UIO108

Universal Input/Output Module

The cost and performance optimized design of complex automation solutions involves a large number of different sensor and actuator types. The standard 10 V and 4 mA to 20 mA interfaces are often not sufficient to achieve demanding objectives.

With the UIO108, a single module type covers all common analog and digital signals for inputs and outputs that can be configured individually for each channel. The extensive versatility of the module is rounded off by a wide range of additional functions such as counters, encoders, pulse width modulation or the control of a stepper motor driver. This simplifies the entire process from the quotation phase through planning, programming and commissioning, right up to stockkeeping and servicing. Besides the 8 freely configurable primary channels, up to 8 additional I/O channels with restricted signal types are available.

Part type designation	Part number
UIO108	00040911-00
UIO108 EC	00042166-00

Features

- 8-channel analog/digital input/output module
- Up to 8 additional channels depending on the required signal type
- Configurable by channel: signal type and direction
- DI / counter / encoder
- DO / PWM
- AI current/voltage, Pt100, Pt1000, thermocouples (J, K, T, N, E, R, S, B)
- AO current/voltage
- Control of a stepper motor driver
- Synchronous clocks / latch / sync out
- Oversampling
- Direct module-to-module communication

Common properties	
Basic function	8x (+ 8x) universal digital/analog input/output
System	Bachmann system M100
Analog inputs – voltage	
Number of analog inputs	0 to 8 configurable
Signal standard	±10 V, ±1 V, ±100 mV, ±10 mV
Measurement range	±10.5 V; ±1.05 V; ±105 mV; ±10.5 mV (105 %)
Resolution (ADC)	16 bit
Accuracy at T_a = +25 °C	Measurement range ±10 V: 0.05 % FS Measurement range ±1 V: 0.05 % FS Measurement range ±100 mV: 0.05 % FS Measurement range ±10 mV: 0.2 % FS
Connections per input	2 (+/- differential)
Common mode voltage, max.	Measurement range ±10 V: ±1 V Measurement range ±1 V: ±1 V Measurement range ±100 mV: -1 V to +4 V Measurement range ±10 mV: ±3 V
Common mode rejection	±10 V ±0.04 % FS/V ±1 V ±0.08 % FS/V ±100 mV ±0.2 % FS/V ±10 mV ±0.25 % FS/V
Cross-talk rejection	> 60 dB
Internal scan rate, max.	20 kHz
Digital low pass filter cut-off frequency	3500 Hz to 0.875 Hz configurable
Digital low pass filter slope	> 80 dB/decade
Input impedance	> 100 kΩ
Signal cable length, shielded, max.	1000 m [1)]
Signal cable length, unshielded, max.	3 m
Interpolation	Optionally configurable (linearly interpolated intermediate values, delayed output)
Oversampling	Up to 128 values per cycle (8x)
Process data	Analog value Analog value with intermediate values Diagnostics channel quality information
Time stamps	No

[1)] *Depending on the measuring range used and the required accuracy, shorter line lengths must be provided.*

Analog inputs – current	
Number of analog inputs	0 to 8 configurable
Signal standard	4 mA to 20 mA, ±20 mA
Measurement range	-13 mA to 21 mA, ±21 mA
Resolution (ADC)	16 bit
Accuracy at T_a = +25 °C	Measurement range 4 mA to 20 mA: 0.2 % FS Measurement range ±20 mA: 0.1 % FS
Connections per input	2
Common mode voltage, max.	±6 V
Common mode rejection	±20 mA ±0.08 % FS/V 4 mA to 20 mA ±0.16 % FS/V
Cross-talk rejection	> 60 dB
Internal scan rate, max.	20 kHz

