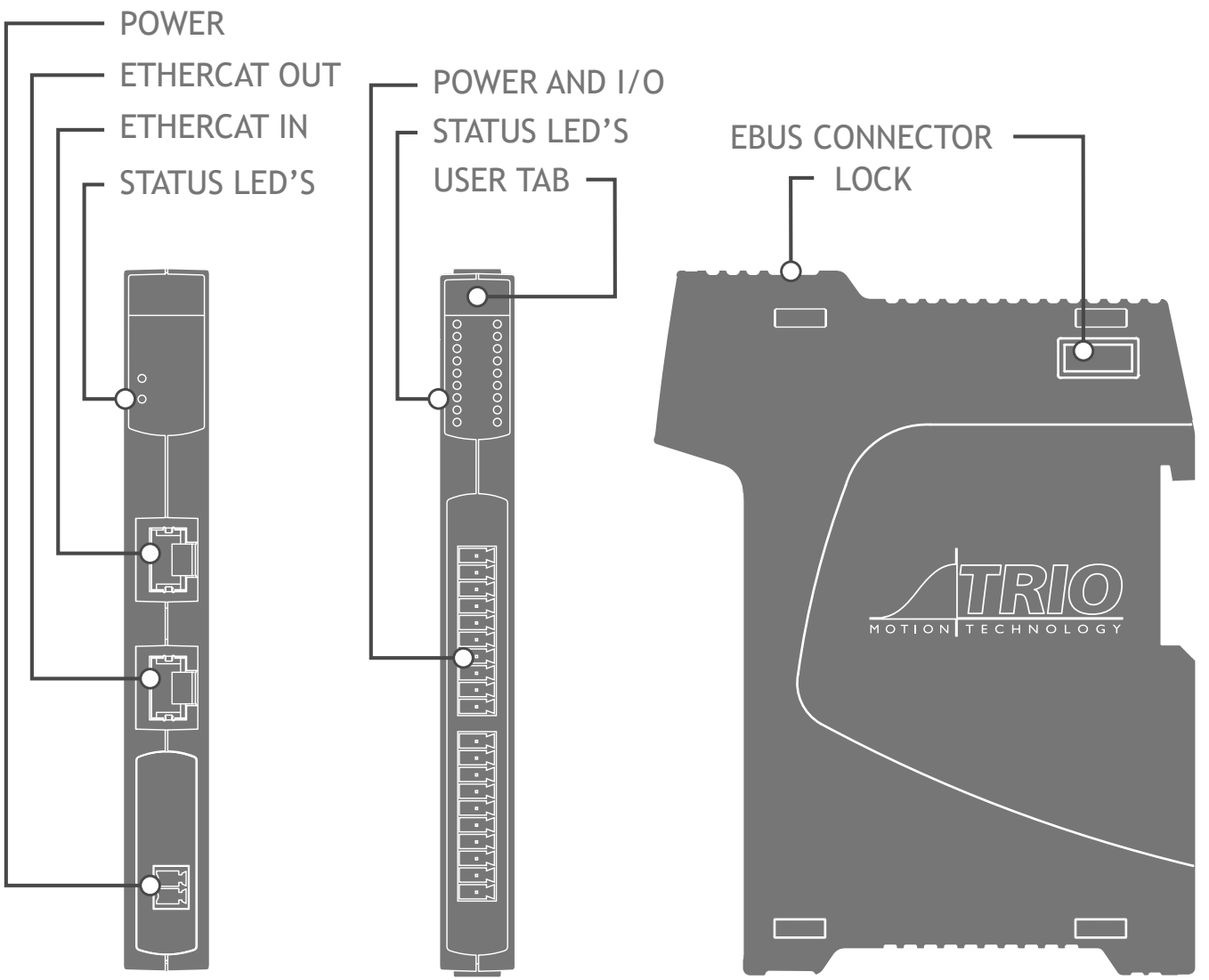


QUICK START GUIDE
FLEXSLICE MODULES

P366 | P371 | P372 | P375 | P376 |P377 | P378 | P379

DESCRIPTION

The Flexslice system makes available a selection of digital and analogue I/O terminals as well as motion modules with pulse + direction outputs designed for precise positioning of stepper and servo motors via suitable drive technology. The digital I/O modules have high-speed functionality, with ON/OFF delays of 210 µs max, 75 µs minimum. In addition, analogue modules and axis modules may be fitted to make a superbly tailored system that can be placed remotely from the master if needed.

All Flexslice modules support automatic addressing with the master able to automatically detect and configure the modules on startup. The bus coupler supports up to 16 input/output modules which have a positive mechanical lock and bus connector, making a reliable EBUS connection through the backplane. The complete assembly can be DIN rail mounted.

