frequency up to 2 MHz	-	2
SinCos inputs SIN+, SIN-, COS+, COS- [1 Vss] with input frequency up to 400 kHz	-	2
SSI inputs CLOCK+, CLOCK-, DATA+, DATA- [RS422] 32 Bit, with SSI clock frequency up to 100 Hz ... 1 MHz	-	2
Analog inputs ±10 V, 0/4 ... 20 mA	4 (12 Bit)	2 (14 Bit)
Control inputs [HTL]	16 (PNP)	4 (PNP, NPN)
Fast interrupt inputs [HTL]	-	4 (PNP, NPN)
Pulse outputs A, /A, B, /B, Z, /Z [RS422, HTL]	1	1
Control outputs short-circuit-proof, [HTL]	8 (PNP)	4 (Push-Pull)
Analog outputs ±10 V, 0/4 ... 20 mA	4 (12 Bit)	2 (14 Bit)
Power supply	18 ... 35 VDC	18 ... 35 VDC
Snap-on housing for top hat rail, B x H x T (mm)	144 x 144 x 69	50 x 160 x 160
Setup via free Windows operator software	✓	✓
OnBoard interface	RS232, RS485, CANopen	Ethernet / IP, RS232 / RS485, USB 2.0
Optional Ethernet interface	-	EtherCAT, Ethernet / IP, Modbus TCP, Powerlink, PROFINET, SERCOS-III
Optional Fieldbus interface (slave)	-	CC-Link, DeviceNet, PROFIBUS, CANopen
Optionally expandable	-	✓
Standard firmware (optional):	✓	✓
Synchronization of drives	BY701	BY801
Flying operation	FS701	FS801
Rotary processing	CT703	CT803
Eccentric material processing	CT701	-
Tubular bag packing machine	TB701	-

BY801 / BY701:	Synchronization of drives The BY firmware offers all possible ways to synchronize 1 to 4 following axes, including the influence of phase position and relative position between the drives and numerous index and print mark functions.
FS801 / FS701:	Flying operation With this application firmware, the motrona controllers are the easiest way to implement excellent solutions for flying applications (sawing, cutting, punching, drilling, etc.).
CT803 / CT703:	Rotary processing In rotary cross cutters and other rotary applications the motrona motion controller score with high dynamics, precise cuts and short control cycles. The special feature of the drive controller MC800 in conjunction with the firmware CT803 is the integrated tandem drive controller, which makes it possible to achieve the acceleration request of a slave axis by distributing power between two independent drives. Typical applications are intermittent or rotary operations such as cutting, perforating, printing, sealing, dispensing, labeling and many more.
CT701:	Eccentric material processing The Firmware CT701, in combination with the controller MC700 offers a maximum processing performance with guillotines or eccentric shears in cut-to-length-lines.
TB701:	Tubular bag packing machine Due to highly dynamic motion profiles, the combination of firmware TB701 and MC700 controller works very precisely and is optimized for tubular bag packaging machines (e. g. "pillow packaging").

Application fields



Index multi-axis synchronization

Rotary processing

Flying operation



Signal Converters

Our signal converters are characterized by a fast conversion time, a wide bandwidth and maximum flexibility classed among the World's Best in industrial automation.

For requirements demanding safe processing and reliable transmission of encoder and sensor signals our frequency dividers, frequency multipliers, pulse dividers and level converters have no peers.

Converters from motrona convince by easy handling and simple set-up of parameters whereby scaling is performed by DIL switches or TEACH buttons.

Programmable linearization, digital filters or window functions are further features of our complex modules.