Analog inputs – current	
Digital low pass filter cut-off frequency	875 Hz to 0.875 Hz configurable
Digital low pass filter slope	> 80 dB/decade
Input impedance	≤ 270 Ω
Signal cable length, shielded, max.	1000 m
Signal cable length, unshielded, max.	3 m
Interpolation	Optionally configurable (linearly interpolated intermediate values, delayed output)
Oversampling	Up to 128 values per cycle (8x)
Process data	Analog value Analog value with intermediate values Diagnostics channel quality information
Time stamps	No
Analog inputs – resistance thermometer (RTD)	
Number of analog inputs	0 to 8 configurable
Signal standard	Pt100, Pt1000
Measurement range	-100 °C to +800 °C
Resolution (ADC)	16 bit
Accuracy at T_a = +25 °C	Measurement range Pt100: ±0.15 % FS Measurement range Pt1000: ±0.15 % FS
Connections per input	2-wire measurement (combined for current loop and resistance measurement) 3-wire measurement (current loop has a separate leg) 4-wire measurement (current loop and resistance measurement separated)
Common mode voltage, max.	±3 V
Cross-talk rejection	> 60 dB
Internal scan rate, max.	20 kHz
Digital low pass filter cut-off frequency	875 Hz to 0.875 Hz configurable
Digital low pass filter slope	> 80 dB/decade
Input impedance	> 10 MΩ
Signal cable length, shielded, max.	1000 m
Signal cable length, unshielded, max.	3 m
Interpolation	Optionally configurable (linearly interpolated intermediate values, delayed output)
Oversampling	Up to 128 values per cycle (6x)
Process data	Analog value Analog value with intermediate values Diagnostics channel quality information
Time stamps	No
Analog inputs – thermocouple	
Number of analog inputs	0 to 8 configurable
Signal standard	Thermocouples type J, K, T, N, E, R, S, B

Analog inputs – thermocouple	
Measurement range	Measurement range J: -100 °C to +1200 °C Measurement range K: -50 °C to +1370 °C Measurement range T: -30 °C to +400 °C Measurement range N: -50 °C to +1300 °C Measurement range E: -100 °C to +1000 °C Measurement range R: -30 °C to +1768 °C Measurement range S: -50 °C to +1768 °C Measurement range B: +600 °C to +1820 °C
Resolution (ADC)	16 bit
Accuracy at T_a = +25 °C	Measurement range J: ±0.15 % FS Measurement range K: ±0.15 % FS Measurement range T: ±0.3 % FS Measurement range N: ±0.15 % FS Measurement range E: ±0.15 % FS Measurement range R: ±0.25 % FS Measurement range S: ±0.25 % FS Measurement range B: ±0.25 % FS
Connections per input	2 (differential)
Cold junction compensation	Internal measuring point: ±5 °C Via set value (e.g. from external sensor)
Common mode voltage, max.	±3 V
Common mode rejection	Measurement range J: ±0.40 % FS/V Measurement range K: ±0.45 % FS/V Measurement range T: ±1.40 % FS/V Measurement range N: ±0.65 % FS/V Measurement range E: ±0.40 % FS/V Measurement range R: ±0.65 % FS/V Measurement range S: ±0.65 % FS/V Measurement range B: ±0.70 % FS/V
Cross-talk rejection	> 60 dB
Internal scan rate, max.	20 kHz
Digital low pass filter cut-off frequency	0.875 Hz to 875 Hz configurable
Digital low pass filter slope	> 80 dB/decade
Input impedance	> 100 kΩ
Signal cable length, shielded, max.	1000 m
Signal cable length, unshielded, max.	3 m
Interpolation	Optionally configurable (linearly interpolated intermediate values, delayed output)
Oversampling	Up to 128 values per cycle (8x)
Process data	Analog value Analog value with intermediate values Diagnostics channel quality information
Time stamps	No
Analog ouputs – voltage	
Number of analog outputs	0 to 8 configurable
Signal standard	±10 V 0 V to 10 V
Output range	±10.5 V 0 V to +10.5 V