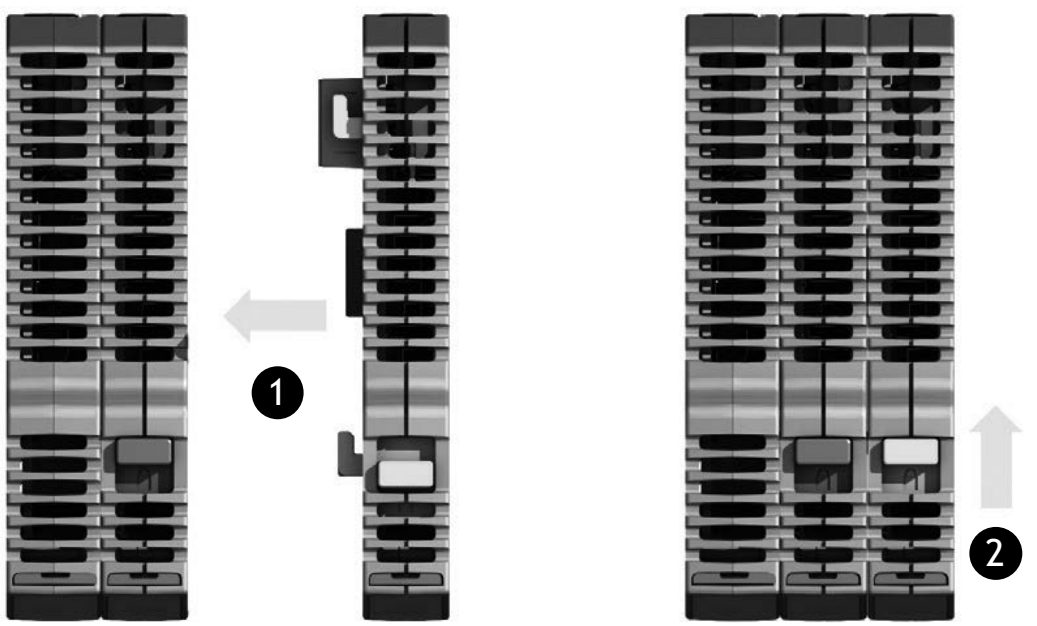
ASSEMBLING THE SYSTEM

One station consists of a P366 coupler and up to 16 Flexslice EtherCAT modules.

1. Align a Flexslice Module against the right hand side of the P366 Coupler Module.

2. Slide back the “click-to-lock” mechanism into position.

Removal of Flexslices is the opposite of this procedure.

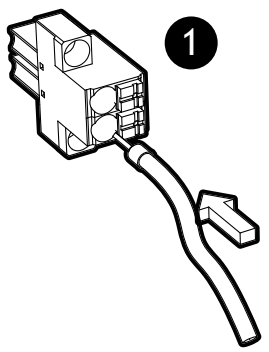


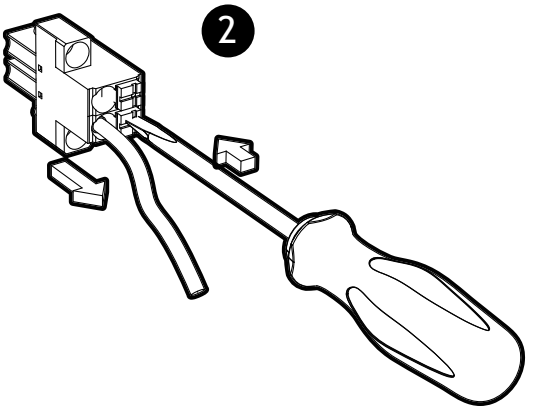
CONNECTORS

Power (24V) connector:

Note: Use ferrules on all wires for best connection.

1. Connection: Push wire into hole of connector. No tools are necessary.
2. Removal: Push screwdriver against coloured button to release wire and pull wire out.

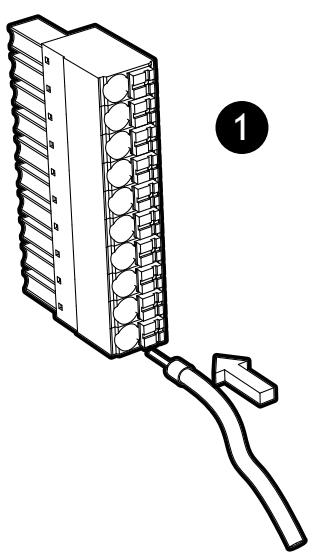


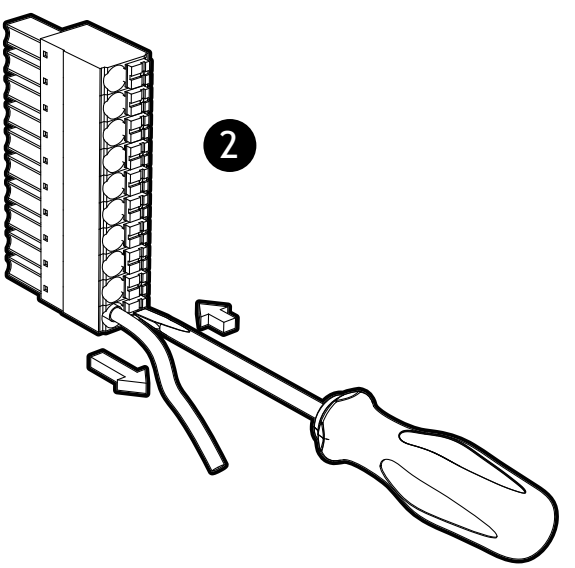


Data Connection (all modules):

Note: Use ferrules on all wires for best connection.