LW series:

Innovative optical fiber modules



- Reliable transmission of encoder signals over distances up to 3000 m
- Resistant to extremely strong electromagnetic fields and interferences
- Predestined for use in potentially explosive atmospheres
- Plugs and pre-configured fiber optic cables available

	LW213	LW214	LW215	LW216	LW217	LW218
Send / receive module for RS422 / HTL signals	send	receive	send	receive	-	-
Sende- / Empfangsmodul für SSI-Absolutwertgeber	-	-	-	-	send	receive
Pulse input / output A, B, C, D [HTL], A, /A, B, /B, C, /C, D, /D [RS422]	1	1	1	1	-	-
SSI input / output CLOCK+, CLOCK-, DATA+, DATA- [RS422]	-	-	-	-	1	1
Error input	-	-	-	-	1	-
Input frequency up to	1 MHz					
Open-drain-output	-	-	-	-	-	1
Very short conversion time	< 300 ns					
Optical wavelength	1300 nm	1300 nm	850 nm	850 nm	1300 nm	1300 nm
Transmission range up to	3000 m	3000 m	2000 m	2000 m	2000 m	2000 m
Power supply	10 ... 30 VDC					
Snap-on housing for top hat rail, B x H x T (mm)	19 x 92,3 x 110,4					

Application fields



Interference-free transmission



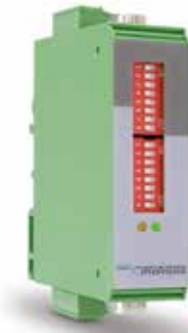
Explosion-proof transmission



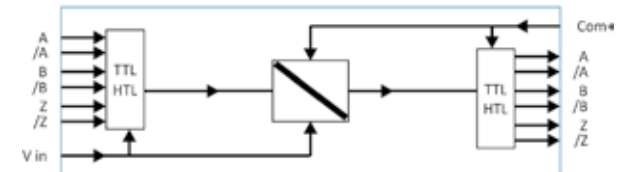
Loss-free transmission for long distances

PU210:

Universal level converter and direction decoder

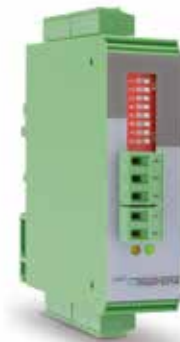


- Universal incremental signal converter and direction decoder (HTL, TTL, RS422) with potential separation of input and output
- Option to convert A, B / 90° of incremental signals into pulse signal with a static direction output and vice versa
- Connections on the input as well as on the output either via sub-D plugs or plug-in screw terminals (parallel connections)

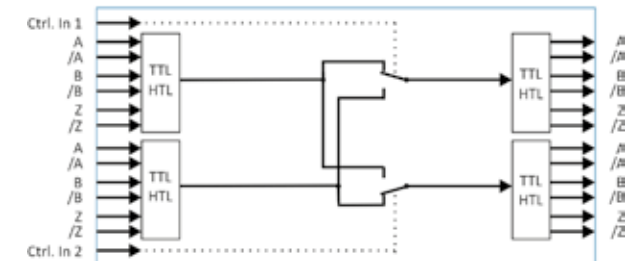


GV210:

Dual Level converter for HTL and RS422 / TTL



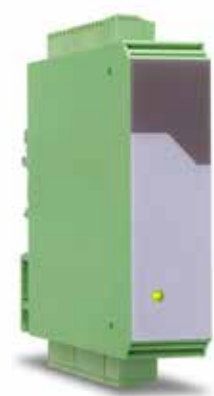
- Universal encoder interface for level conversion, distribution and contactless switching of incremental encoder signals
- Processes directional, synchronous, asynchronous and single-track signals at input frequencies up to 1 MHz
- Contactless and bounce-free switching of the signal paths via external control signals