Analog ouputs – voltage	
Output current per channel, nominal, continuous	±10 mA in ±10 V mode 20 mA in 0 V to 10 V mode
Resolution (DAC)	14 bit
Accuracy at T_a = +25 °C	Output range ±10 V: 0.05 % FS Output range 0 V to 10 V: 0.1% FS
Connections per output	2 (+/- differential, isolated)
Common mode voltage, max.	±1 V
Common mode rejection	±0.02 % FS/V
Cross-talk rejection	> 60 dB
Internal scan rate, max.	20 kHz
Load impedance, min.	Output range ±10 V: 1 kΩ Output range 0 V to 10 V: 500 Ω (20 mA max.)
Signal cable length, shielded, max.	1000 m
Signal cable length, unshielded, max.	3 m
Process data	Analog value Analog value with intermediate values Diagnostics channel quality information
Analog ouputs – current	
Number of analog outputs	0 to 8 configurable At ambient temperatures above 60 °C only all even-numbered channels may be configured with the AOC function.
Signal standard	4 mA to 20 mA, 0 mA to 20 mA, 0 mA to 2 mA, 0 µA to 200 µA
Output range	4 mA to 21 mA, 0 mA to 21 mA, 0 mA to 2.1 mA, 0 µA to 210 µA
Resolution (DAC)	14 bit
Accuracy at T_a = +25 °C	Output range 4 mA to 20 mA: ±0.2 % FS Output range 0 mA to 20 mA: ±0.2 % FS Output range 0 mA to 2 mA: ±0.2 % FS Output range 0 µA to 200 µA: ±0.6 % FS
Connections per output	2 (+/- current loop)
Common mode rejection	> 60 dB
Cross-talk rejection	> 60 dB
Internal scan rate, max.	20 kHz
Load impedance, max.	600 Ω
Signal cable length, shielded, max.	1000 m
Signal cable length, unshielded, max.	3 m
Process data	Analog value Analog value with intermediate values Diagnostics channel quality information
Digital Inputs – 24 V	
Number of digital inputs	0 to 8 configurable
Signal standard	IEC 61131-2 configurable type 1/2/3, sink (P-reading) / source (M-reading)
Voltage category, nominal	24 V DC
Signals per supply group	0 to 8 configurable (1 group)
Connections per input	1 (signal)
Signal supply voltage range	18 V DC to 32 V DC
Operating voltage range (high/on)	> +11 V
Off-state voltage (low/off)	< +5 V

Digital Inputs – 24 V	
Overvoltage protection	-8 V DC to 32 V DC
Input current, on-state, nominal	Type 1: 2.8 mA Type 2: 7 mA Type 3: 2.8 mA, source: -3 mA
Input current, off-state, max.	Type 1: min. 1.5 mA / max. 6 mA Type 2: min. 5 mA / max. 10 mA Type 3: min. 1.5 mA / max. 6 mA
Signal on delay, max.	≤ 2 µs + digital pulse filter setting time
Signal off delay, max.	≤ 2 µs + digital pulse filter setting time
Digital spike filter	Off, 16 µs, 32 µs, 64 µs, 128 µs, 256 µs, 512 µs, 1 ms, 2 ms, 4 ms, 8 ms, 16 ms, 33 ms, 66 ms, 131 ms, 262 ms
Internal scan rate, max.	No internal cycle
Maximum input frequency	150 kHz
Signal inversion	8x
Impulse extension	No
Oversampling	Up to 128 values per cycle (8x)
Process data	Digital state (8x) Digital state with intermediate values (8x) Time stamp rising edge (8x) Time stamp falling edge (8x) Edge detection last bus cycle (8x) Diagnostics channel quality information (8x)
Time stamps	Rising/falling edge (8x)
Signal state indication	Yes (green numeric LED per channel)
Signal cable length, shielded, max.	1000 m
Signal cable length, unshielded, max.	1000 m
Signal supply monitoring	Yes
Digital inputs – TTL	
Number of digital inputs	0 to 8 configurable
Signal standard	TTL
Voltage category, nominal	5 V DC
Connections per input	1 (signal)
Signal supply voltage range	18 V DC to 32 V DC
Operating voltage range (high/on)	1.6 V DC to 30 V DC
Off-state voltage (low/off)	-8 V DC to 0.8 V DC
Overvoltage protection	-8 V DC to 32 V
Input impedance	> 10 kΩ @ 5 V
Input current, on-state, nominal	3 mA
Input current, off-state, max.	6 mA
Maximum input frequency	150 kHz
Digital spike filter	Off (0); 16 µs (1); 32 µs (2); 64 µs (3); 128 µs (4); 256 µs (5); 512 µs (6); 1 ms (7); 2 ms (8); 4 ms (9); 8 ms (10); 16 ms (11); 33 ms (12); 66 ms (13); 131 ms (14); 262 ms (15)
Time stamps	Rising/falling edge (8x)
Signal state indication	Yes (green numeric LED per channel)

