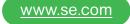


The future-ready I/O system for data aggregation







Discover Modicon

Edge control for industrial internet of things (IoT)

Modicon IIoT-native edge controllers manage complex interfaces across assets and devices or directly into the cloud, with embedded functional safety and cybersecurity. Modicon provides performance and scalability for a wide range of industrial applications up to high-performance multi-axis machines and high-available redundant processes.

Explore our offer

- Modicon HVAC Controllers
- Modicon PLC
- Modicon Motion Controllers
- Modicon PAC
- Modicon Edge I/O
- Modicon I/O
- Modicon Networking
- Modicon Power Supply
- Modicon Wiring
- Modicon Safety



Quick access to product information

Get technical information about your product



Each commercial reference presented in a catalog contains a hyperlink. Click on it to obtain the technical information of the product:

- Characteristics, Dimensions and drawings, Mounting and clearance, Connections and schemas, Performance curves
- Product image, Instruction sheet, User guide, Product certifications, End of life manual

Find your catalog

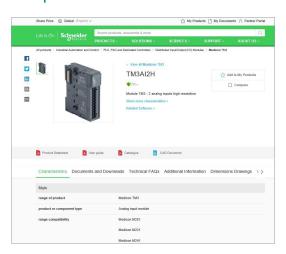


- > With just 3 clicks, you can access the Industrial Automation and Control catalogs, in both English and French
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Select your training



- > Find the right <u>Training</u> for your needs on our Global website
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- · Up-to-date catalogs
- Embedded product selectors, 360° pictures
- Optimized search by commercial references





General content

Modicon Edge I/O NTS

The future-ready I/O system for data aggregation

	Introduction to EcoStruxure Industry
	I/O systems for Machine and PAC controllers
	Industrial Automation controllers
•	System components Overview
	Available, Convenient
	Integrated
	Cybersecure, Flexible
	Plant architectures
	Topology and System components
	Discrete input kits (DC, AC)
	Selection guide
	Discrete output kits (Transistor, Relay, Triac)
	Selection guide
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	Analog input kits
	Selection guide (Voltage/Current, Current)
	Selection guide (Temperature)
	Presentation, Description, Reference30 and 31
	Analog output kits (Current, Voltage/Current)
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	Presentation, Description, Reference34 and 35
	Analog Combo kits (Current, Voltage/Current) Presentation, Description, Reference
•	Motion Expert kits (Encoders, Fast I/Os, Pulse train outputs) *Presentation, Description
	Counting kits (Incremental High-speed counter)
-	Selection guide
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	Field Device Master kits
-	Selection guide
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	Power supply kits
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Schneider Electric's IoT-enabled, plug-and-play, open, secure, interoperable architecture and platform, in Industries, Infrastructures, Data Centers, and Buildings.

Innovation at every level

EcoStruxure is based on a three-tiered technology stack delivering innovation at every level, from connected products to edge control and apps, analytics, and services.

Together with our hybrid segments approach, this enhances your value around safety, reliability, operational efficiency, sustainability, and connectivity across 6 domains of expertise:

- Power
- wer Machine
- IT Plant
- Building
- Grid

Dedicated architectures and IoT

We tailor our solutions in the form of dedicated reference architectures for plants:

- Management systems
- Power systems
- Data center systems
- Industrial plant and machine systems
- Smart grid systems

The Industrial Internet of Things (IIoT) gives an additional boost to technologies. That's why we provide our customers with an IoT-enabled architecture and platform offering simple, reliable, productive, and cost-efficient solutions.

Cybersecurity solutions

Robust cybersecurity protection is a must, and Schneider Electric's solutions can deliver it, regardless of business type or industry.

The vendor-agnostic services provided by our skilled professionals help to protect your entire critical infrastructure. We help to assess your risk, implement cyber-specific solutions, and maintain your onsite defenses over time, while integrating appropriate IT policies and requirements.

This is our difference and your advantage.

Enhanced safety

With the release of M580 Safety, Schneider Electric further expands the EcoStruxure platform.

This consolidates our position as one of the most trusted industrial safety vendor, with thousands of Modicon and Triconex safety systems protecting the most critical industrial processes globally.





^{*}The Schneider Electric industrial software business and AVEVA have merged to trade as AVEVA Group plc, a UK listed company.
The Schneider Electric and Life is On trademarks are owned by Schneider Electric and are being licensed to AVEVA by Schneider Electric.

2

The future-ready I/O system for data aggregation

I/O systems for Logic, Motion and PAC controllers

he future-ready I/O system for data aggregation Modicon Edge I/O NTS

> CE, UKCA, cULus, RCM, EAC (Pending)

> Power generation market (Pending)

> EU RO Mutual Recognition (Pending)

> Industry Market Zone B, Light Industry (Pending)

> Railway Rolling stock, Railway Stationary (Pending)

ommon platform of modules for Modicon M580 and Modicon M340 PACs





or 100...240 VAC

Yes

Yes

Yes

Yes

Yes

Yes

> Counting

> Time-stamping

> Frequency input

> Safety Redundant power supply

> Incremental encoders (10 kHzand 60 kHz)

By removable screw terminal blocks and spring terminal blocks

> SSI encoder

> Weighing

> Safety I/O

> Cybersecurity

> Web Server

Yes

> CE, UL, CSA, RCM, EAC, UKCA

> SIL3 standards according to IEC 61508

> Power generation market: IEC 61000-6-5, IEC 61850-3

Hazardous Location Class I Division 2 Groups ABCD and for ATEX/UKEX/IECEx zone 2/22

> Merchant navy: IACS E10 and agencies: ABS, BV, DNV, GL, LR, RINA, RMRS, and CCS

> Embeded power supply module: 24 VDC isolated, or 24...48 V dc isolated, or 100...150 VDC,

With bus expansion modules (transmitter and receiver), backplane, and bus expansion cable

Up to 7 expansion racks maximum, depending on the CPU performance level

|--|

ications and ards (Depending model)	International certifications
	> Safety standards

Safety level Marine certification

Railway certification

Sercos III bus

Expert I/O

AS-interface Master

> EU RO Mutual Recognition

> External 24 VDC (Power supplied by the controller via the bus expansion connector)

With bus expansion modules (transmitter and receiver) and bus expansion cable

Up to 7x modules managed in 2 ms, 14x modules maximum

EtherNet/IP Yes CANopen bus Yes Modbus Serial line Yes Modbus TCP Yes

Profibus DP bus I/O-Link Master Modbus TCP OPC UA Fiber converter Discrete I/O Yes Analog I/O

> TeSys motor starter

> High speed counting Safety I/O > Functional safety I/O modules for control of Emergency stop, Switches, Pressure-sensitive mats and edges, Solid-state output safety light curtains, and Pressure sensors with PNP+PNP or

PNP+NPN outputs Counting I/O > Cybersecurity Web Server

On a symmetrical DIN rail _rand on plate or panel with dedicated accessory By removable screw terminal blocks and spring terminal blocks, and Removable HE10 conn. (MII 20)

Logic controllers ■ Modicon M221/M221 Book ■ Modicon M241 ■ Modicon M251 ■ Modicon M262

Motion controllers ■ Modicon M262 Programmable Automation Controllers

DIA3ED2140109EN

> CE, UKCA, RCM, EAC, cULus, cULus Haz. Loc. > EN/IEC 61131-2, CSA C22.2 No 142, ANSI/ISA 12-12-01, CSA C22.2 No 213, IEC/EN

> EN/IEC 60947-1, EN/IEC 60947-5-1 (TÜV with Functionnal safety modules) > Up to PL e/Category 4 conforming to EN/ISO 13849-1, and SIL CL3 conforming to

> Embeded power distribution module: 24 VDC

Yes

DIA3FD22

(Pending)

Up to 32 modules per cluster, up to 250 modules per island (1) Up to 32 modules in one cluster managed in 1 ms Yes

> Hazardous Location Class I Division 2 Groups ABCD and for ATEX/UKEX/IECEx zone 2/22

(1) (2)

Explicit only Yes

> Encoder (1) > CAM (1) > Encoder generator (1) > Fast I/Os (1)

> Pulse outputs (1 Safety I/O (2)

> Safety Redundant power supply (2) > High-speed counter (250 kHz), with reflex output

> Cybersecurity > Web Server > Integrated protection and diagnostics

On DIN rail directly (Top hat type TH35-7.5 rail IEC 60715, Top hat type TH35-15 rail IEC 60715) On rack with backplane (Rack can be mounted on a panel or a plate) By removable screw terminal blocks and spring terminal blocks

Yes ■ Modicon M241 (1)

Modicon M262

■ Modicon M660 (2) Modicon M580 ■ Modicon M340

■ Modicon M251 (1)

■ PacDrive LMC Eco/Pro2

■ Modicon M580



Modicon PLC Configurator

Select your architecture of controller and I/O by usage and application, Connectivity, services and IIOT (Protocols, WeB, and communication services), I/Os, and Power supply