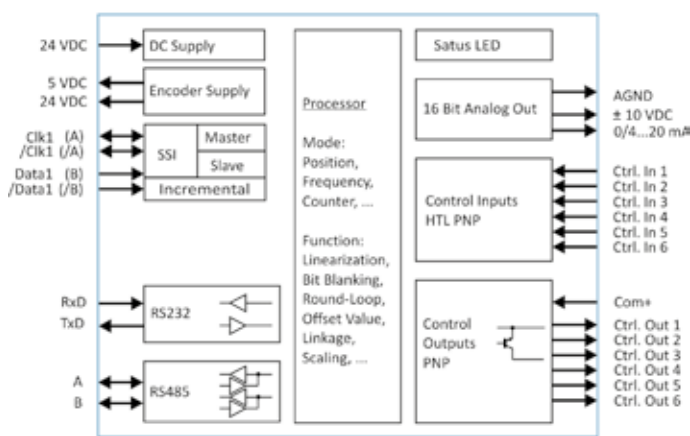
	PU210	PU202	PU204	GV210
Pulse inputs A, /A, B, /B, Z, /Z [RS422]	1	-	1	2
Pulse input A, B, Z [HTL]	1	1	-	-
Control inputs [HTL / PNP, HTL / NPN]	-	-	-	2
Input frequency	500 kHz	200 kHz	200 kHz	1 MHz
Potential separation between input and output	✓	-	-	-
Pulse output A, /A, B, /B, Z, /Z [RS422, HTL]	1	1	1	-
Pulse outputs A, B, Z [HTL], A, /A, B, /B, Z, /Z [TTL / RS422], independently adjustable for each output	-	-	-	2
Power supply	5 ... 30 VDC	5 VDC	10 ... 30 VDC	12 ... 30 VDC
DIL switch for setting the transmission parameters	✓	-	-	✓
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102	78 x 90 x 70	78 x 90 x 70	22,5 x 102 x 102

Signal Converters for analog output

FU / ZU / IV / PV210: Signal converter frequency / pulse counter / SSI / transonic >>> analog / serial



- Multifunctional unit with several operating modes for incremental encoders, SSI absolute encoders or encoders with start-stop interface
 - Converts frequencies, counts, SSI signals or transonic signals into an analog and serial format
- For incremental encoders:
- Operating modes as frequency converter or position transducer (pulse counter)
 - Functions such as linkages, scaling, filters, start-up bridging
- For SSI absolute encoders:
- Master or Slave operation with clock frequencies up to 1 MHz
 - Functions such as bit suppression, round-loop function, scaling
- For absolute and magnetostrictive position encoder with start stop interface:
- Operating modes for master or slave, for position, angle and speed measurement



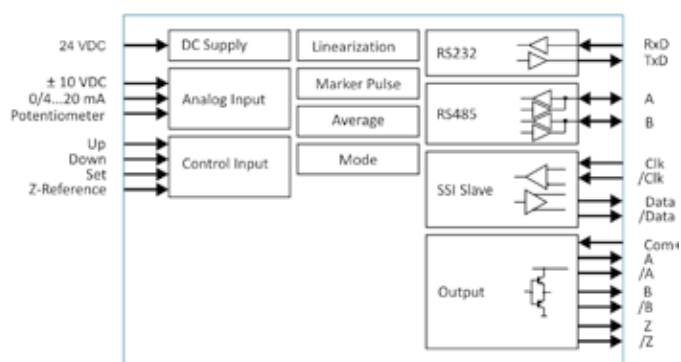
	FU210	ZU210	IV210	PV210
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	1	1	-	-
Input frequency up to	1 MHz	1 MHz	-	-
SSI input CLOCK+, CLOCK-, DATA+, DATA- [RS422], 32 Bit	-	-	1	-
SSI clock frequency	-	-	100 Hz ... 1 MHz	-
Start-stop interface [RS422]	-	-	-	1
Clock frequency time measurement	-	-	-	48 MHz
Analog output ±10 V, 0/4 ... 20 mA, 14 Bit	1	1	1	1
Control outputs short-circuit-proof, [COM+ / PNP]	6	6	6	6
Power supply	18 ... 30 VDC			
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102			
Setup via operator software OS6.0	✓	✓	✓	✓
Serial RS232 / RS485 interface	✓	✓	✓	✓

Signal Converters for analog input

UZ210: Signal converter analog / serial >>> frequency / incremental counter / SSI



- Fast converter of analog signals to a frequency or position with output as incremental signal or as SSI absolute value
- Features a variety of functions, such as a free programmable U/f-characteristic, ability to generate repeating frequency prosses, motor potentiometer function, programmable zero pulse and more



	UZ210
Analog input ±10 V, 0/4 ... 20 mA, 14 Bit	1
Control inputs [HTL / PNP, HTL / NPN]	4
Pulse input A, B [HTL], A, /A, B, /B [RS422]	1
SSI output CLOCK+, CLOCK-, DATA+, DATA- [RS422], 25 Bit	1
Power supply	12 ... 30 VDC
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102
Printer-Mode for automatic data transmission of internal register to a data logger or PC	✓
Serial RS232 / RS485 interface	✓