Digital inputs – TTL	
Signal supply monitoring	Yes
Digital inputs – 5 V/24 V pull up	
Number of digital inputs	0 to 8 configurable
Signal standard	5 V sourcing input
Voltage category, nominal	5 V DC
Connections per input	1 (signal)
Signal supply voltage range	18 V DC to 32 V DC
Operating voltage range (high/on)	1.6 V DC to 30 V DC
Off-state voltage (low/off)	-8 V DC to 0.8 V DC
Overvoltage protection	-8 V DC to 0.8 V DC
Input impedance	> 0.83 kΩ
Input current, on-state, nominal	3 mA
Maximum input frequency	150 kHz
Digital spike filter	Off (0); 16 µs (1); 32 µs (2); 64 µs (3); 128 µs (4); 256 µs (5); 512 µs (6); 1 ms (7); 2 ms (8); 4 ms (9); 8 ms (10); 16 ms (11); 33 ms (12); 66 ms (13); 131 ms (14); 262 ms (15)
Time stamps	Rising/falling edge (8x)
Signal state indication	Yes (green numeric LED per channel)
Signal supply monitoring	Yes
Digital outputs – 24 V	
Number of digital outputs	0 to 8 configurable
Signal standard	IEC 61131-2 type 0.1 A Source (HighSide, P-switching) / sink (LowSide, M-switching) / push-pull
Voltage category, nominal	24 V DC
Output type	Semiconductor output not isolated
Signals per supply group	0 to 8 (1 group)
Signal supply voltage range	18 V DC to 32 V DC
Overvoltage protection	-8 V DC to 32 V
Connections per output	1 (signal)
Output current per channel, nominal, continuous	0.1 A
Output current per channel, max.	0.1 A
Output current per channel, short-term overload	0.505 A @ $T_a \leq 70$ °C
Output current per group, max.	8x 800 mA short-circuit electricity results in total max. 6.4 A
Output current per channel, min.	0 mA
Output current per channel, off-state, max.	Typ. 100 µA 120 µA maximum leakage current
Paralleling outputs	Yes (up to 8 outputs)
Coupled outputs	Yes (up to 8 outputs)
Voltage drop, on-state, max.	450 mV @ 0.1 A
Output impedance, on-state, max.	4.5 Ω
Signal on delay, max.	< 1 µs
Signal off delay, max.	< 1 µs
Internal scan rate, max.	No internal cycle
Maximum output frequency	125 kHz
Signal inversion	8x

Digital outputs – 24 V	
Pulsetrains	Up to 128 values per cycle (8x)
Time triggered output	Absolute time set value for output (8x)
Signal state indication	Yes (green numeric LED per channel)
Process data	Digital state (8x) Digital state with intermediate values (8x) Output event (8x) Read-back digital state (8x) Diagnostics channel quality information (8x)
Pulse width modulation (PWM)	
Number of PWMs	0 to 8 configurable
Selectable output interfaces	IEC 61131-2 type 0.1 A Source (HighSide, P-switching) / sink (LowSide, M-switching) / push-pull
Operation modes	Flexible, parameters can optionally be set as process values: Cycle time Mark-to-space ratio Start pulse duration Pulse rate setting
Cycle time	8 µs to 4.295 s (32 bit)
Duty cycle	0 % to 100 % of cycle time (16 bit)
Settings resolution	1 ns
Impulse duration, min.	8 µs
Energy saving mode	Constant start pulse configurable duration Holdup-pulsing with configurable period and mark-to-space ratio
Coupled PWM	Via coupled digital channel
Stepper motor	
Number of stepper motors	0 to 3 configurable
Signal standard	IEC 61131-2 type 0.1 A Source (HighSide, P-switching) / sink (LowSide, M-switching) / push-pull
Operation modes	Free-running mode, position-driven mode
Starting frequency	1 Hz to 125 Hz configurable
Maximum frequency	1 Hz to 125 Hz configurable
Acceleration/deceleration	1 kHz/s to 18.75 MHz/s configurable
Duty cycle	0% to 100% configurable
Maximum output frequency	125 kHz
Limit switch	Via DI (2x) or module-to-module communication
Process data	Actual position (3x) Target position (3x) Command (3x) Status (3x) Diagnostics channel quality information (6x)
Time measurement	
Number of time measurements	0 to 2 configurable
Selectable input interfaces	Digital inputs – 24 V Digital inputs - TTL Digital Inputs - 5 V / 24 V Pull up
Edge evaluation	2x
Cycle time measurement	2x
Pulse duration measurement	2x