Modicon Edge I/O NTS The future-ready I/O system for data aggregation

Industrial Automation controllers

Industrial	Applications	Controllers for industrial machine	Controllers for industrial machines									
Automation controllers	Туре	Logic controllers			Logic / Motion controllers	Motion controllers	Advanced iPC* Motion Controllers	Mid range PLC for industrial process and infrastructure				
	Range	Modicon M221/M221 Book	Modicon M241	Modicon M251	Modicon M262	PacDrive LMC Eco, LMC Pro2	Modicon M660 (2)	Modicon M340	Modicon M580			
							*industrial PC					
Consult the catalog		DIA3ED2140106EN	DIA3ED2140107EN	DIA3ED2140108EN	DIA3ED2180503EN	DIA7ED2160303EN	DIA3ED2241201EN	DIA6ED2110104EN	DIA6ED2151012EN			
Memory		640 KB RAM, 2 MB Flash	64 MB RAM, 128 MB Flash	64 MB RAM, 128 MB Flash	192 MB RAM, 256 MB Flash	128 KB to 256 KB NV RAM, 512 MB DDR2 to 1 GB DDR3L	Up to 8 GB RAM (depending on processor type)	1792 KB or 3584 KB internal RAM (depending on processor type)	64 MB RAM			
Supply voltage		24 VDC or 100240 VAC	24 VDC or 100240 VAC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC, 2448 VDC, 125 VDC, 100	240 VDC, or 100240 VAC			
Communication	Embedded communication fieldbus a networks	> EtherNet/IP Adapter > Modbus TCP > RS 232/RS 485 Serial Link > Mini USB-B programming port	> EtherNet/IP > Modbus TCP > CANopen (master) and SAE J1939 > Serial Link > Mini USB-B programming port	> EtherNet/IP > Modbus TCP > CANopen (master) and SAE J1939 > Serial Link > Mini USB-B programming port	EtherNet/IP Modbus TCP Sercos III Serial Link Mini USB-B programming port	> EtherNet/IP > Sercos III > CANopen > Profibus > Profinet > EtherCAT	> PROFINET > EtherCAT > EtherNet/IP > OPC UA FX (2) > Sercos III	> EtherNet/IP > Modbus TCP > CANopen > Serial Link > Mini USB-B programming port	> EtherNet/IP > Modbus TCP > CANopen > Profibus DP > FactoryCast > DNP3 (RTU) > Global Data > Serial Link > AS-Interface > Mini USB-B programming port			
	OPC Unified Architecture (OPC UA)	_	Server	Server	Server / Client (encrypted)	Server / Client (encrypted)	Client	Client	Client			
	Cybersecurity	With external firewall	With external firewall	With external firewall	Embedded	With external firewall	Embedded	Embedded	Embedded			
	Optional communication fieldbus and networks	s 1 Serial Link	> Ethernet > Profibus DP	> Ethernet > Profibus DP	 Ethernet, EtherNet/IP Adapter CANopen Master 	> CANopen > Profibus DP > RT-Ethernet	> TSN Ethernet (2) > Sercos III > Ethernet/IP > PROFINET > Ethercat	> EtherNet > Modbus TCP > Serial Link > FactoryCast Modbus/TCP > RTU > AS-Interface	> EtherNet/IP and Modbus TCP > Factory cast > IP Forwarding > OPC UA > IEC 61850 > DNP3 / IEC 60870-5-101/104 > Global Data			
Embedded I/O (nu	mber and type)	> Up to 40 logic inputs > 2 analog inputs > Up to 16 relay outputs > Up to 16 transistor outputs	 Up to 24 logic inputs Up to 16 transistor outputs Up to 16 relay outputs Up to 8 high speed inputs Up to 4 high speed outputs 	-	> 4 fast digital inputs > 4 fast digital outputs	 > Up to 20 digital inputs > Up to 16 touch probe inputs > Up to 4 interrupt inputs > Up to 2 analog inputs > Up to 16 digital outputs > Up to 2 analog outputs 	> 4 digital inputs	Up to 1024 discrete I/O Up to 256 analog I/O Up to 36 application-specific channels (process counter, motion control and serial link, or RTU)	Up to 6,144 discrete I/O Up to 1,536 analog I/O Up to 216 application-specific channels (process counter, motion control, and serial link or RTU)			
Embedded Safety	/ Severe environment	-/-	-/-	-/-	Yes / –	Yes / –	Yes / -	Yes /Yes	Yes /Yes			
Synchronized axe	s	-	-	-	Up to 24 synchronized axes	Up to 130 synchronized axes	> Up to 130 synchronized axes on Sercos III	-	-			
Dedicated configu	ration software	EcoStruxure Machine Expert - Basic	EcoStruxure Machine Expert				EcoStruxure Automation Expert - Motion Module (2)	EcoStruxure Control Expert				
Compatibility	Local I/O	■ Modicon TM3	■ Modicon TM3	■ Modicon TM3	■ Modicon_TM3	_	-	■ Modicon X80	■ Modicon X80			
with /O systems	Remote I/O	■ Modicon TM3	■ Modicon TM3	■ Modicon TM3	■ Modicon TM3	-	-	■ Modicon X80	■ Modicon X80			
(click on the <u>range</u> name to open the catalog)	Distributed I/O on Ethernet	■ Modicon TM3	■ Modicon TM3 ■ Modicon Edge I/O NTS ■ Modicon TM5	■ Modicon TM3 ■ Modicon Edge I/O NTS ■ Modicon TM5	■ Modicon TM3 ■ Modicon Edge I/O NTS ■ Modicon TM5	■ Modicon Edge I/O NTS ■ Modicon TM5	■ Modicon Edge I/O NTS	■ Modicon X80 ■ Modicon Edge I/O NTS	■ Modicon X80 ■ Modicon Edge I/O NTS			
	on CANopen	-	■ Modicon TM3	■ Modicon TM3	■ Modicon TM3 ■ Modicon TM5 & Modicon TM7	■ Modicon TM3 ■ Modicon TM5 & Modicon TM7	-	■ Modicon X80	■ Modicon X80			
	on Sercos	-	-	-	■ Modicon Edge I/O NTS (1) ■ Modicon TM5	■ Modicon Edge I/O NTS (1) ■ Modicon TM5	■ Modicon Edge I/O NTS	-	-			
	on Modbus Serial L	ine ■ Modicon TM3	■ Modicon TM3	■ Modicon TM3	■ Modicon TM3	-	-	■ Modicon X80	■ Modicon X80			
	on Profibus	-	-	-	-	-	-	■ Modicon X80	■ Modicon X80			
	on AS-Interface ma				- M. P. THO (1. 1. 1. 1. 1. 1.		- M. F. F. J. VO. 1770	Modicon X80	Modicon X80			
	Safety I/O	■ <u>Modicon TM3</u> (functionnal safety)	■ <u>Modicon TM3</u> (functionnal safety)	■ <u>Modicon TM3</u> (functionnal safety)	■ Modicon TM3 (functionnal safety) ■ Modicon Edge I/O NTS (1) ■ Modicon TM5 & Modicon TM7	Modicon Edge I/O NTS (2) Modicon TM5 & Modicon TM7	■ Modicon Edge I/O NTS	■ Modicon X80	■ Modicon X80			
Configuration tool			Modicon PLC Configurator Select your architecture of control	oller and I/O by Usage and applicati	on, Connectivity, services and IIOT (F	Protocols, WeB, and communication s	ervices), I/Os, and Power supply					

The future-ready I/O system for data aggregation

System components

- Modicon Edge I/O NTS is an I/O system designed to remain relevant and effective as technology and data requirements evolve over time.
- This implies that the I/O (Input/Output) system can gather and consolidate data from various sources in a way that adapts to future advancements and changes in data technology.
- This could involve scalability, flexibility, and compatibility with emerging data protocols and standards, ensuring that the system can continue to aggregate and process data effectively in the face of future developments.
- Using open Ethernet protocols, Edge I/O NTS embeds the latest technologies to deliver the best performance, availability, and cybersecurity.



- Modicon Edge I/O NTS provides flexibility and allows you to answer from simple to highly demanding applications.
- The offer is delivered as a kit: a pre-assembly of a base (for mounting on DIN rail, power bus, and data transmission) associated with an electronic module (main function).
- It is composed of I/O modules, Bases, Terminal blocks, Mounting accessories, Labels, Shielding accessories, Spare parts, and Configuration software.
- The type of connection can be selected between spring or screw terminal blocks, equipped with or without articulated transparent plastic cover.

\S

- The offer is available in Standard and Hardened versions
- Standard version: -20 to +60°C (-4 to +140°F)
- Hardened version provides extended operational temperature and conformal coating. allowing it to work in severe environments (up to GX): -40 to +70°C (-40 to +158°F)



Click to open video (1:49)

Modicon Edge I/O NTS is a future ready unified I/O solution tailored for data aggregation.
With its distributed IP20 design, it provides a diverse range of options to

accommodate various applications within a single I/O family, ensuring adaptability and future readiness.

Typical Modicon Edge I/O NTS: Up to 32 modules per cluster, in addition to Network Interface Module, first Power supply and Termination. Up to 250 modules per island (several clusters) (2)

















■ Integrated reflex ouput based ■ Encoder generator



Encoder

■ Fast I/Os

■ Pulse train outputs

CAM











Network Interface modules

- Ensure the communication between controllers and Edge I/O NTS islands
- Embeded webserver: Edge I/O NTS - Web interface
- Explicit OPC UA server

□ EtherNet/IP Adaptor

■ Modbus TCP Server

□ Sercos III (2)

- Comissioning without PLC (2)
- Distribute Bus power supply for internal comsumption of modules

Power Supply modules

- Distribute Field power supply for internal consumption of modules and connected field devices
- Provide protection and diagnostics ensuring modules Protected operate reably and consistently (2)
- Redundant (2)
- Simplified wiring
- □ 24 VDC

- □ Diagnostics (2)

- □ Discrete outputs - 24 VDC Transistor

See page 18

- 100 to 240 VAC Triac

- 24/48/120/230 VAC

- Relay 5 to 125 VDC and 24 V to 240 VAC

- Analog I/O modules
- Voltage Current
- Temperature (RTD, Thermistor or Thermocouple)
- Strain gauge (2)
- With sensor or actuator power HART (Tolerance or Communication) (1)
- Isolated channels

Discrete IO modules

Internal or external field

■ Rich options for different

electrical rating and wiring

power supply

connection

supply

- With diagnostics

Discrete inputs

- 12/24 VDC

- Versatile modules (Current or Voltage configurable per channel) ■ With sensor or loop power
- supply
- Isolated channels

- 0-20 mA, 0/4-20 mA,

- 0-20 mA, 0/4-20 mA

- -10/+10 VDC, 0/+10 VDC

- -10/+10 VDC, 0/+10 VDC

Analog inputs

±20 mA

Combo

See page 26

Analog outputs

- ±5V, 0/1...5V

- ☐ High-speed counter 250 kHz, ☐ RS-422 incremental encoder Exchanges data on with reflex output

- □ Auxiliary inputs 24 VDC

See page 38

■ High-speed counter Module

on dedicated functions

up to 250 kHz

- (1 MHz) □ SinCos (400 kHz)

- - CAMswitch □ Pulse Output (400 kHz)
 - □ Timestamped ■ Oversampled

☐ Hiperface (400 kHz)

See page 37

See page 42

□ IO-Link Master

□ Serial RS-485 (1)

□ Modbus RTU (1)

□ ASCII (1)



- Seamlessly integrate the fieldbuses directly within the I/O islands (no need to add a
- gateway)
 - shielding connection (2)
- Provide flexibility and ease the wiring of modules with additional 0 VDC, 24 VDC or
 - Reserve space physically for future extension

- Cluster termination Mounting accessory
- Vibration

See page 59

- Shielding I abels
- Spring Terminal blocks

See page 58

- with or without cover ■ Screw Terminal blocks
- with or without cover

(1) Available soon. (2) Planned commercialization.

See page 46

General presentation

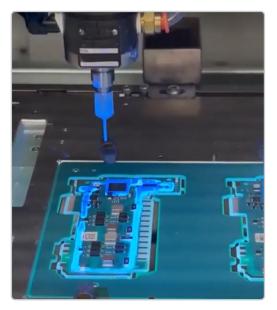
Modicon Edge I/O NTS

The future-ready I/O system for data aggregation

Robust

Performant





Conformal coating: Compliance is applied to each hardened functional module by depositing resin film on the electronic components and on the seal around the module.