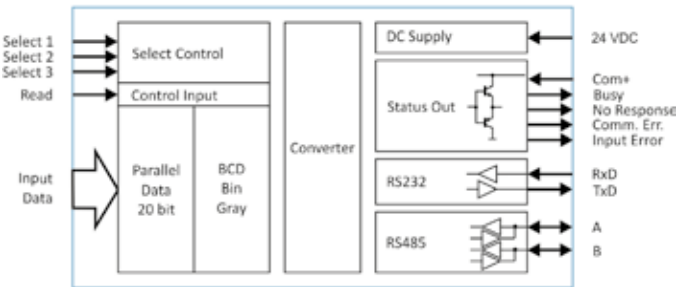
Signal Converters for parallel input

PR210:

Signal converter parallel >>> serial



- Converts parallel BCD, binary or gray code data into serial formats RS232 / RS485
- The converter has additionally 3 selection lines for serial transmission to 8 different destination addresses
- 20 bit parallel input with format BCD, binary or Gray-Code
- Input frequencies: Fast-encoder 5 kHz, auto-transmission / data-logging 0,5 kHz
- Serial RS232 / RS485 interface



	PR210
Parallel input BCD, binary or Gray-Code, 20 Bit	1
Input frequency up to	5 kHz
Control outputs short-circuit-proof, [HTL / Push-Pull]	4
Power supply	10 ... 30 VDC
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102
Serial RS232 / RS485 interface	✓

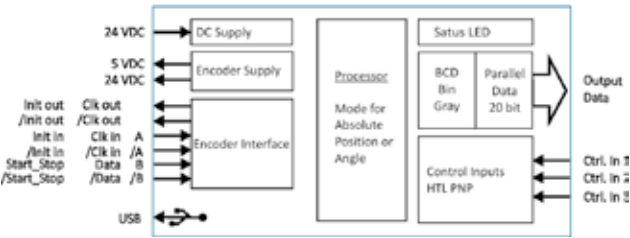
Signal Converters for parallel output

FP / ZP / IP / PP210:

Signal converter frequency / pulse counter / SSI / transonic >>> parallel



- Multifunctional unit with several operating modes for incremental encoders, SSI absolute encoders or encoders with start-stop interface
 - Converts frequencies, counts, SSI signals or transonic signals into a parallel Binary, Gray or BCD format
- For incremental encoders:
- Operating modes as frequency converter or position transducer (pulse counter)
 - Functions such as linkages, scaling, filters, start-up bridging
- For SSI absolute encoders:
- Master or Slave operation with clock frequencies up to 1 MHz
 - Functions such as bit suppression, round-loop function, scaling
- For absolute and magnetostrictive position encoder with start stop interface:
- Operating modes for master or slave, for position, angle and speed measurement



	FP210	ZP210	IP210	PP210
Pulse inputs A, B [HTL], A, /A, B, /B [RS422, HTL]	1	1	-	-
Input frequency up to	1 MHz	1 MHz	-	-
SSI input CLOCK+, CLOCK-, DATA+, DATA- [RS422], 32 Bit	-	-	1	-
SSI clock frequency	-	-	100 Hz ... 1 MHz	-
Start-stop interface [RS422]	-	-	-	1
Clock frequency time measurement	-	-	-	48 MHz
Parallel output BCD, Binär or Gray code [HTL / Push-Pull], 25 Bit	✓	✓	✓	✓
Power supply	10 ... 30 VDC			
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102			
Setup via operator software OS6.0	✓	✓	✓	✓
USB interface, Mini USB [8none1, 115200 Baud]	✓	✓	✓	✓