1. Connection: Push wire into hole of connector. No tools are necessary.
2. Removal: Push screwdriver against coloured button to release wire and pull wire out.

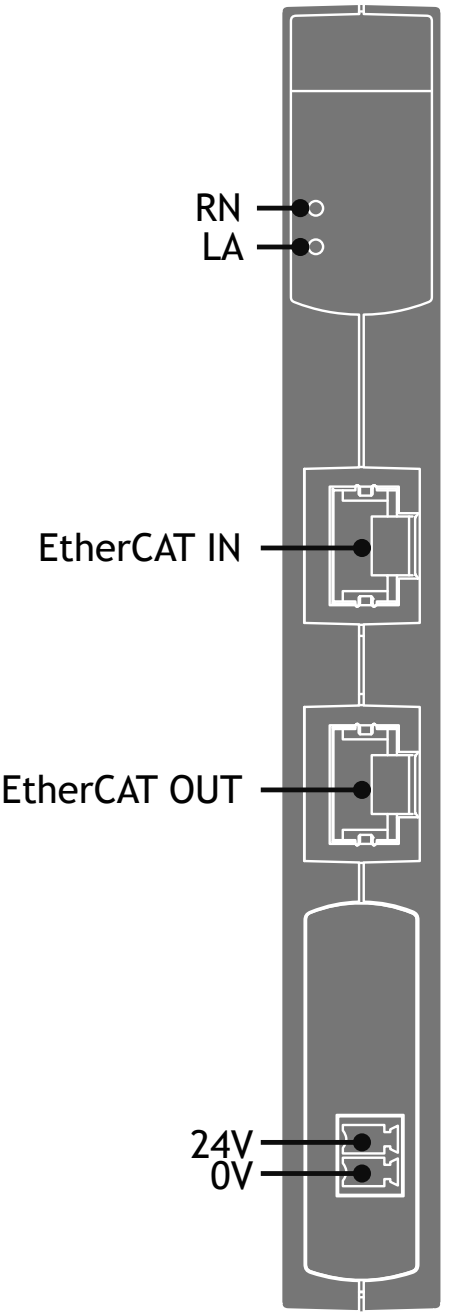




COUPLER MODULE (P366)

The P366 Flexslice EtherCAT Coupler connects EtherCAT with the EtherCAT I/O slices. The coupler converts the passing telegrams from Ethernet 100BASE-T to EBUS signal format.

The coupler is connected to the network via the upper Ethernet interface. The lower RJ45 socket may be used to connect further EtherCAT devices in the same strand. IThe P366 coupler can be installed at any position in the EtherCAT network, making it suitable for operation close to the master or at a remote position.



CONNECTIONS

Power Supply	24V dc (±20%) Class 2 transformer or power supply, 0.8A min
EtherCAT In	RJ45
EtherCAT Out	RJ45