Time measurement	
Maximum input frequency	150 kHz
Time resolution	10 ns
Process data	Cycle time (2x) Period time stamp (2x) Pulse duration (2x) Pulse duration time stamp (2x) Diagnostics channel quality information (2x)
Counter	
Number of counters	0 to 2 configurable
Selectable input interfaces	Digital inputs – 24 V Digital inputs - TTL Digital Inputs - 5 V / 24 V Pull up
Edge evaluation	2x (rising/falling/both)
Edge counter including frequency reduction	No
Counter latch	Via DI (2x)
Conditional counting (gate)	Via DI (2x) Via software (2x)
Selectable counting direction	Via DI (2x) Via software (2x)
Frequency measurement	Yes (last period)
Set/reset counter	Via DI (2x) Via software (2x)
Automatic compare function	Upper/lower comparison value (2x)
Maximum input frequency	150 kHz
Process data	Counter value (2x) Counter value time stamp (2x) Homing state (2x) Homing time stamp (2x) Homing counter value change (2x) Counter value for trigger (2x) Counter value at trigger time stamp (2x) High comparison value status (2x) High comparison value time stamp (2x) Low comparison value status (2x) Low comparison value time stamp (2x) Diagnostics channel quality information (2x)
Incremental position encoder	
Number of encoders	0 to 2 configurable
Selectable input interfaces	Digital inputs - HTL (sink/source) Digital inputs - TTL (sink/source)
2-phase quadrature encoding (A/B track)	Single, double, quad edge evaluation (2x)
Edge counting modes	Single, double, quad edge evaluation, pulse/direction (2x)
Counter latch	No
Cycle time measurement	No
Pulse duration measurement	No
Frequency measurement	No
Set/reset encoder	Via software (2x)
Automatic compare function	Upper/lower comparison value (2x)

Incremental position encoder	
Automatic increment of compare value	No
Maximum count frequency	500 kHz (quad edge evaluation)
Process data	Position value (2x) Position value time stamp (2x) High comparison value status (2x) High comparison value time stamp (2x) Low comparison value status (2x) Low comparison value time stamp (2x) Diagnostics channel quality information (2x)
Sensor/actuator supply 24 V DC	
Number of supply points 24 V DC	0 to 8 configurable (DO function of the channel)
Output current per channel, nominal, continuous	0.1 A
Sensor/actuator supply 0 V to 10 V DC	
Number of supply points 0-10 V DC	0 to 8 configurable (AOV function of the channel)
Output current per channel, nominal, continuous	20 mA
Output current per channel, short-term overload	20 mA
Output current per group, nominal, continuous	20 mA
Short-circuit protected, supply	Yes, continuously
Overvoltage protection	±27 V to GND
Sensor/actuator supply 5 V DC	
Number of supply points 5 V DC	0 to 8 (AOV function of the channel)
Output current per channel, nominal, continuous	20 mA
Output current per channel, short-term overload	20 mA
Output current per group, nominal, continuous	20 mA
Short-circuit protected, supply	20 mA
Overvoltage protection	±27 V to GND
Module-to-module communication	
Signal propagation to neighbour	DI (8x)
Signal receiver from neighbor modules	DO (4x)
Signal propagation delay	300 ns (transmitter + receiver)
Module bus interface	
System	M100
Slot type	IO (1/E, 2, 3, 4, ...31)
Module data rate	Typ.: 0 Mbit/s to 33.6 Mbit/s depending on the configuration
Bus cycle time, min.	4.5 µs [1)]