SAFETY

CONTROL

MOTION

INTERFACE

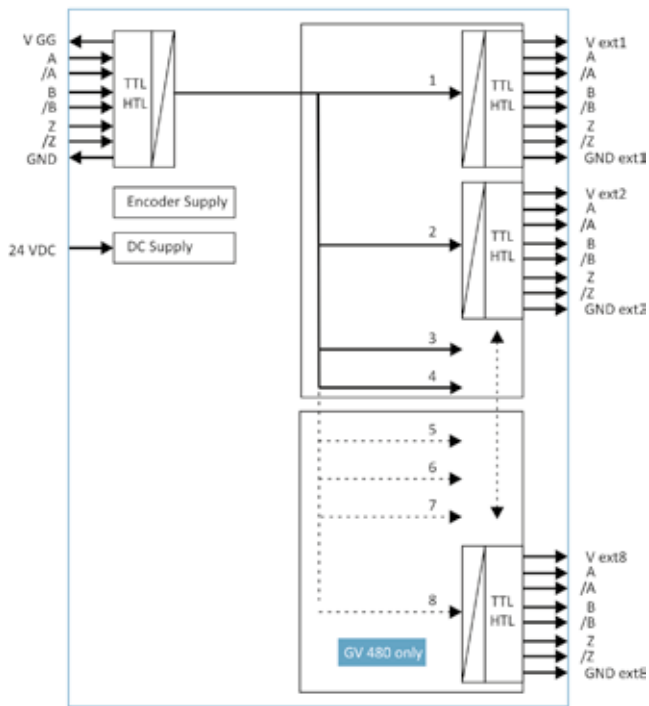
GV460 - GV480:

Signal splitters with 4 or 8 outputs



- Very compact and extremely versatile distributor for incremental encoder signals and measurement systems with 4 or 8 outputs
- Outputs can be cascaded to n x 4 resp. n x 8 outputs (without loss of a regular encoder output).
- Select input for PNP signals
- Input frequency up to 200 kHz for HTL or 500 kHz for RS422 / TTL
- Full electrical isolation of all channels and power supply
- 4 or 8 push-pull outputs, but with individual assignment for each output
- LEDs for indication of the input signals

GV480 / GV481



	GV460	GV461	GV480	GV481
Pulse inputs A, B, Z [HTL] , A, /A, B, /B, Z, /Z [RS422]	2	2	2	2
Control input [HTL / PNP, HTL / NPN]	1	1	1	1
Input frequency up to	200 kHz bei HTL / 500 kHz RS422 / TTL			
Push-pull outputs, formats corresponds to the input signals, but with individual assignment for each output	8	4	8	4
Complete potential separation of all channels as well as the power supply	-	-	✓	✓
Power supply	10 ... 30 VDC			
Snap-on housing for top hat rail, B x H x T (mm)	72 x 144 x 61			
Extended temperature range (°C)	-20 ... +60			
LEDs for indication of the Input pulses	✓	✓	✓	✓

Application fields



Robotic



Vision systems



Printing machines

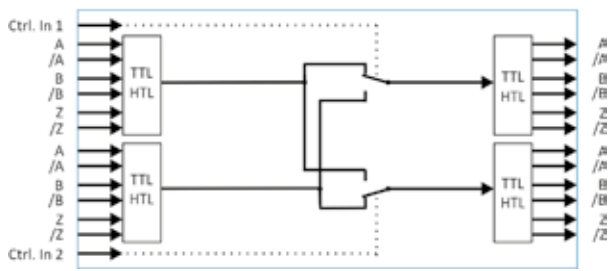
Level Converters / Splitters for incremental signals

GV210:

Pulse converter, distributor and splitter



- Universal encoder interface for level conversion, distribution and contactless switching of incremental encoder signals
- Processes directional, synchronous, asynchronous and single-track signals at input frequencies up to 1 MHz
- Contactless and bounce-free switching of the signal paths via external control signals



GV210	
Pulse inputs A, B, Z [HTL] , A, /A, B, /B, Z, /Z [RS422]	2
Input frequency up to	250 kHz / 1 MHz
Control inputs [HTL / PNP, HTL / NPN]	2
Pulse outputs A, B, Z [HTL], A, /A, B, /B, Z, /Z [RS422]	2
Power supply	12 ... 30 VDC
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102

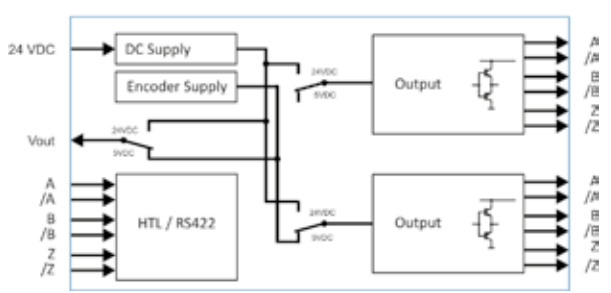
Level Converters / Splitters for incremental signals