LED'S

RN Green "RUN" LED

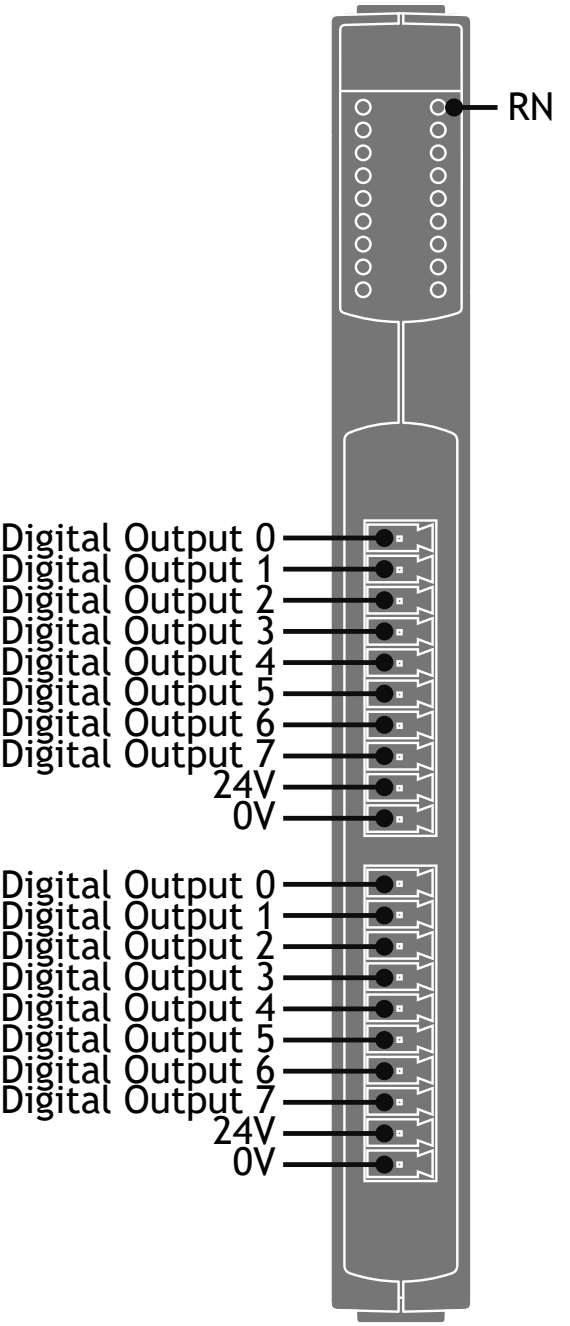
LA EBUS Link/Act LED

16-OUT PNP MODULE (P371)

The P371 digital output slice connects the binary control signals from the *Motion Coordinator* to the machine's output devices at 24V dc. All 16 outputs are source (pnp) type and have electrical isolation. Outputs and power connection are via 2 x single-row push-in connectors. The Flexslice module indicates the output signal states via LEDs.

CONNECTIONS

Power Supply	24V dc (±20%) Class 2 transformer or power supply
Output bank 1	8 x 24V dc Outputs, 0.5A max per channel
Output bank 2	8 x 24V dc Outputs, 0.5A max per channel
Max current	4 Amps per bank
Isolation Outputs to EBUS	1,000 V dc
Isolation between banks	1,000 V dc

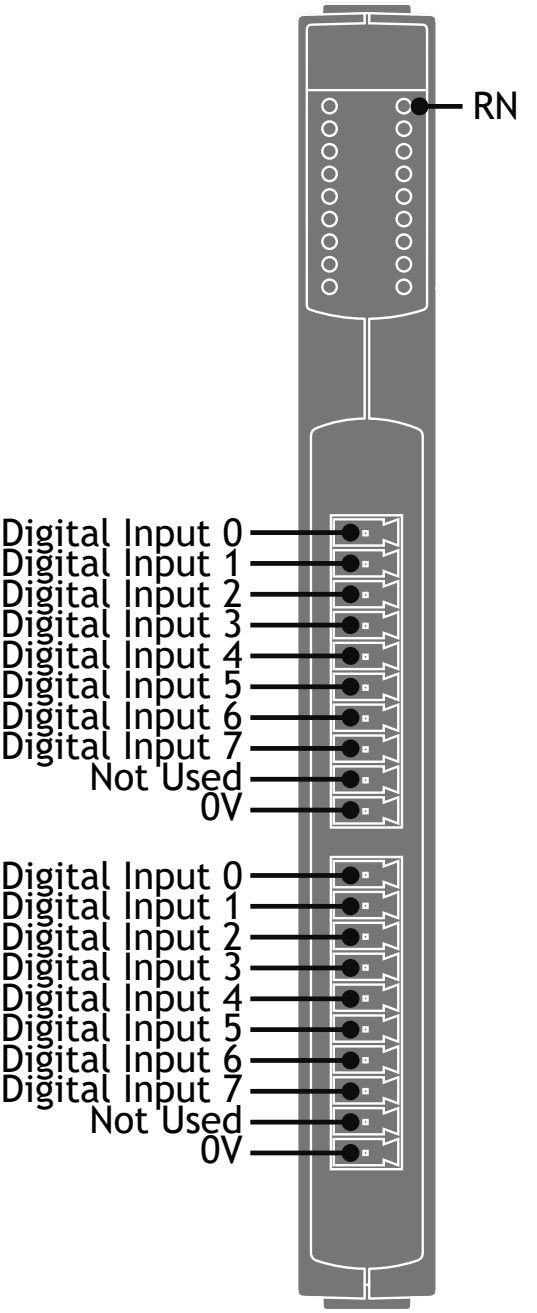


LED'S

RN	Green "RUN" LED
0 - 15	Yellow LEDs Output status

16-IN PNP MODULE (P372)

The P372 digital input slice connects 24V dc signals from devices on the machine to the binary control registers in the *Motion Coordinator*.
All 16 inputs are source (pnp) type and have electrical isolation. Inputs and power connection are via 2 x single-row push-in connectors. The Flexslice module indicates the input signal states via LEDs.