Robust

Supporting Features

- > Thermal tolerance
- Standard version: -20 to +60°C (-4 to +140°F) operating temp
 - Hardened version: -40 to +70°C (-40 to +158°F) operating temp
- > Hardened -40 to +70°C with conformal coating
- > Wide range of certifications
 - CE, UKCA, cULus, RCM, EAC (Pending)
 - Industry Market Zone B, Light Industry (Pending)
 - Power generation market (Pending)
 - Hazardous Location (Pending): cULus Haz.Loc Class 1 Div.2, ATEX / IECEx (Zone 2/22), UKEX (UKCA Ex) (Zone 2), CCC Ex (zone 2) (Pending)
 - EU RO Mutual Recognition (Pending)
 - Railway Rolling stock, Railway Stationary (Pending)
- > EMC tolerance: exceed Industrial standards resistance level (IEC 61000-6-2 and IEC 61000-6-4)
- > Vibration tolerance: Up to 2 g (with accessory)
- > Corrosive environment
 - Standard version: G1 (Mild environment), and G2 (Moderate environment)
 - Hardened version: G3 (Harsh environment) and GX (Severe environment)

Details

- > Railway certification as evidence of robustness
- > Choice between stand and Hardened version
- > Less need for environmental conditioning (Air Cond, heaters etc. in panels)
- > I/O layouts can match process geography (altitude)
- > No need to use specific offer to reach high level robustness

Customer Benefits

- > Less cost for environmental conditioning
- > More freedom to place I/O closer to machine signals reducing wiring costs
- > Longer lifecycle

Performant

Supporting Features

- > Synchronized internal bus
- > Simple motion without motion CPU (1)
- > Reflex output in some modules
- > Up to 250 modules per island (2)
- > 16 bits resolution analog

Details

- > Precise control
- > CAMswitch w/o Motion PLC (1)
- > Very fast reaction time (up to 25 µs)
- > High capacity remote I/O islands reduce wiring costs and system complexity
- > High resolution analog value

Customer Benefits

- > Increase Machine productivity speed and throughput
- > Reduce cost of small/simple motion machine
- > More freedom to place the right I/O where it's needed





General presentation

Modicon Edge I/O NTS

The future-ready I/O system for data aggregation

Available

Convenient





Available

Supporting Features

- > Patented passive base reduncing risk of faillure
- > Hot swap
- > Redundant power supply (2)
- > Modules in default don't affect rest of the island
- > Integrated protections and diagnostics
- > RSTP ring network, accepting 1 network faillure

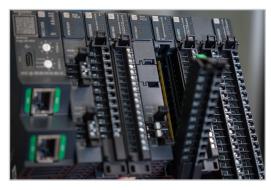
Dotaile

- > Designed for reliability less downtime
- > Reduced MTTF and MTTR/ time to make changes
- > Robust and reliable communications
- > Improve faillure detection, reduce time to start or re-start

Customer Benefits

- > Less production lost to unplanned downtime
- > Faster trouble shooting with less downtime





Convenient

Supporting Features

- > Removable Terminal blocks
- > 1-column arrangement of terminal pins (comfortable wiring)
- > Numbering and easy identification of terminal pins
- > Test probe hole
- > Terminal block stay in place even unplugged
- > Select Screw or Spring, with or without plastic cover
- > Dummy module: reserve the need for future
- > Coding keys: let the user manage for mitigating assembly or wiring mistakes

Details

- > Terminal blocks can be removed allowing more tests and easier than unwiring
- > Wires are easy to insert in right place and to be identified
- > Voltage test still possible even with spring

Customer Benefits

- > Save time during interventions
- > Faster wiring
- > Reduce risk during manipulation and test
- > Ease wiring for people not knowing the offer
- > Safer installation even when terminal blocks are unpluged

The future-ready I/O system for data aggregation Integrated





Modicon PLC Configurator
(Click to access the tool)



Supporting Features

- > Open to Future, Current, Legacy and Third party offers
- > Integrated in Control Expert, Machine Expert, Automation Expert, Automation Device Manager, PLC Configurator, Architecture Builder
- > Dedicated configurator mainly for Third party PLC also accessible from embedded webserver
- > Integrated diagnostics accessible from application and from embedded webserver
- > OPC UA Server (Explicit)

Details

- > A single I/O system for all architectures and eco-systems
- > Smooth journey from Design to Program versus Program from scratch
- > Access to diagnostics shorter downtime
- > Get information in parralel of implicit communication

Customer Benefits

- > Save time and money in design and build phase
- > Potential remote dignostics service offer
- > Free to build best in class machine control systems from best in class components

Software portfolio	
Designation	Minimum version to use
EcoStruxure Machine Expert	V2.3
EcoStruxure Control Expert	V16.1
EcoStruxure Automation Expert	V24.1
EcoStruxure Automation Device Manager	V3.319
EcoStruxure Cybersecurity Admin Expert	V2.4.7

General presentation

Modicon Edge I/O NTS

The future-ready I/O system for data aggregation

Cybersecure

Flexible





Cybersecure

Supporting Features

- > Secure by design
- > Manufacturer certificate for each module
- > Easy to integrate in IT cybersecurity infrastructure
- > Ready for cybersecurity regulation evolution (as Cyber Resilience Act, NIS2.0,...)
- Compliances:
 - GDPR
 - SB327
 - IEC62443-4-1, IEC62443-4-2

Details

Embedded Trust Platform Module (TPM)

- > Secure boot
- > Signed firmware, secure update
- > Device Genuineness
- > Backbone bus with Authenticated communication
- > Encrypted communications (Service)
- > Simple Certificate Enrollment Protocol (SCEP)
- > Centralized User Access Management (RBAC)
- > Access Control list (ACL), embedded firewall
- > Secure logs

Customer Benefits

- > Enhanced product Cybersecurity increases overall machine cybersecurity
- > Less risk of downtime from cyber-attack
- Increased security for remote diagnostics, machine monitoring, communications and other digital transformation activites

Flexible

Supporting Features

- > 100+ Discrete/Analog/Specialist I/O modules (1)
- > Compact + High end (more env. robust)
- > Modbus TCP, EtherNet/IP, Sercos fieldbus network
- > Spring or Screw terminal blocks, with or without cover
- > Same offer for classic, Motion (1), Safety (2), and Hardened I/O
- > Adapted compactness for function provided

Details

- > A single I/O range for plant and machine systems
- > Compact, cost-effective solution or High-end for more features, diagnostics and easier wiring
- > Open IP protocols
- > Choice of termination methods (spring or screw)
- > Right balance between wire compacity and finger capacity to wire and manipulate for maintenance
- > Commissioning without PLC

Customer Benefits

- > Lower spare parts and supply chain costs
- > Less staff training, increased effectiveness
- > Enhanced network flexibility the capability to select the most suitable network to fulfill overall requirements
- Choose modules and terminal blocks that suit your requirements instead of adjusting your needs
- > Meet typical application needs with fewer product references
- > Compact to reduce costs and maintenance usage.

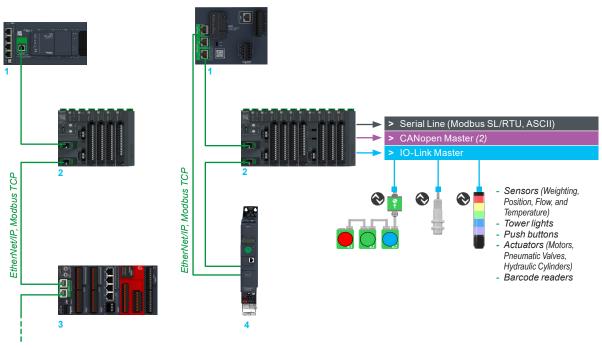




The future-ready I/O system for data aggregation Machine architectures

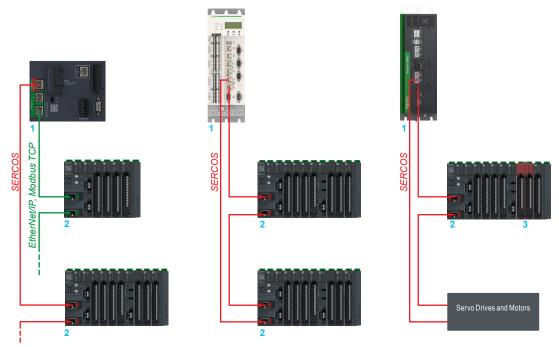
Machine architectures

Modbus TCP and EtherNet/IP



- 1 PLC (Modicon M241, Modicon M262, or Third party controller)
- 2 Modicon Edge I/O NTS: Cluster composed of a Network Interface module, and a Power Supply module, and, according to a modular configuration, Discrete modules, Analog modules, Counting modules, Motion Expert modules, Field device master modules, or Passive modules.
- 3 Modicon TM3
- 4 Altivar Machine ATV320 variable speed drive

Sercos (2), Synchronized, Motion (1) and Safety (2)

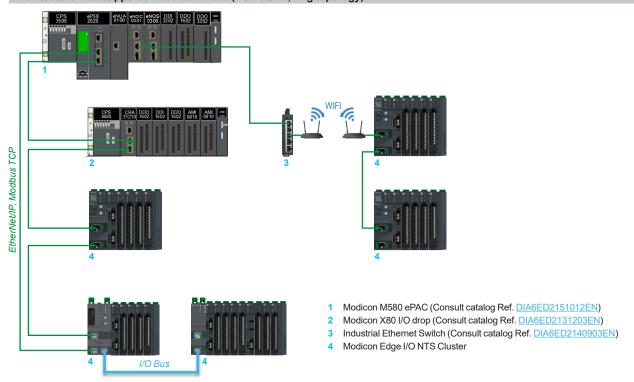


- 1 Motion controller/ Modicon M262, PacDrive LMC, Modicon M660 (2)
- 2 Modicon Edge I/O NTS:Cluster composed of a Network Interface module, and a Power Supply module, and, according to a modular configuration, Discrete modules, Analog modules, Counting modules, Motion Expert modules, Field device master modules, or Passive modules.
- 3 Modicon Edge I/O NTS Integrated safety (2)

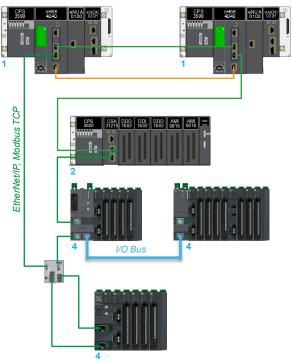
The future-ready I/O system for data aggregation Plant architectures

Plant architectures

Architecture with support of Modicon M580 (Remote IO, ring topology)

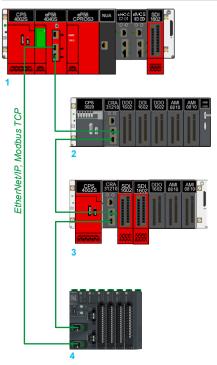


Architecture with Modicon M580 Redundant ePAC (2) (Bumpless CPU switchover)