GV204:

Pulse splitter



- The device is used to distribute the output signals of incremental pulse generators accurately and easily to two terminals
- If more than two terminals are used, multiple splitters can also be cascaded or a larger splitter can be used
- At the same time, the device can be used as level converter between TTL / RS422 and HTL (10 ... 30 V)



GV204	
Pulse input A, B, Z [HTL] , A, /A, B, /B, Z, /Z [RS422, HTL]	1
Input frequency up to	750 kHz
Pulse outputs A, /A, B, /B, Z, /Z [RS422, HTL]	2
Power supply	5 / 10 ... 30 VDC
Snap-on housing for top hat rail, B x H x T (mm)	85 x 90 x 50

Application fields



Vision systems



Printing machines



Robotic

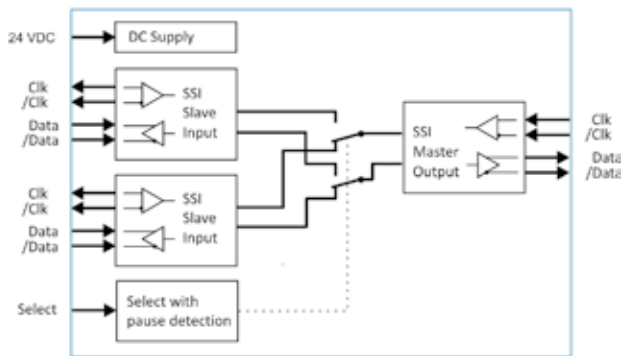
Switches for SSI signals

GI210:

Switch between 2 SSI encoders and a target device



- Encoder switch for contactless, bounce-free switching of two SSI encoders on a SSI master
- Delay period between input and output max. 100 ns
- SSI break period min. 25 ns
- Switching time is automatically synchronized with the next SSI break
- Cascadable for additional SSI encoders
- LEDs for visualization of the input pulses



	GI210
SSI Master input CLOCK+, CLOCK-, DATA+, DATA- [RS422]	1
Control inputs [HTL / PNP]	2
SSI clock frequency	100 kHz ... 1 MHz
SSI Slave input CLOCK+, CLOCK-, DATA+, DATA- [RS422]	2
Power supply	12 ... 30 VDC
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 121 x 112

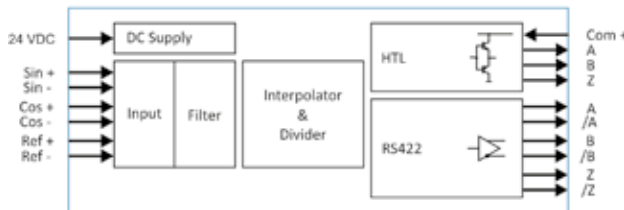
Converters for SinCos signals

SI251:

Interpolator SinCos >>> incremental



- Converting sinusoidal encoder signals into incremental output pulses
- Extensive features, e.g. adjustable multiplier, interpolation factor, divider and glitch filter available
- Simple parameterization via DIL switch



	SI251
SinCos input SIN+, SIN-, COS+, COS-, REF+, REF- [1 Vss]	1
Control input "Error Release" für PNP Signale [HTL / PNP]	1
Input frequency up to	400 kHz
Pulse output A, /A, B, /B, Z, /Z [RS422]	1
Output frequency [RS422] up to	4 MHz
Pulse output A, B, Z [HTL]	1
Output frequency [HTL] up to	100 kHz
Control output "Error", Push-Pull, short-circuit-proof, [RS422]	1
Power supply	18 ... 30 VDC
Snap-on housing for top hat rail, B x H x T (mm)	40 x 80 x 91