CONNECTIONS

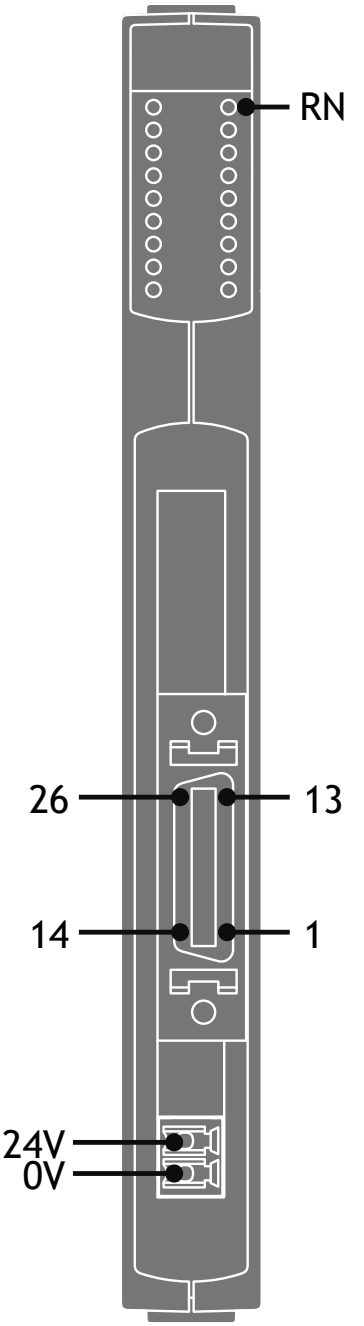
Power Supply	None
Input bank 1	8 x 24V dc Inputs, 3.5mA typ, 0V common
Input bank 2	8 x 24V dc Inputs, 3.5mA typ, 0V common
Isolation Outputs to EBUS	1,000 V dc
Isolation between banks	1,000 V dc

LED'S

RN	Green "RUN" LED
0 - 15	Yellow LEDs Input status

3 AXIS STEP / ENCODER (P375)

The P375 Flexslice 3 Axis Step /Encoder Module controls up to 3 Stepper motors with Pulse/Direction/Enable or or encoder with A, B and Z inputs for each axis. There is also one global watchdog output independent from the axis configuration.



CONNECTIONS

Power Supply	24V dc (±20%) Class 2 transformer or power supply
Axis connector	26 way MDR with latch

Pin	Function	Pin	Function
26	WDOG+	13	WDOG-
25	0V EXT	12	B/DIR2-
24	5V EXT	11	B/DIR2+
23	Z/ENB2-	10	A/STP2-
22	Z/ENB2+	9	A/STP2+
21	0V EXT	8	B/DIR1-
20	5V EXT	7	B/DIR1+
19	Z/ENB1-	6	A/STP1-
18	Z/ENB1+	5	A/STP1+
17	0V EXT	4	B/DIR0-
16	5V EXT	3	B/DIR0+
15	Z/ENB0-	2	A/STP0-
14	Z/ENB0+	1	A/STP0+

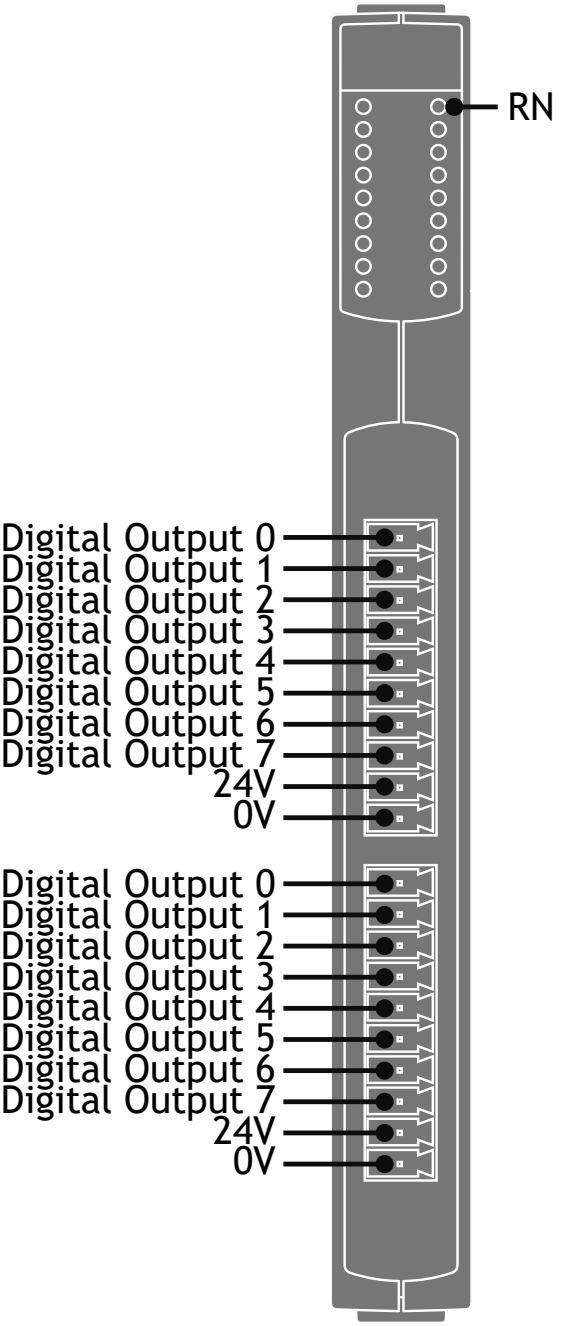
LED'S

WD Red "WDOG" LED

0 - 8 Yellow LEDs status

16-OUT NPN (P376)