[1)] *Depending on the fieldbus used and the respective configuration, lower data rates and longer cycle times can be expected.*

Synchronization/clocks	
Distributed clocks	Yes
Time stamp format	64 bit in ns
Time resolution	1 ns (64 bit)
Time precision	25 ns within the station 100 ns via network (typ.) 1 µs via network (max.)
Synchronization functions	Synced operation Synced with oversampling operation

Synchronization/clocks	
Synced output	AOV AOC DO / PWM
Synced output jitter	±175 ns (DO)
Latch input	AIV AIC RTD TC DI / CNT / INC
Field bus cycle time, min.	100 µs [1)]

[1)] *Depending on the fieldbus used and the respective configuration, lower data rates and longer cycle times can be expected.*

Diagnostics	
Electronic type plate	Yes (application interface and in the engineering tool)
Machine readable type plate	Yes (QR code with type and part information and internet link)
Environmental conditions sensor	Integrated (temperature)
Operational indications	LED "MOD" (red/green) module status LED "CH" (red/green) channel status summary Numeric LED per channel (green) digital level of the channel
Error indications	Supply voltage too low Overload Cable break / open signal circuit Threshold value overshoot
Powerfail, logic supply	No
Powerfail, signal supply	Undervoltage < 15.0 V (fallback > 17.5 V)
Overload/short-circuit	Yes, per output channel
Open circuit	Yes (analog I/O, digital I/O)
Mismatch output readback	Yes
Measurement range monitoring	Yes, upper/lower limit
Configurable threshold monitoring	Yes, configurable upper/lower limit

Energy supply	
Supply voltage, nominal	24 V DC
Supply voltage, range	18 V DC to 32 V DC
Power consumption from 24 V signal supply	5.1 W plus load supply
Maximum residual ripple 24 V signal supply	±2.4 V
Overcurrent protection required	No internal protection External protection with circuit breaker characteristic: B, C, D, Z or K Max. nominal current 8 A DC
Power dissipation, typ./max.	3.8 W / 6.0 W
Reverse polarity protection signal supply	Yes, continuously (up to -32 V)
Power consumption from backplane	720 mW
Supply terminal block bridge	Yes (1+ on to 2+, 1- on to 2-)

Product safety	
Galvanic isolation	850 V AC
Galvanic isolation between supply groups	No
Galvanic isolation between inputs	No
Permitted potential difference between digital channels	No isolation between channels

Product safety	
Permitted potential difference between analog channels	No isolation between channels
Degree of protection acc. IEC 60529	IP40, terminal block IP30
Protection class acc. IEC 61010-1, IEC 61010-2-201	III
Overvoltage category acc. IEC 61010-1	II
Rated impulse withstand voltage acc. IEC 61000-4-5	Supply DC: • 500 V DM • 1000 V CM
Short-circuit protected, outputs	Yes, continuously
Keying of terminal block	Yes (2-fold per 6 contacts)
Environmental conditions	
Temperature, operating	Standard: -30 °C to +60 °C Extended Climate: -30 °C to +70 °C
Temperature, transport and storage	-40 °C to +85 °C
Installation altitude, max.	Up to 2000 m without temperature derating 2000 m to 4500 m: Reduction of the max. ambient temperature by 0.1 °C per 100 m elevation
Air pressure	106 kPa to 58 kPa (0 m to 4500 m)
Relative humidity, operation	Standard: 0 % to 100 % noncondensing Extended Climate: 0 % to 100 % with temporary condensation
Pollution degree acc. IEC 61010-1	Standard: 2, noncondensing Extended Climate: 2
Vibration	6 g (14.1 Hz to 500 Hz) 7.5 mm amplitude (2 Hz to 14.1 Hz) Test duration: 15 h
Shock	45 g max. (test scope 18 shocks) 20 g permanently (test scope 6000 shocks)
Approvals/certificates	
Product safety	CE, UKCA cULus (NRAQ, NRAQ7)
Hazard area operation	ATEX: Ex II 3G Ex ec IIC Gc
Maritime	ABS, BV, DNV, KR, LR, NK, RINA: in preparation
Hazardous substances and waste treatment	RoHS, RoHS China, REACH, WEEE
Quality management	ISO 9001 for development and production
Engineering	
Configuration tool	SolutionCenter (≥ V2.85)
Firmware package update	Yes (via SolutionCenter or console interface on the head module)
Mounting/installation	
Mounting type	Inserting and screwing onto the backplane with integrated M4 screw
Ground connection for protection class I	No
Dimensions	
Number of slots	1
Size unpacked W × H × D	95.7 mm × 152.5 mm × 23.3 mm
Mass unpacked	285 g