Splitters for SinCos signals

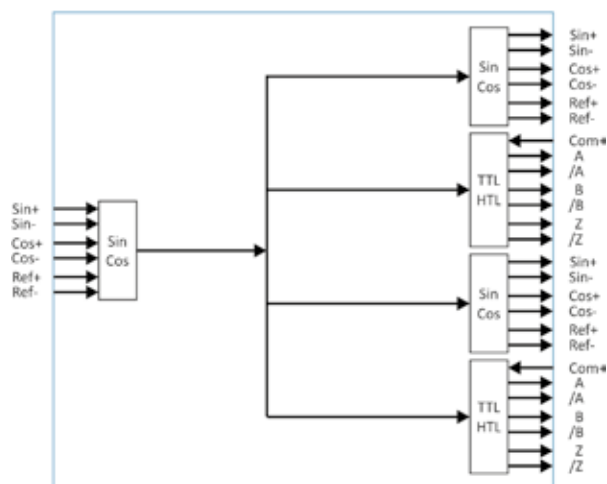
Frequency Divider / Multiplier

SV210:

Splitter for SinCos encoder signals



- Signal distributor and pulse splitter for SinCos encoders and measuring systems
- Equipped with 2 SinCos outputs as well as 2 incremental outputs (HTL, TTL / RS422)
- Maximum sinus input frequency 500 kHz with max. 200 ns conversion time

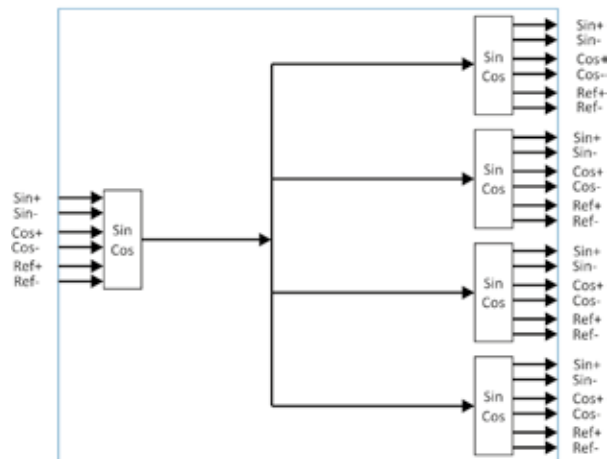


SV211:

Splitter for SinCos encoder signals



- Signal distributor for SinCos encoders. Distributes the input signals of a sine-cosine encoder or measuring system to four homogeneous output channels
- Maximum sinus input frequency 500 kHz with max. 200 ns conversion time



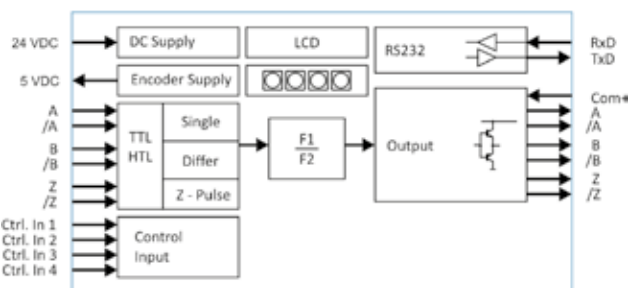
	SV210	SV211
SinCos input SIN+, SIN-, COS+, COS-, REF+, REF- [1 Vss]	1	1
Input frequency up to	500 kHz	
Conversion time approx.	200 ns	
SinCos outputs SIN+, SIN-, COS+, COS-, REF+, REF- [1 Vss]	2	4
Pulse outputs A, /A, B, /B, Z, /Z [RS422, HTL]	2	-
Power supply	17 ... 30 VDC	
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102	

FM260:

Pulse and frequency multiplier



- Multiplies incoming signals from incremental encoders and measuring systems with a proportional and a reciprocal factor (each adjustable from 0.0001 ... 9.9999)
- Accurate pulse multiplication taking into account the direction of rotation
- Therefore no cumulative pulse errors can occur
- Further features are available like programmable zero pulse distance, etc.
- Input and output frequency up to 1 MHz