The P376 digital output slice connects the binary control signals from the *Motion Coordinator* to the machine's output devices, such as relays, contactors, valves, lamps etc. at 24V dc. All 16 outputs are sink (npn) type and have electrical isolation. Outputs and power connection are via 2 x single-row push-in connectors. The Flexslice module indicates the output signal states via LEDs.



CONNECTIONS

Power Supply	24V dc (±20%) Class 2 transformer or power supply
Output bank 1	8 x Outputs, 24V dc 1.0A max per channel
Output bank 2	8 x Outputs, 24V dc 1.0A max per channel
Max current	4 Amps per bank
Isolation Outputs to EBUS	1,000 V dc
Isolation between banks	1,000 V dc

LED'S

RN Green "RUN" LED

0 - 15 Yellow LEDs Output status

16-IN NPN (P377)

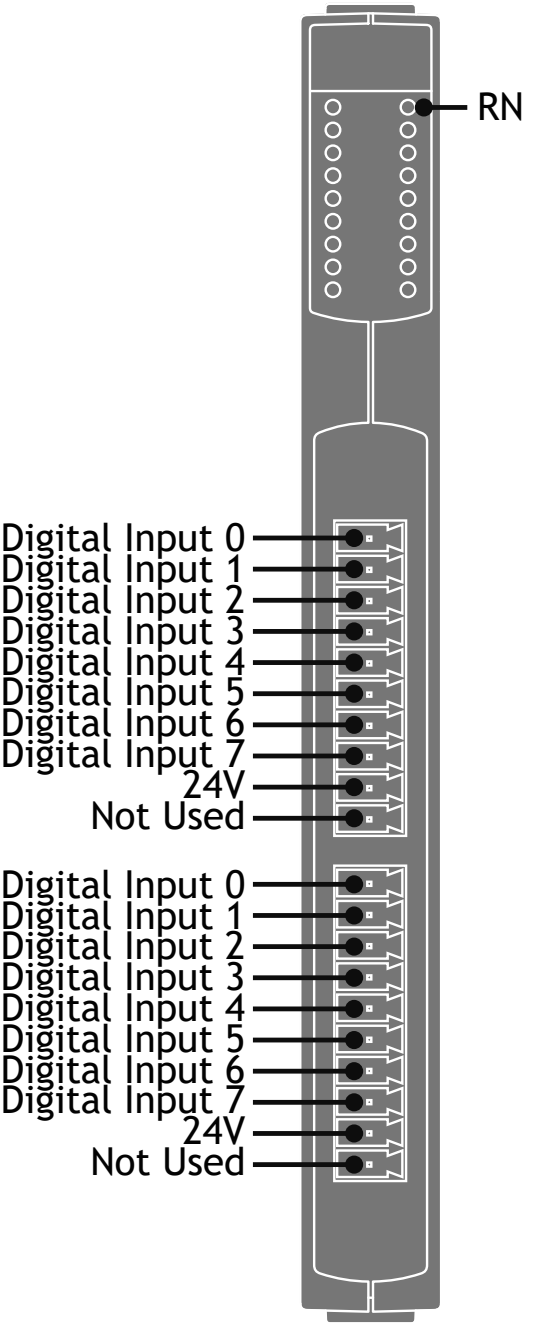
The P377 digital input slice connects 24V dc signals from devices on the machine to the binary control registers in the *Motion Coordinator*. All 16 inputs are sink (npn) type and have electrical isolation. Inputs and power connection are via 2 x single-row push-in connectors. The Flexslice module indicates the input signal states via LEDs.

CONNECTIONS

Power Supply	24V dc (±20%) Class 2 transformer or power supply
Input bank 1	8 x NPN Inputs, 3.5mA typ, 24V dc common
Input bank 2	8 x NPN Inputs, 3.5mA typ, 24V dc common
Isolation Outputs to EBUS	1,000 V dc
Isolation between banks	1,000 V dc