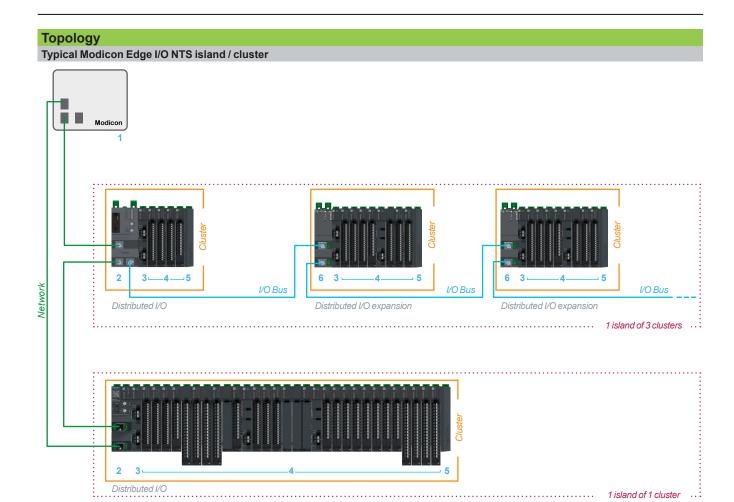
- 1 Modicon M580 Redundant ePAC: Operates with hot-standby CPU (Consult catalog Ref. <u>DIA6ED2151012EN</u>)
- 2 Modicon X80 I/O drop (Consult catalog Ref. <u>DIA6ED2131203EN</u>)
- 3 Industrial Ethernet Switch (Consult catalog Ref. DIA6ED2140903EN)
- 4 Modicon Edge I/O NTS Cluster

Architecture with Safety Modicon M580 ePAC (2)



- 1 Modicon M580 Safety ePAC(Consult catalog Ref. DIA6ED2151012EN)
- 2 Modicon X80 I/O drop (Consult catalog Ref. <u>DIA6ED2131203EN</u>)
- 3 Modicon X80 Safety I/O (Consult catalog Ref. <u>DIA6ED2131203EN</u>)
- 4 Modicon Edge I/O NTS Cluster

The future-ready I/O system for data aggregation Topology



Cluster detailed solution

- 1 PLC
- 2 Network Interface module
- 3 Power Supply module
- 4 Discrete module, Analog module, Counting module, Motion Expert module (2), Field device master module, Passive module
- 5 Cluster Termination
- 6 Bus extender module

- The Cluster is made up of kits (pre-assembled Module and Base). The island is made up of 1 or more Clusters
- □ Up to 25 Clusters per island (1)
- □ Up to 32 Modules per Cluster
- \square Up to 250 Modules per island (1)
- A high-speed Ethernet backbone provides communication and power transmission between modules.
- Fast device replacement in 5 steps:
 - Password Requirement
 - Scan Setup
 - Setup configuration in DHCP name
 - FDR Backup
 - Head replacement

The future-ready I/O system for data aggregation Topology

Topology

System components



- Two versions of the head of a cluster:
- 1 Standard version: -20 to +60°C (-4 to +140°F) operating temp, and 30 mm width
- 2 Hardened version: -40 to +70°C (-40 to +158°F) operating temp, and 45 mm width
 - 3 USB port
 - USB-C as commissioning port, to save configuration for OPC UA Server
 - Access to integrated webserver/ Configurator
 - 4 Two Ethernet ports
 - EtherNet/IP, Modbus TCP and Sercos III (2)
 - Baud rate: 100 Mbits/s, or 1 Gbits/s
 - Redundancy capacity
 - Diagnostics
 - Daisy chain, RSTP
- 5 Marking: mac adress written on the front
- 6 Rotary switches:
 - Manual IP definition
 - DHCE
- 7 LED for maintenance information
- 8 Rotary switch for Cybersecure mode

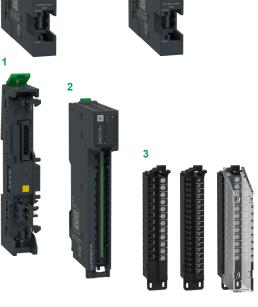




- 1 To distribute Bus Power supply for Network Interface modules (NIM), and modules
- 2 To distribute Field Power supply in a cluster of modules
- Both Hardened: -40 to +70°C (-40 to +158°F) operating temp, and 15 mm (0.59 in) width, with Automatic disjunction



- I/O modules are Discrete, Analog, Counting, Motion Expert (2), Field device master and Passive
- Three parts to operate:
- 1 a base, for mounting on Din rail, easily with one hand
- 2 an I/O module
- 3 a removable terminal block
- Sold as a kit: a Base (1) pre-assembled to a Module (2). The terminal block (3) is to order separately
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation
- Available in two versions
 - Standard version: -20 to +60°C (-4 to +140°F) operating temp
- Hardened version: -40 to +70°C (-40 to +158°F) operating temp
- Completed with a removable terminal block
- to unplug easily for commissioning, maintenance, and testing
- With Spring or Screw connectors, with or without cover



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Discrete inputs (DC, AC)