	FM260
Pulse input A, B, Z [HTL], A, /A, B, /B, Z, /Z [RS422, HTL]	1
Control inputs [HTL / PNP]	4
Input and output frequency up to	1 MHz
Pulse output A, /A, B, /B, Z, /Z [HTL / Push-Pull]	1
Power supply	11 ... 30 VDC
Snap-on housing for top hat rail, B x H x T (mm)	72 x 91 x 76
LCD display, backlighted	✓
Serial RS232 / USB interface	✓
Setup via keys and user software OS6.0	✓

SAFETY

CONTROL

MOTION

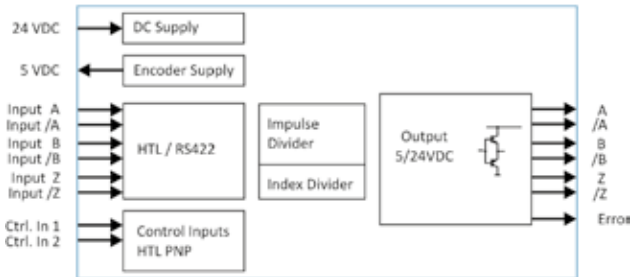
INTERFACE

IT210:

Level converter, directional decoder and programmable pulse divider



- Level converter (RS422, HTL single ended, HTL differential, TTL and vice versa)
- Two types for the directions of rotation adjustable
- Adjustable pulse divider for A/B signals
- Separately adjustable divider for the zero pulse
- Reset the pulse divider by external input
- Zero impulse divider can also be used as an independent second divider
- Input frequency up to 1 MHz
- Push-pull outputs for direct PLC control



	IT210
Pulse input A, /A, B, /B, Z, /Z [RS422, HTL]	1
Pulse input A, B, Z [HTL]	1
Input frequency up to	1 MHz
Pulse output A, /A, B, /B, Z, /Z [RS422, HTL]	1
Pulse output A, B, Z [HTL]	1
Power supply	18 ... 30 VDC
Snap-on housing for top hat rail, B x H x T (mm)	22,5 x 102 x 102

PB251:

PROFIBUS serial Gateway



- Universal gateway for connecting motrona devices to a PROFIBUS (DPV1)
- Allows PROFIBUS connection of motrona displays in a simple way, controllers and converters equipped with a serial interface (DRIVECOM protocol)
- Power supply 18 ... 30 VDC
- Top hat rail, B x H x T = 40 x 80 x 91 mm
- Setting of the transmission profile via DIL switch

NT215:

Universal power pack 24 VDC / 15 W



- Affordable compact power supply unit for all motrona devices with 24 VDC input / 15 W output (Lambda)
- Universal input 85 ... 264 VAC [50 ... 60 Hz] or 90 ... 375 VDC
- Output 24 VDC (±1 %), 630 mA, 15 Watt
- Compact housing, B x H x T = 22,8 x 75 x 96,7 mm

SM300 / SM600 / TG300:

Mounting clamps and brackets



- SM300 and SM600 are practical support brackets with snap device for quick and easy installation of control panel housing on a 35 mm DIN rail (EN 60715)
- **SM300** for display units with front dimension 96 x 48 mm
- **SM600** for display units with front dimension 96 x 96 mm
- **TG300** table housing e. g. for laboratory or workshop use, suitable for display units with front dimension 96 x 48 mm.

Accessories

USBAA / USBAB / USBAMiniB:	<div><div>USB cable for motrona devices</div><div><ul style="list-style-type: none">• USB cable for connection between PC operator software and motrona devices• USBAA cable for motrona converter UZ210. Double side USB connector type A. Length approx. 2 m.• USBAB cable for motrona DS series. USB connector type A on type B. Length approx. 1,8 m.• USBAMiniB cable for motrona Pulse and Frequency Multiplier FM260. USB connector type A on type Mini B. Length approx. 1,8 m.</div></div>
CK232:	<div><div>Connectivity kit USB / RS232</div><div><ul style="list-style-type: none">• This set consists of an USB to RS232 converter compatible to all existing Windows versions, including a serial RS232 cable for connection between converter and motrona unit.• Cable with connector SUB-D-9 (male) and connector SUB-D-9 (female)• Length 3 m</div></div>
OS6.0:	<div><div>Operator software</div><div><ul style="list-style-type: none">• Free download under https://www.motrona.com/en/support/software.html• Alternatively you can use the QR code</div></div>





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