LED'S

RN	Green "RUN" LED
0 - 15	Yellow LEDs Intput status



8 ANALOGUE OUTPUTS (P378)

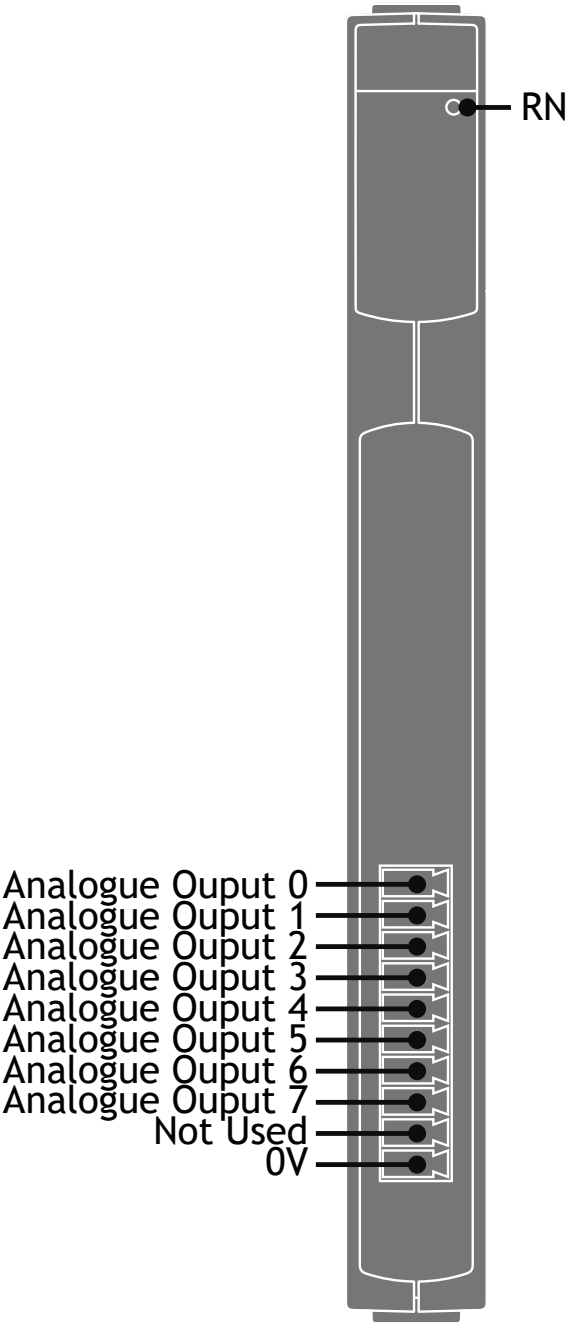
The P378 Flexslice 8 Analogue Output module has eight programmable voltage range output terminals, each digitised to a resolution of 12 bit. The 8 single ended outputs have a common 0V potential and are brought out to a single row push-in connector.

CONNECTIONS

Power Supply	None
Analogue Outputs	8 x +/-10V, 0 … +10V
Output current	5mA (max)
Output Resistance	16Ω
Isolation Outputs to EBUS	1,000 V dc

LED'S

RN Green "RUN" LED



8 ANALOGUE INPUTS (P379)

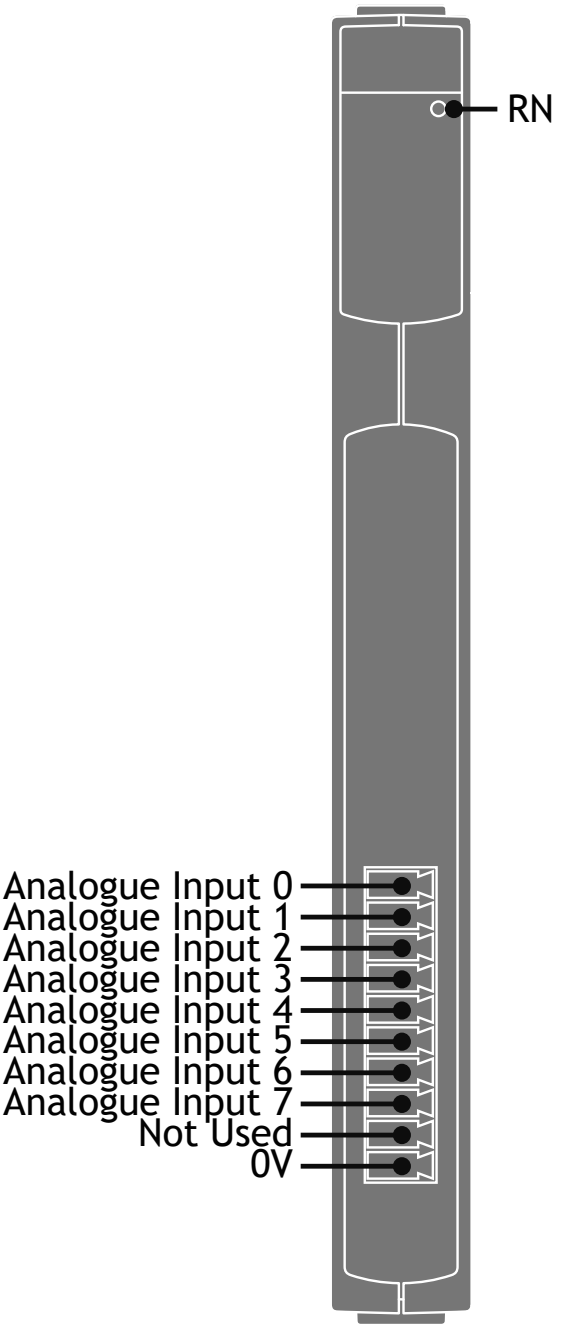
The P379 Flexslice 8 Analogue Input module has eight programmable voltage range input terminals, each digitised to a resolution of 12 bit. The 8 single ended inputs have a common 0V potential and are brought out to a single row plug-in screw terminal block.