Function		Discrete inputs								
		The second of th	Billion 1 Billio	Beauty (Baseline)	Scores I	BINDS PARTY AND THE PARTY AND	Section 1	extension to the state of the s	Boston Littlemen	Extraction to the state of the
lumber of Channels		6	8	16	16	16	4	2 (isolated)	4	8
Discrete input voltag		24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VAC or 48 VAC/DC (configurable)	100240 VAC	100120 VAC	100120 VAC
iscrete input logic		Positive logic (si	nk)			Negative logic (source)	-	-	_	-
lumber of channel g	groups	1 group	1 group	1 group	4 groups of 4 channels non isolated	1 group	1 group	2 groups of 1 channel isolated	1 group	1 group
Discrete innut comp	atibility (conforming to IEC61	131-2) 6 Type 3	8 Type 3	16 Type 3	16 Type 3	16 Type 3	4 Type 1	2 Type 1	4 Type 1	8 Type 1
Viring mode	and the second s	1-2-3-wire	1-2-wire	1-wire	1-2-3-wire	1-wire	1-2-3-wire	1-2-3-wire	1-2-wire	1-wire
iscrete input curren	nt	2.5 mA	2.5 mA	2.5 mA	2.5 mA	2.5 mA	24 mA	3.6 mA at 120 VAC, 50 Hz 7.1 mA at 230 VAC, 50 Hz	6.7 mA at 120 VAC 50 Hz	6.5 mA at 120 VAC 50 Hz
oltage/	State 1 guaranteed	1130 VDC	1130 VDC	1130 VDC	1130 VDC	1130 VDC	≥ 34 VAC for 48 VAC ≥ 14 VAC for 24 VAC ≥ 34 VDC for 48 VDC	≥79 V	≥79 V	≥79 V
	State 0 guaranteed	< 5 VDC	< 5 VDC	<5 VDC	< 5 VDC	< 5 VDC	≤ 10 VAC for 48 VAC ≤ 5 VAC for 24 VAC ≤ 10 VDC for 48 VDC	≤40 V	≤20 V	≤ 20 V
Current	State 1 guaranteed	≥ 2 mA (Type 3)	≥ 2 mA (Type 3)	≥ 2 mA (Type 3)	≥ 2 mA (Type 3)	≥ 2 mA (Type 3)	> 2 mA	> 2 mA	> 2 mA	> 2 mA
	State 0 guaranteed	≤1.5 mA	≤1.5 mA	≤1.5 mA	≤1.5 mA	≤ 1.5 mA	< 2 mA	< 2 mA	< 2 mA	< 2 mA
nput reponse time	State 1 to state 0	< 125 µs	< 60 µs	< 125 µs	< 60 µs	< 125 µs	9.28 ms (fixed)	> 11.6 ms	> 11.6 ms	> 11.6 ms
	State 0 to state 1	< 125 µs	< 90 µs	< 125 µs	< 90 µs	< 125 µs	9.28 ms (fixed)	> 5.8 ms	> 5.8 ms	> 5.8 ms
nput protection type	•	Over voltage pro Over current pro Reverse polarity	tection on sensor supply	Over voltage protection	Over voltage protection Over current protection on sensor supply Reverse polarity protection	Over voltage and power protection	-	-	-	-
nput diagnostic		Power supply er Sensor power si		Power supply error per chann	Power supply error per channel Sensor power supply error per		External power supply error pe	er channel		
a alatia w		channel			censor power supply error per	channel	Broken wire error per channel			
solation	Between channels	channel –	-	-	–	channel —	–	1780 VAC	_	-
solation	Between channels Between groups	channel –		-		-		-	_ _	-
solation	Between groups Between channel and bus	- - 1500 VAC	- - 1500 VAC	- 1500 VAC	- - 1500 VAC	- - 1500 VAC	- - 3000 VAC	- 3000 VAC	- 3000 VAC	- 3000 VAC
	Between groups	- - 1500 VAC 1500 VAC	- - 1500 VAC 1500 VAC	- 1500 VAC 1500 VAC	- - 1500 VAC 1500 VAC	- - 1500 VAC 1500 VAC	- - 3000 VAC 3000 VAC	- 3000 VAC 3000 VAC	- 3000 VAC 3000 VAC	- 3000 VAC 3000 VAC
Synchronization (2)	Between groups Between channel and bus	- - 1500 VAC 1500 VAC Yes	- - 1500 VAC 1500 VAC	- 1500 VAC 1500 VAC Yes	- - 1500 VAC 1500 VAC	- - 1500 VAC 1500 VAC Yes	- - 3000 VAC 3000 VAC -	- 3000 VAC 3000 VAC	- 3000 VAC 3000 VAC -	- 3000 VAC 3000 VAC
Synchronization (2) Dangerous voltage	Between groups Between channel and bus Between channels and earth ground	- - 1500 VAC 1500 VAC Yes -	- - 1500 VAC 1500 VAC - -	- 1500 VAC 1500 VAC Yes -	- 1500 VAC 1500 VAC -	- 1500 VAC 1500 VAC Yes	- - 3000 VAC 3000 VAC - Yes	- 3000 VAC 3000 VAC - Yes	- 3000 VAC 3000 VAC - Yes	- 3000 VAC 3000 VAC - Yes
Synchronization (2) Dangerous voltage	Between groups Between channel and bus Between channels and earth ground Height	1500 VAC 1500 VAC Yes - 100 mm (3.93 in	1500 VAC 1500 VAC 121 mm (4.76 in)	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in)	- 1500 VAC 1500 VAC - - 121 mm (4.76 in)	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in)	3000 VAC 3000 VAC - Yes 100 mm (3.93 in)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in)
Synchronization (2) Dangerous voltage Size	Between groups Between channel and bus Between channels and earth ground	- - 1500 VAC 1500 VAC Yes -	- 1500 VAC 1500 VAC 1500 VAC 121 mm (4.76 in) (1 slot) 15 mm (0.59 in) (1 slot)	- 1500 VAC 1500 VAC Yes -	- 1500 VAC 1500 VAC -	- 1500 VAC 1500 VAC Yes	- - 3000 VAC 3000 VAC - Yes	- 3000 VAC 3000 VAC - Yes	- 3000 VAC 3000 VAC - Yes	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)
Synchronization (2) Dangerous voltage Size Operating	Between groups Between channel and bus Between channels and earth ground Height Width	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in 15 mm (0.59 in)	- 1500 VAC 1500 VAC 1500 VAC 121 mm (4.76 in) (1 slot) 15 mm (0.59 in) (1 slot)	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	- 1500 VAC 1500 VAC 1500 VAC 121 mm (4.76 in) 30 mm (1.18 in) (2 slots) -20 to +60°C (-4 to +140°F)	- 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in)
Synchronization (2) Dangerous voltage Size Operating emperature Sold as a kit (Base +	Between groups Between channel and bus Between channels and earth ground Height Width Standard version	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in 15 mm (0.59 in)	- 1500 VAC 1500 VAC 1500 VAC	- 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F)	- 1500 VAC 1500 VAC 1500 VAC - 121 mm (4.76 in) 30 mm (1.18 in) (2 slots) -20 to +60°C (-4 to +140°F)	- 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F)
Synchronization (2) Dangerous voltage Size Operating emperature Sold as a kit (Base +	Between groups Between channel and bus Between channels and earth ground Height Width Standard version Hardened version	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in 15 mm (0.59 in) -20 to +60°C (-4	- 1500 VAC 1500 VAC 1500 VAC	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) -			- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F)
Synchronization (2) Dangerous voltage Size Operating emperature Sold as a kit (Base + Functionnal module)	Between groups Between channel and bus Between channels and earth ground Height Width Standard version Hardened version Standard version	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in 15 mm (0.59 in) -20 to +60°C (-4	- 1500 VAC 1500 VAC 1500 VAC	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) -	1500 VAC 1500 VAC 1500 VAC 121 mm (4.76 in) 30 mm (1.18 in) (2 slots) -20 to +60°C (-4 to +140°F) -40 to +70°C (-40 to +158°F) NTSDDI1602XK (1)			- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) - 40 to +70°C (-40 to +158°F)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) - 40 to +70°C (-40 to +158°F)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F)
Synchronization (2) Dangerous voltage Size Operating emperature Sold as a kit (Base + Functionnal module) See page Compatible terminal	Between groups Between channel and bus Between channels and earth ground Height Width Standard version Hardened version Standard version	- 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in 15 mm (0.59 in) -20 to +60°C (-4 - NTSDD10602K -	- 1500 VAC 1500 VAC 1500 VAC	- 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) -	1500 VAC 1500 VAC 1500 VAC 121 mm (4.76 in) 30 mm (1.18 in) (2 slots) -20 to +60°C (-4 to +140°F) -40 to +70°C (-40 to +158°F) NTSDDI1602XK (1)			- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) - 40 to +70°C (-40 to +158°F)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) - 40 to +70°C (-40 to +158°F)	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F)
Synchronization (2) Dangerous voltage Size Operating temperature Sold as a kit (Base + Functionnal module) See page Compatible terminal	Between groups Between channel and bus Between channels and earth ground Height Width Standard version Hardened version Hardened version Hardened version Number of points-Pitch-Voltage Number of terminal blocks to use	1500 VAC 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) -20 to +60°C (-4 - NTSDDI0602K - 20 18 Pts-3.81 mm 1	- 1500 VAC 1500 VAC 1500 VAC	- 1500 VAC 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) - NTSDDI1602K (1) - 18 Pts-3.81 mm-DC 1		1500 VAC 1500 VAC 1500 VAC Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) NTSDDH642K 18 Pts-3.81 mm-DC 1	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) - 40 to +70°C (-40 to +158°F) - NTSDAI0403HK	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)40 to +70°C (-40 to +158°F) - NTSDAI0215HK 12 Pts-5 mm-AC 1	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)40 to +70°C (-40 to +158°F) - NTSDAI0404HK 12 Pts-5 mm-AC 1	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) - NTSDAI0804K - 12 Pts-5 mm-AC 1
Synchronization (2) Dangerous voltage Size Operating emperature Sold as a kit (Base + Functionnal module) See page Compatible terminal	Between groups Between channel and bus Between channels and earth ground Height Width Standard version Hardened version Hardened version Hardened version Number of points-Pitch-Voltage Number of terminal blocks to use Spring TB Without	1500 VAC 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in 15 mm (0.59 in) -20 to +60°C (-4 - NTSDD10602K - 20 18 Pts-3.81 mm 1 cover NTSXTB18200H	- 1500 VAC 1500 VAC 1500 VAC	- 1500 VAC 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) - NTSDDI1602K (1) - 18 Pts-3.81 mm-DC 1 NTSXTB18200H	1500 VAC 1500 VAC 1500 VAC 121 mm (4.76 in) 30 mm (1.18 in) (2 slots) -20 to +60°C (-4 to +140°F) -40 to +70°C (-40 to +158°F) NTSDDI1602XK (1) NTSDDI1602XHK (1) 18 Pts-5 mm-DC 2 NTSXTB18200XH	1500 VAC 1500 VAC 1500 VAC Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) NTSDDH642K 18 Pts-3.81 mm-DC 1 NTSXTB18200H	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) - 40 to +70°C (-40 to +158°F) - NTSDAI0403HK	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)40 to +70°C (-40 to +158°F) - NTSDAI0215HK 12 Pts-5 mm-AC 1 NTSXTB12210H	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)40 to +70°C (-40 to +158°F) - NTSDAI0404HK 12 Pts-5 mm-AC 1 NTSXTB12210H	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) - NTSDAI0804K - 12 Pts-5 mm-AC 1 NTSXTB12210H
Synchronization (2) Dangerous voltage Size Operating temperature Sold as a kit (Base + Functionnal module) See page Compatible terminal block	Between groups Between channel and bus Between channels and earth ground Height Width Standard version Hardened version Hardened version Hardened version Number of points-Pitch-Voltage Number of terminal blocks to use	1500 VAC 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in 15 mm (0.59 in) -20 to +60°C (-4 - NTSDD10602K - 20 18 Pts-3.81 mm 1 cover NTSXTB18200H NTSXTB18201H	- 1500 VAC 1500 VAC 1500 VAC 1500 VAC 121 mm (4.76 in) (1 slot) 15 mm (0.59 in) (1 slot) to +140°F) - NTSDDI0802XK - 10-DC 18 Pts-5 mm-DC 1 NTSXTB18200XH NTSXTB18201XH	- 1500 VAC 1500 VAC 1500 VAC 1500 VAC Yes - 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) - NTSDDI1602K (1) - 18 Pts-3.81 mm-DC 1		1500 VAC 1500 VAC 1500 VAC Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) NTSDDH642K 18 Pts-3.81 mm-DC 1	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) - 40 to +70°C (-40 to +158°F) - NTSDAI0403HK	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)40 to +70°C (-40 to +158°F) - NTSDAI0215HK 12 Pts-5 mm-AC 1	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot)40 to +70°C (-40 to +158°F) - NTSDAI0404HK 12 Pts-5 mm-AC 1	- 3000 VAC 3000 VAC - Yes 100 mm (3.93 in) 15 mm (0.59 in) (1 slot) -20 to +60°C (-4 to +140°F) - NTSDAI0804K - 12 Pts-5 mm-AC 1

The future-ready I/O system for data aggregation Discrete inputs (DC, AC)



Presentation

Function

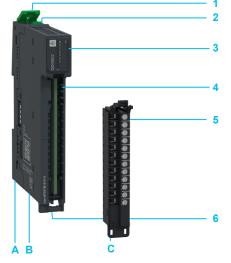
- The Discrete input kits include an electronic module and its corresponding Base, which match in height and width.
- The electronic module provides the Discrete Input function.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of Discrete modules through the Backplane bus. The Base also provides fieldtest device power supply.
- Discrete input kits provide from 2 up to 16 channels with different level of performance, protection or diagnostic.

Implementation

- The Discrete input kits use 1 slot (15 mm (0.59 in) width)), or 2 slots (30 mm (1.18 in) width) on DIN rail, depending on the model.
- The kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

Characteristics

- The kits are offered:
 - in Standard version with an operating temperature of -20 to +60 $^{\circ}$ C (-4 to +140 $^{\circ}$ F)
 - in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions.



Description

A Discrete input kit comprises a Base A, and an electronic module B. The terminal block C is to order separately.

- 1 Mechanical clip for locking on DIN rail and modules between them
- 2 Release button for disengaging the module from the Base
- 3 Status LEDs:
 - 1 LED (Green) module operating (RUN)
 - 1 LED per channel (Green) channel diagnostic
 - 1 LED (Red) module error (ERR)
- 4 Housing for the terminal block
- 5 Terminal block
- 6 Hinge for the terminal block installation

Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Discrete inputs (DC, AC)



NTSDDI0602K NTSDDI1602K NTSDDI1642K NTSDAI0804K NTSDAI0215HK NTSDAI0403HK NTSDAI0404HK



NTSDDI0802XK



NTSDDI1602XK NTSDDI1602XHK







Refere	nces						
Number of Channels	Rated input voltage	Logic type	Wiring mode	Synchronization (2)	Version	Reference	Weight kg/
Discrete	input kits (Discret	e input module + E	Base)				
6	24 VDC	Sink	1-2-3-wire	Yes	Standard	NTSDDI0602K	0.099/ 0.218
8	24 VDC	Sink	1-2-wire	-	Standard	NTSDDI0802XK	0.106/ 0.233
16	24 VDC	Sink	1-wire	Yes	Standard	NTSDDI1602K (1)	0.099/ 0.218
		Sink	1-2-3-wire	-	Standard	NTSDDI1602XK (1)	0.163/ 0.359
			1-2-3-wire	_	Hardened	NTSDDI1602XHK (1)	0.166/ 0.365
		Source	1-wire	Yes	Standard	NTSDDI1642K	0.166/ 0.365
4	24 VAC or 48 VAC/DC (configurable)	-	1-2-3-wire	-	Hardened	NTSDAI0403HK	0.077/ 0.169
2 (isolated)	100240 VAC	-	1-2-3-wire	_	Hardened	NTSDAI0215HK	0.077/ 0.169
4	100240 VAC	-	1-2-wire	_	Hardened	NTSDAI0404HK	0.099/ 0.218
8	100240 VAC	_	1-wire	_	Standard	NTSDAI0804K	0.077/ 0.169

Terminal blocks					
Number of points-Pitch-Voltage	Туре	Cover	Reference	Weight kg/lb	For use with the kit
12 Pts-5 mm-AC	Spring	Without cover	NTSXTB12210H	0.029/0.063	NTSDAI0215HK, NTSDAI0403HK,
		With cover	NTSXTB12211H	0.040/0.088	NTSDAI0404HK, NTSDAI0804K
	Screw	Without cover	NTSXTB12010H	0.048/0.105	NTSDAI0215HK, NTSDAI0403HK,
		With cover	NTSXTB12011H	0.058/0.127	NTSDAI0404HK, NTSDAI0804K
18 Pts-5 mm-DC	Spring	Without cover	NTSXTB18200XH	0.038/0.083	NTSDDI0802XK, NTSDDI1602XK (1)(3),
		With cover	NTSXTB18201XH	0.050/0.110	NTSDDI1602XHK(1)(3)
	Screw	Without cover	NTSXTB18000XH	0.064/0.141	NTSDDI0802XK, NTSDDI1602XK (1)(3)
		With cover	NTSXTB18001XH	0.077/0.169	NTSDDH602XHK(1)(3)
18 Pts-3.81 mm-DC	Spring	Without cover	NTSXTB18200H	0.028/0.061	NTSDD10602K, NTSDD11602K (1),
		With cover	NTSXTB18201H	0.038/0.083	NTSDDI1642
	Screw	Without cover	NTSXTB18000H	0.039/0.085	NTSDDI0602K, NTSDDI1602K (1),
		With cover	NTSXTB18001H	0.049/0.108	NTSDDH642K

Accessories

Mounting accessories, Labels, Shielding accessories, and Cluster Termination

See page 59

Spare parts for replacement: Functional modules, Bases, Terminal blocks, \dots

See pages 60 to 63

(1) Available soon. (2) Planned commercialization. (3) This kit requests two terminal blocks. (2) Planned commercialization.

Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Discrete outputs (Transistor, Relay, Triac)

Eupotien															
Function			→ Diameter	dan ida											
			Discrete ou	itputs											
			0000	000		0000	0000	1000	1000	1000	000	100	ono.	0000	900
			Security ()			The second of th	A Commence	Annual II am	International Action of the Control	manaman manaman Manaman	The second of th	James II mee	(bound) li	Constitution of the State of th	Jacob III
Number of Channel	ls		2 (isolated)	4	6	8	8	16	16	16	•	4 (Form C with NO/	6 (Form A with NO	2	4
Discrete output type	.0		Transistor								contacts) Relay	NC contacts)	contact)	Triac	
Discrete output type Discrete output volt			24 VDC								24 to 250 VAC (4763 H	I ₇)		80264 VAC (476	63 Hz)
Number of channel			2 groups of 1 channel isolated	1 group	1 group	2 groups of 4 channe non isolated	1 group	1 group	2 isolated groups of 8	channels	2 groups of 1 channel isolated		el 6 groups of 1 channe		4 groups of 1 channel isolated
Discrete output logi	ic		Positive logic (source))							_				
Wiring mode			1-2-3-wire	1-2-3-wire	1-2-3-wire	1-wire	1-2-wire	1-wire	1-2-wire	1-2-wire	2-wire	2-wire	2-wire	1-2-3-wire	1-2-3-wire
Discrete output curi	rent			500 mA per channel, 2 A per module	500 mA per channel, 3A per module	2 A per channel, 4 A per group, 8 A per module	0.5 A per channel, 4 A per module	500 mA per channel, 8 A per module	500 mA per channel, 4 A per group, 8 A per module	0.5 A per channel, 4 A per module	2 A max. per output at 30 VDC or 250 VAC (resistive) 0.2 A max. per output at 125 VDC (resistive)	(resistive)	t 30 VDC or 250 VAC t at 125 VDC (resistive)	1 A per channel	2 A per channel
Minimum switching	g current		_	-	-	-	-	-	-	-	10 mA 5 VDC			-	-
Operating voltage ra	ange		19.230 VDC											80264 VAC (476	· · · · · · · · · · · · · · · · · · ·
Output reponse time	State 1 to state 0		120 µs	110 µs	120 µs	110 µs	110 µs	110 µs	110 µs	110 µs	< 13 ms (deactivation)		< 10 ms (deactiva- tion)	0.5 line cycles max.	
	State 0 to state 1		70 µs	90 µs	70 µs	90 μs	90 μs	90 µs	90 µs	90 µs	< 20 ms (activation)		< 20 ms (activation)	0.5 line cycles max.	
Output protection	Transient voltage suppression pe		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	_		RC snubber suppre	ssion per channel
type	Short circuit protection per chann		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	_			
	Overload / thermal protection per n		Yes Yes (for using internal	Yes Yes	Yes Yes	Yes –	Yes Yes	Yes Yes	Yes –	Yes Yes	-	-			
Dower ounnly type	Due newer from newer cumply by	10 (24 V/DC)	field power) 24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
i ower supply type	Bus power from power supply bu Field power from power supply fi			24 VDC	24 VDC	_	24 VDC	24 VDC	-	24 VDC	24 VDC	24 VDC	24 VDC	_	-
	Field power from external power		24 VDC (Optional)	-	_	24 VDC	_	_	24 VDC	_	5125 VDC or 24250 VAC	24 100	24 100	100240 VAC	
Output diagnostic		Зарргу	Yes	Yes	Yes	_	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	_
Output diagnostic	External power supply error per of	channel	Yes	-	-	Yes	_	-	Yes	-	-	-	_	Yes	Yes
	Short circuit / Over current error		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	_	_	_	-	_
	Broken wire error per channel		-	Yes	_	_	_	_	_	_	_	_	_	_	_
	Read back error per channel		-	Yes	_	_	_	_	_	_	_	_	_	_	_
Isolation	Between channels Between groups		500 VAC	_	-	-	-	-	- 500 VAC	-	1780 VAC	1780 VAC	1780 VAC	-	2500 VAC
	Between channel and bus		1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	3000 VAC	3000 VAC	3000 VAC	3000 VAC	3000 VAC
	Between channels and earth gro	und	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	3000 VAC	3000 VAC	3000 VAC	3000 VAC	3000 VAC
Synchronization (2)			Yes	Yes	Yes	Yes	-	Yes	-	-	-	-	-	-	-
Dangerous voltage	<u> </u>		-	-	-	-	_	-	-	_	Yes	Yes	Yes	Yes	Yes
Size	Height Width		100 mm (3.93 in) 15 mm (0.59 in)	100 mm (3.93 in) 15 mm (0.59 in)	100 mm (3.93 in) 15 mm (0.59 in)	100 mm (3.93 in) 15 mm (0.59 in)	121 mm (4.76 in) 15 mm (0.59 in)	100 mm (3.93 in) 15 mm (0.59 in)	121 mm (4.76 in) 30 mm (1.18 in)	121 mm (4.76 in) 30 mm (1.18 in)	100 mm (3.93 in) 15 mm (0.59 in) (1 slot)	100 mm (3.93 in) 30 mm (1.18 in)	100 mm (3.93 in) 30 mm (1.18 in)	100 mm (3.93 in) 15 mm (0.59 in)	100 mm (3.93 in) 30 mm (1.18 in)
			(1 slot)	(1 slot)	(1 slot)	(1 slot)	(1 slot)	(1 slot)	(2 slots)	(2 slots)		(2 slots)	(2 slots)	(1 slot)	(2 slots)
Operating	Standard version		-	-20 to +60°C (-4 to +1	140°F)										
temperature	Hardened version		-40 to +70°C (-40 to +	158°F)	-	-	-	-	-40 to +70°C (-40 to +1	158°F)	-	-40 to +70°C (-40 to +158°F)	-	-	-40 to +70°C (-40 to +158°F)
Sold as a kit (Base + Functionnal			-	NTSDDO0402K	NTSDDO0602K	NTSDDO0802K	NTSDDO0802XK (1)	NTSDDO1602K	NTSDDO1602XAK	NTSDDO1602XK	NTSDRC0215K	NTSDRC0415K	NTSDRA0615K	NTSDAO0205K	NTSDAO0415K
module)	Hardened version		NTSDDO0212HK (1)	NTSDDO0402HK	-	-	-	-	NTSDDO1602XAHK	NTSDDO1602XHK	-	NTSDRC0415HK	-	-	NTSDAO0415HK
See page			25												
Compatible	Number of points-Pitch-Voltage		12 Pts-5 mm-DC	12 Pts-5 mm-DC	18 Pts-3.81 mm-DC	12 Pts-5 mm-DC	18 Pts-5 mm-DC	18 Pts-3.81 mm-DC	18 Pts-5 mm-DC	18 Pts-5 mm-DC	12 Pts-5 mm-AC	12 Pts-5 mm-AC	12 Pts-5 mm-AC	12 Pts-5 mm-AC	12 Pts-5 mm-AC
terminal blocks	Number of terminal blocks to us		1	1	1	1	1	1	2	2	1	1	1	1	1
		Without cover	NTSXTB12200H	NTSXTB12200H	NTSXTB18200H	NTSXTB12200H	NTSXTB18200XH	NTSXTB18200H	NTSXTB18200XH	NTSXTB18200XH	NTSXTB12210H	NTSXTB12210H	NTSXTB12210H	NTSXTB12210H	NTSXTB12210H
		With cover	NTSXTB12201H	NTSXTB12201H	NTSXTB18201H	NTSXTB12201H	NTSXTB18201XH	NTSXTB18201H	NTSXTB18201XH	NTSXTB18201XH	NTSXTB12211H	NTSXTB12211H	NTSXTB12211H	NTSXTB12211H	NTSXTB12211H
		Without cover	NTSXTB12000H	NTSXTB12000H	NTSXTB18000H	NTSXTB12000H	NTSXTB18000XH	NTSXTB18000H	NTSXTB18000XH	NTSXTB18000XH	NTSXTB12010H	NTSXTB12010H	NTSXTB12010H	NTSXTB12010H	NTSXTB12010H
(1) Available seen (2) [With cover	NTSXTB12001H	NTSXTB12001H	NTSXTB18001H	NTSXTB12001H	NTSXTB18001XH	NTSXTB18001H	NTSXTB18001XH	NTSXTB18001XH	NTSXTB12011H	NTSXTB12011H	NTSXTB12011H	NTSXTB12011H	NTSXTB12011H

The future-ready I/O system for data aggregation Discrete outputs (Transistor, Relay, Triac)



Presentation

Function

- The Discrete output kits include an electronic module and its corresponding Base, which match in height and width.
- ☐ The electronic module provides the Discrete output function.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of Discrete modules through the Backplane bus. The Base also provides fieldtest device power supply.
- Discrete output kits provide from 2 up to 16 channels with different level of performance, protection or diagnostic.

Implementation

- The Discrete output kits use 1 slot (15 mm (0.59 in) width)), or 2 slots (30 mm (1.18 in) width) on DIN rail, depending on the model.
- The kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

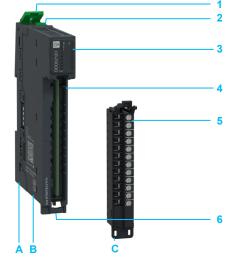
Characteristics

- The kits are offered:
 - in Standard version with an operating temperature of -20 to +60°C (-4 to +140°F)
 - in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions..
- An external power supply is required for two kits.



A Discrete output kit comprises a Base A, and an electronic module B. The terminal block C is to order separately.