Order data

Part type designation	Part number	Description
UIO108	00040911-00	Universal analog/digital input/output module system M100 Configurable: 8x analog In ±0.01 V, 0.1 V, 1 V, 10 V, ±20 mA, 4 mA to 20 mA; thermocouples, Pt100/Pt1000, 16 bit; analog Out ±10 V, 0 V to 10 V, 4 mA to 20 mA, 0 mA to 20 mA, 0 to 2 mA, 0 to 200 µA, 14 bit; digital In 24 V sink/source, counter, encoder, 150 kHz; digital Out 24 V DC / 100 mA, 125 kHz, highside/lowside/pushpull, PWM / start-/hold-up pulsing; 0 to 8 additional channels depending on the signal type required, synchronization, time triggered output, time stamping, oversampling, module-to-module communication transmitter and receiver, isolated from system, without terminal block
UIO108 EC	00042166-00	Like UIO108 with Extended Climate Range

Accessories

Part type designation	Part number	Description
BPR1nn	00039235-nn	Backplane for DIN-rail mounting Active backplane system M100: BPR1nn with nn = 04 to 16 slots in increments of 1, as well as 20, 24, 28, 32 slots, for DIN-rail mounting; delivery without backplane slot covers and without mounting rail
BPR1nn EC	00039236-nn	Like BPR1nn; Extended Climate Range
BPS1nn	00039237-nn	Backplane for direct screw mounting Active backplane system M100: BPS1nn with nn = 04 to 16 slots in increments of 1, as well as 20, 24, 28, 32 slots, for direct screw mounting; delivery without backplane slot covers and without screws
BPS1nn EC	00039238-nn	Like BPS1nn; Extended Climate Range
TPI100_W36_P3.45_Cgy_L1to36		Signal terminal block Completely removable terminal block, push-in spring connector for system M100, 36-way/contacts, pitch 3.45 mm, female, conductors flexible 0.2 mm² to 1.5 mm² (24 to 16 AWG), solid 0.2 mm² to 1.5 mm² (24 to 16 AWG), with wire end ferrules 0.25 mm² to 1.5 mm² (23 to 16 AWG), stripping length: 10 mm, rating: 160 V / 8 A per contact, connector color: gray, push-release: yellow, labeling: 1 to 36
TPI100_W4_P5.0_Cgy_Lsup		Supply terminal block Completely removable terminal block, push-in spring connector for system M100, 4-way/contacts, pitch 5.0 mm, female, conductors flexible 0.2 mm² to 2.5 mm² (24 to 14 AWG), solid 0.2 mm² to 1.5 mm² (24 to 16 AWG), with wire end ferrules 0.25 mm² to 1.5 mm² (24 to 16 AWG), stripping length: 10 mm, rating: 300 V / 8 A per contact, connector color: gray, push-release: yellow, labeling: 1+/1-/2+/2-
TKP106		Keying element Keying element for signal terminal blocks and supply terminal blocks TPI100 for system M100, plastic ring with 6 keying elements
TPI100_W36_W4_Set [1)]	00042499-00	Terminal block set for M100 HD modules: • 1x TPI100_W36_P3.45_Cgy_L1to36 • 1x TPI100_W4_P5.0_Cgy_Lsup • 2x TKP106

[1)] *All components of the set are also available in bulk packages.*