CONNECTIONS

Power Supply	None
Analogue Inputs	8 x +/-10V, 0 … +10V
Overvoltage protection	+/- 25V
Input resistance	>31kΩ
Isolation Outputs to EBUS	1,000 V dc

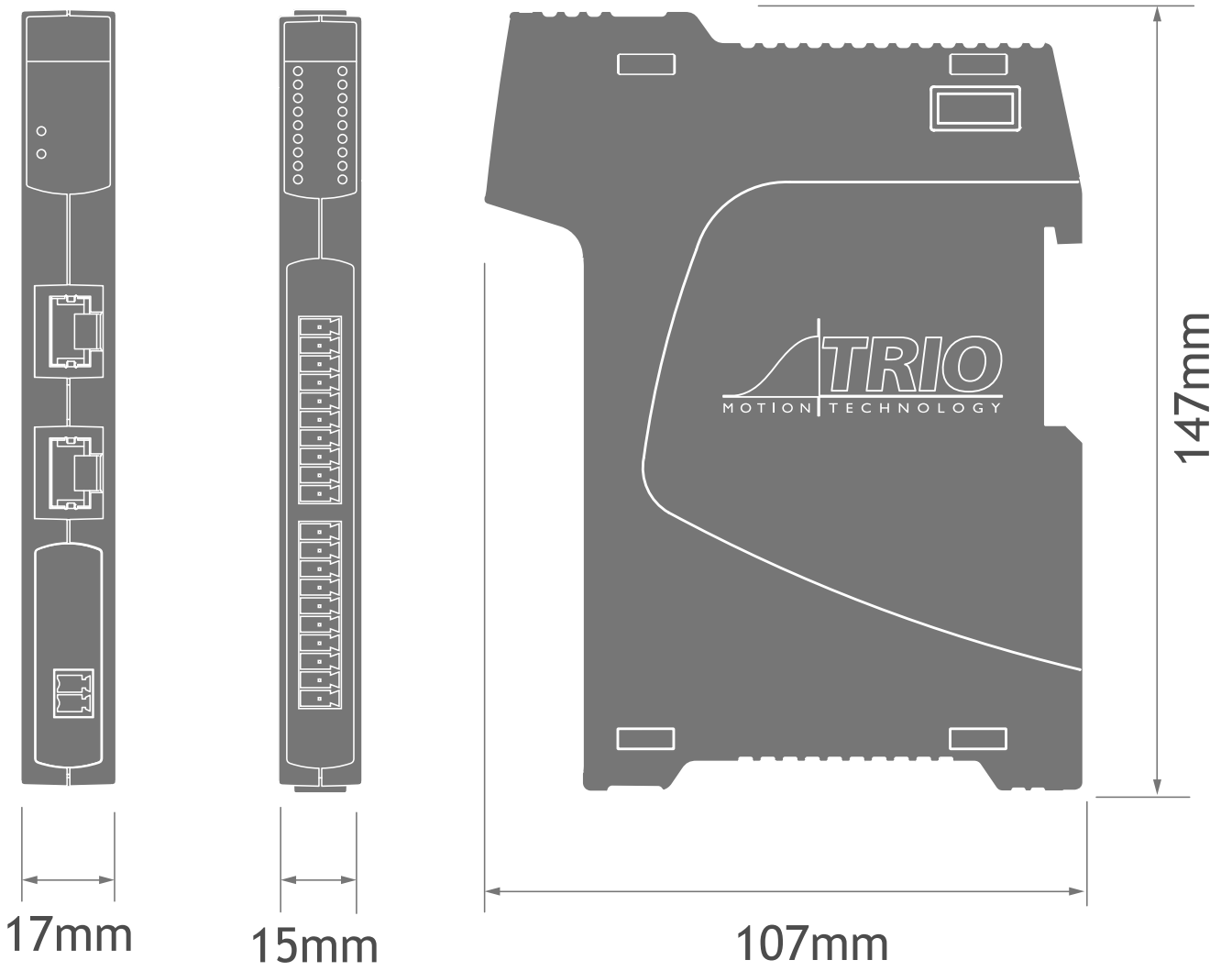
LED'S

RN Green "RUN" LED



DIMENSIONS

P366 Coupler P367 - P379



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CAD data Drawings to aid packaging and mounting are available in various formats from the Trio web site. Products should be wired by qualified persons.
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Quick Start v1 November 2016