- 1 Mechanical clip for locking on DIN rail and modules between them
- 2 Release button for disengaging the module from the Base
- 3 Status LEDs:
 - 1 LED (Green) module operating (RUN)
 - 1 LED per channel (Green) channel diagnostic
 - 1 LED (Red) module error (ERR)
- 4 Housing for the terminal block
- 5 Terminal block
- 6 Hinge for the terminal block installation



The future-ready I/O system for data aggregation Discrete outputs (Transistor, Relay, Triac)





NTSDDO0802XK



NTSDDO1602XAK/HK NTSDDO1602XK/HK



NTSDRC0415K/HK NTSDRA0615K NTSDAO0415K/HK







	t kits (Discrete out		,				
Number of Channels	Rated output voltage	Output type	Wiring mode	Synchronization (2)	Version	Reference	Weight kg/ <i>lb</i>
2 (isolated)	24 VDC	Transistor Source	1-2-3-wire	Yes	Hardened	NTSDDO0212HK (1)	0.099 0.21
4	24 VDC	Transistor Source	1-2-3-wire	Yes	Standard	NTSDDO0402K	0.099 0.21
			1-2-3-wire	Yes	Hardened	NTSDDO0402HK	0.099 0.21
6	24 VDC	Transistor Source	1-2-3-wire	Yes	Standard	NTSDDO0602K	0.077 0.16
8	24 VDC	Transistor Source	1-wire	Yes	Standard	NTSDDO0802K	0.098 0.21
			1-2-wire	_	Standard	NTSDDO0802XK (1)	0.107 <i>0.23</i>
16	24 VDC	Transistor Source	1-wire	Yes	Standard	NTSDDO1602K	0.100 <i>0.22</i> 0
			1-2-wire	_	Standard	NTSDDO1602XK	0.138 <i>0.30</i>
			1-2-wire	_	Hardened	NTSDDO1602XHK	0.138 <i>0.30</i>
16	24 VDC	Transistor Source	1-2-wire	_	Standard	NTSDDO1602XAK (3)	0.138 <i>0.30</i>
			1-2-wire	_	Hardened	NTSDDO1602XAHK (3)	0.138 <i>0.30</i>
2 (Form C with NO/ NC contacts)	24 to 250 VAC (4763 Hz)	Relay	2-wire	_	Standard	NTSDRC0215K	0.077 0.16
4 (Form C with NO/ NC contacts)	24 to 250 VAC (4763 Hz)	Relay	2-wire	-	Standard	NTSDRC0415K	0.156 <i>0.34</i> 3
		Relay	2-wire	-	Hardened	NTSDRC0415HK	0.157 0.34
6 (Form A with NO contact)	120 VDC/ 230 VAC	Relay	2-wire	-	Standard	NTSDRA0615K	0.152 0.33
2	80264 VAC (4763 Hz)	Triac	1-2-3-wire	-	Standard	NTSDAO0205K	0.099 0.218
4	80264 VAC (4763 Hz)	Triac	1-2-3-wire	-	Standard	NTSDAO0415K	0.131 0.28
4 (isolated)	80264 VAC (4763 Hz)	Triac	1-2-3-wire	-	Hardened	NTSDAO0415HK	0.158 0.348

With cover NTSXTB18201XH 0.050/0.110 (4),NTSDD01602XK(4),NTSDD01602XK(4) Screw Without cover NTSXTB18000XH 0.064/0.141 With cover NTSXTB18001XH 0.077/0.169	(4700	112)				0.540
12 Pts-5 mm-DC	Terminal blocks					
With cover NTSXTB12201H 0.040/0.088 NTSDD00802K	Number of points-Pitch-Voltage	Туре	Cover	Reference	U	For use with the kit
Screw Without cover NTSXTB12201H 0.040/0.088	12 Pts-5 mm-DC	Spring	Without cover	NTSXTB12200H	0.029/0.063	
With cover NTSXTB12001H 0.058/0.127			With cover	NTSXTB12201H	0.040/0.088	NTSDDO0802K
12 Pts-5 mm-AC		Screw	Without cover	NTSXTB12000H	0.048/0.105	
With cover NTSXTB12211H 0.040/0.088 NTSDA00205K, NTSDA00415K, NTSDA00415HK			With cover	NTSXTB12001H	0.058/0.127	
Screw Without cover NTSXTB12010H 0.048/0.105 With cover NTSXTB12011H 0.058/0.127	12 Pts-5 mm-AC	Spring	Without cover	NTSXTB12210H	0.029/0.063	
With cover NTSXTB12011H 0.058/0.127 18 Pts-5 mm-DC			With cover	NTSXTB12211H	0.040/0.088	NTSDAO0205K, NTSDAO0415K, NTSDAO0415HK
18 Pts-5 mm-DC		Screw	Without cover	NTSXTB12010H	0.048/0.105	
With cover NTSXTB18201XH 0.050/0.110 (4),NTSDD01602XK(4),NTSDD01602XK(4) Screw Without cover NTSXTB18000XH 0.064/0.141			With cover	NTSXTB12011H	0.058/0.127	
Screw Without cover NTSXTB18000XH 0.064/0.141 With cover NTSXTB18001XH 0.077/0.169	18 Pts-5 mm-DC	Spring	Without cover	NTSXTB18200XH		NTSDDO0802XK(1), NTSDDO1602XAK(4), NTSDDO1602XAHK
With cover NTSXTB18001XH 0.077/0.169			With cover	NTSXTB18201XH	0.050/0.110	(4), NTSDDO1602XK(4), NTSDDO1602XHK(4)
18 Pts-3.81 mm-DC Spring Without cover NTSXTB18200H 0.028/0.061 NTSDD00602K,NTSDD01602K With cover NTSXTB18201H 0.038/0.083 Screw Without cover NTSXTB18000H 0.039/0.085		Screw	Without cover	NTSXTB18000XH	0.064/0.141	
With cover NTSXTB18201H 0.038/0.083 Screw Without cover NTSXTB18000H 0.039/0.085			With cover	NTSXTB18001XH	0.077/0.169	
Screw Without cover NTSXTB18000H 0.039/0.085	18 Pts-3.81 mm-DC	Spring	Without cover	NTSXTB18200H	0.028/0.061	NTSDDO0602K,NTSDDO1602K
			With cover	NTSXTB18201H	0.038/0.083	
MCII 0.04010.400		Screw	Without cover	NTSXTB18000H	0.039/0.085	
with cover NISXIB18001H 0.049/0.108			With cover	NTSXTB18001H	0.049/0.108	

Accessories

Mounting accessories, Labels, Shielding accessories, and Cluster Termination

See page 59

Spare parts for replacement: Functional modules, Bases, Terminal blocks, ...

See pages 60 to 63

⁽¹⁾ Available soon. (2) Planned commercialization. (3) This kit requests an External power Supply source. (4) This kit requests two terminal blocks.



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Analog inputs (Voltage/Current, Current)

Function			Analog inputs					
			The state of the s	Committee Commit	Committee of the Commit	Control Contro	Contractor	The second secon
Number of Channels			2 (isolated)	4	4	8	4 (isolated)	8
Analog input type			Voltage/Current	Voltage/Current	Voltage/Current	Voltage/Current	Current	Current
	Input current		± 20 mA, 020 mA, 420 mA	420 mA	± 20 mA, 420 mA (Standard) 420 mA (Hardened)			
	Input voltage		± 10 VDC, 010 VDC, ± 5 VDC, 05 VDC, 15 VDC	± 10 VDC, 010 VDC, ± 5 VDC, 05 VDC, 15 VDC	± 10 VDC, 010 VDC, ± 5 VDC, 05 VDC, 15 VDC	± 10 VDC, 010 VDC, ± 5 VDC, 05 VDC, 15 VDC	-	420 MA (Hardened)
Resolution			15 bits + sign	15 bits + Sign	15 bits + Sign			
Input impedance	Voltage		> 10 Ω	> 10 Ω	> 10 Ω	> 10 Ω	-	-
	Current		250 Ω + internal current protector, 10 Ω typical	250 Ω + internal current protector, 10 Ω typical	250 Ω + internal current protector, 10 Ω typical	Current: 100 Ω + internal current protector 10 Ω typical	Current: 250 Ω + internal current protector 10 Ω typical	Current: 250 Ohm + internal current protector 10 Ohm typical
Input protection type	Voltage		Over voltage / miswiring protection per channel	-	-			
	Current		Over current / miswiring protection per channel	Over current / miswiring protection per channel	Over current / miswiring protection per channel			
Sensor power supply pro	otection		Over current and short circuit protection on sensor power supply per channel Over current and short circuit protection on loop power supply per channel	-	-	_	Over current and short circuit protection on loop power supply per channel	Over current and short circuit protection on loop power supply per channel
Input diagnostic			Underflow error per channel Overflow error per channel Broken wire error per channel Hardware error per channel Calibration error per channel Loop power supply error per channel Internal field power supply error per channel	Underflow error per channel Overflow error per channel Broken wire error per channel Hardware error per channel Internal field power supply error per channel	Underflow error per channel Overflow error per channel Broken wire error per channel Hardware error per channel Internal field power supply error per channel	Underflow error per channel Overflow error per channel Broken wire error per channel Hardware error per channel Internal field power supply error per channel	Underflow error per channel Overflow error per channel Broken wire error per channel Hardware error per channel Calibration error per channel Loop power supply error per channel Internal field power supply error per channel	Underflow error per channel Overflow error per channel Broken wire error per channel Hardware error per channel Calibration error per channel Loop power supply error per channel Internal field power supply error per channel
Input wire connection			2-3-4-wire	2-wire	2-wire	1-2 wire	2-wire	2-wire (Standard) 1-2-wire (Hardened)
Accuracy			0.05% of Full Scale at 25°C and 0.1% of Full Scale over temperature range	0.3% of Full Scale at 25°C and 0.5% of Full Scale over temperature range	0.3% of Full Scale at 25°C and 0.5% of Full Scale over temperature	0.3% of Full Scale at 25°C and 0.5% of Full Scale over temperature	0.1% of Full Scale at 25°C and 0.3% of Full Scale over temperature	, ,
Isolation	Between channels Between groups		530 VAC			-	530 VAC	-
	Between channel an	nd bus	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1000 VAC	1500 VAC
	Between channels an Between channels an	nd earth ground	Not for module sensor power supply 1000 VAC for module loop power supply	- -	- 1000 VAC	-	Not for external loop power supply 1000 VAC for module loop power supply	-
	Between field power	r and bus	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC
Synchronization (2)			Yes	Yes	Yes	Yes	-	Yes
HART (Tolerance or Com	nmunication)		Tolerance	-	-	-	Communication	Tolerance
Size	Height		100 mm (3.93 in)	121 mm (4.76 in)	121 mm (4.76 in)			
	Width		15 mm (0.59 in) (1 slot) 30 mm (1.18 in) (2 slots) (Hardened version)	15 mm (0.59 in) (1 slot)	15 mm (0.59 in) (1 slot)	15 mm (0.59 in) (1 slot)	30 mm (1.18 in) (2 slots)	30 mm (1.18 in) (2 slots)
Operating temperature	Standard version Hardened version		-20 to +60°C (-4 to +140°F) -40 to +70°C (-40 to +158°F)	-20 to +60°C (-4 to +140°F)	-20 to +60°C (-4 to +140°F)	-20 to +60°C (-4 to +140°F)	-40 to +70°C (-40 to +158°F)	-20 to +60°C (-4 to +140°F) -40 to +70°C (-40 to +158°F)
Sold as a kit (Base +	Standard version		NTSAMI0210K (1)	NTSAMI0400K	NTSAMI0420K	NTSAMI0800K	-	NTSACI0802XK
Functionnal module)	Hardened version		NTSAMI0210HK (1)	-	-	-	NTSAHI0412XHK	NTSACI0802XHK
Soo page			21					
See page Compatible terminal	Number of points-Pi	itch-Voltage	12 Pts–5 mm–DC	12 Pts–5 mm–DC	12 Pts-5 mm-DC	18 Pts-3.81 mm-DC	18 - 5 mm <i>(0.19 in)</i> - DC	18 - 5 mm <i>(0.19 in)</i> - DC
blocks	Number of terminal b		1	1	1	1	1	1
	Spring TB	Without cover	NTSXTB12200H	NTSXTB12200H	NTSXTB12200H	NTSXTB18200H	NTSXTB18200XH	NTSXTB18200H
		With cover	NTSXTB12201H	NTSXTB12201H	NTSXTB12201H	NTSXTB18201H	NTSXTB18201XH	NTSXTB18201H
	Screw TB	Without cover	NTSXTB12000H	NTSXTB12000H	NTSXTB12000H	NTSXTB18000H	NTSXTB18000XH	NTSXTB18000H
		With cover	NTSXTB12001H	NTSXTB12001H	NTSXTB12001H	NTSXTB18001H	NTSXTB18001XH	NTSXTB18001H

Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Analog inputs (Temperature)

Function						
			Analog inputs			
			100	reaction of the second of the	1 CONTRACTOR OF THE CONTRACTOR	T T T T T T T T T T T T T T T T T T T
					9 . 118	
						1 18
					7 5	
					Change of the Ch	1/2
			The second secon	The same of the sa		The same of the sa
					LEAST ME	
					VIDE .	
Number of Channels			2 (isolated)	4	4	6
Analog input type			Temperature			
			■ Thermocouple: Type J/K/R/S/B/T/N/E/C/L/U	■ Thermocouple: Type J/K/R/S/B/T/N/E/C/L/U	■ Thermocouple: Type J/K/R/S/B/T/N/E/C/L/U	■ Thermistor PTC 100 Ω to 10 k Ω , NTC 100 Ω to 200 k Ω or calculated
			■ RTD: Standard Ni100/1000, Pt100/1000, Cu10/50/100, JPt100/ JPt1000, and High precision Cu50/Cu100/Ni100/Ni1000/Pt100/Pt1000	■ RTD: Standard Ni100/1000, Pt100/1000, Cu10/50/100, JPt100/ JPt1000, and High precision Cu50/Cu100/Ni100/Ni1000/Pt100/Pt1000	■ RTD: Standard Ni100/1000, Pt100/1000, Cu10/50/100, JPt100/ JPt1000, and High precision Cu50/Cu100/Ni100/Ni1000/Pt100/Pt1000	temperature -90 to +150°C (-130 to +302°F) RTD: Standard Ni100/1000, Pt100/1000, Cu10/50/100, JPt100/
			■ Voltage: ± 40 mV; ± 80 mV; ± 160 mV; ± 320 mV; ± 640 mV; ±1.28 V	■ Voltage ± 40 mV; ± 80 mV; ± 160 mV; ± 320 mV; ± 640 mV; ±1.28 V	■ Voltage: ± 40 mV; ± 80 mV; ± 160 mV; ± 320 mV; ± 640 mV; ± 1.28 V	JPt1000, and High precision Cu50/Cu100/Ni100/Ni1000/Pt100/
			Resistance: 150/300/600/2000/4500 Ω	Resistance 150/300/600/2000/4500 Ω	Resistance: 150/300/600/2000/4500 Ω	Resistance 100 Ω to 32 kΩ
Signal type			Differential 100 F	Differential	Differential	Differential
Resolution			16 bits with Overflow			
Input impedance Input protection type			1 MΩ Typical Overvoltage protection			
Input wire connection			2-3-4-wire for RTD and Resistance inputs	2-3-wire for RTD and Resistance inputs,	2-3-4-wire for RTD and Resistance inputs, 2-wire for Thermocouple and	2-3-4-wire for RTD and Resistance inputs
			2-wire for Thermocouple and Voltage inputs	2-wire for Thermocouple and Voltage inputs	Voltage inputs	2-wire for thermistor NTC/PTC inputs
Input protection type			Overvoltage protection	Overvoltage protection	Overvoltage protection	Overvoltage protection
Sensor power supply pro	tection		-	-	-	-
Input diagnostic			Underflow error per channel Overflow error per channel	Underflow error per channel Overflow error per channel	Underflow error per channel Overflow error per channel	Underflow error per channel Overflow error per channel
			Broken wire error per channel			
			Hardware error per channel Calibration error per channel	Hardware error per channel Calibration error per channel	Hardware error per channel Calibration error per channel	Hardware error per channel Calibration error per channel
			CJC error per channel	CJC error per channel	CJC error per channel	Internal field power supply error per channel
			Internal field power supply error per channel	Internal field power supply error per channel	Internal field power supply error per channel	
Isolation	Between channels		530 VAC	-	-	•
	Between groups		4500.74.0	-	-	-
	Between channel a		1500 VAC	1500 VAC	1500 VAC	1500 VAC
	Between channels Between channels		1000 VAC	1000 VAC	1000 VAC	1000 VAC
	Between field pow		1500 VAC	1500 VAC	1500 VAC	1500 VAC
Synchronization (2)			-	-	-	-
Size	Height		100 mm (3.93 in)	100 mm (3.93 in)	121 mm (4.76 in)	100 mm (3.93 in)
	Width		15 mm (0.59 in) (1 slot)			
Operating temperature	Standard version		-20 to +60°C (-4 to +140°F)	-20 to +60°C (-4 to +140°F)	-	-20 to +60°C (-4 to +140°F)
	Hardened version		-40 to +70°C (-40 to +158°F)	-	-40 to +70°C (-40 to +158°F)	
						1
Sold as a kit (Base + Functionnal module)	Standard version		NTSART0214K	NTSART0404K	-	NTSART0603K
r anotornia modalo)	Hardened version		NTSART0214HK	-	NTSART0404XHK	-
See page			31			
Compatible terminal blocks	Number of points-		12 Pts–5 mm–DC	12 Pts–5 mm–DC	18 Pts–5 mm–DC	18 Pts–3.81 mm–DC
DIOONS	Number of termina		NTCYTP42200H	NTSVTP42200U	NTCVTP40200VII	NTCVTD40200H
	Spring TB	Without cover	NTSXTB12200H	NTSXTB12200H	NTSXTB18200XH	NTSXTB18200H
		With cover	NTSXTB12201H	NTSXTB12201H	NTSXTB18201XH	NTSXTB18201H
	Screw TB	Without cover	NTSXTB12000H	NTSXTB12000H	NTSXTB18000XH	NTSXTB18000H
		With cover	NTSXTB12001H	NTSXTB12001H	NTSXTB18001H	NTSXTB18001H

Presentation Description

Modicon Edge I/O NTS

The future-ready I/O system for data aggregation Analog inputs (Voltage/Current, Current, Temperature)





Presentation

Function

- The Analog input kits include an electronic module and its corresponding Base, which match in height and width.
- The electronic module provides the current, voltage, or temperature input functions.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of Analog modules through the Backplane bus. The Base also provides fieldtest device power supply.
- Analog input kits provide 2 up to 8 channels with different level of performance, protection or diagnostic.

Implementation

- The Analog input kits use 1 slot (15 mm (0.59 in) width)), or 2 slots (30 mm (1.18 in) width) on DIN rail, depending on the model.
- The kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

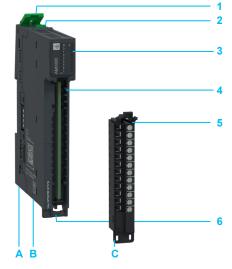
Characteristics

- The kits are offered:
 - in Standard version with an operating temperature of -20 to +60°C (-4 to +140°F)
 - in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation.
- Analog input kit has the capacity to configure some channels in voltage and some others in current.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions.

Description

An Analog input kit comprises a Base A, and an electronic module B. The terminal block C is to order separately.

- 1 Mechanical clip for locking on DIN rail and modules between them
- 2 Release button for disengaging the module from the Base
- 3 Status LEDs:
 - 1 LED (Green) module operating (RUN)
 - 1 LED per channel (Green) channel diagnostic
 - 1 LED (Red) module error (ERR)
- 4 Housing for the terminal block
- 5 Terminal block
- 6 Hinge for the terminal block installation



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Analog inputs (Voltage/Current, Current, Temperature)



NTSAMI0210K NTSAMI0400K NTSAMI0420K NTSAMI0800K NTSART0214K/ HK NTSART0404K NTSART0603K



NTSAMI0210HK



NTSAHI0412XHK



NTSACI0802XK/HK



NTSART0404XHK

Analog inp	out kits (Analog intput module + Base	2)					
Number of Channels	Туре	HART	Wiring mode	Synchronization (2)	Version	Reference	Weight kg/
2 (isolated)	Voltage: ± 10 VDC, 010 VDC, ± 5 VDC, 05 VDC, 15 VDC	Tolerance	2-3-4 wire	Yes	Standard	NTSAMI0210K (1)	0.100 0.220
	Current : ± 20 mA, 020 mA, 420 mA		2-3-4 wire	Yes	Hardened	NTSAMI0210HK (1)	0.143/ 0.315
4		_	2-wire	Yes	Standard	NTSAMI0400K	0.098/ 0.216
			2-wire	Yes	Standard	NTSAMI0420K	0.077/ 0.169
8	_		1-2-wire	Yes	Standard	NTSAMI0800K	0.077/ 0.169
4 (isolated)	Current: 420 mA	Communi- cation	2-wire	-	Hardened	NTSAHI0412XHK	0.138/ 0.304
8	Current : ± 20 mA, 420 mA	Tolerance	2-wire	Yes	Standard	NTSACI0802XK	0.138/ 0.304
	Current: 420 mA	Tolerance	1-2-wire	Yes	Hardened	NTSACI0802XHK	0.138/ 0.304
2 (isolated)	Temperature: - Thermocouple: Type J/K/R/S/B/T/N/E/C/L/U - RTD: Standard Ni100/1000,	-	2-3-4-wire for RTD and Resistance inputs	-	Standard	NTSART0214K	0.077/ 0.169
			2-wire for Thermocouple and Voltage inputs	-	Hardened	NTSART0214HK	0.077/ 0.169
4	 Pt100/1000, Cu10/50/100, JPt100/1000, and High precision Cu50/Cu100/Ni100/Ni1000/Pt100/ Pt1000 Voltage: ± 40 mV, ± 80 mV, ± 160 mV, 		2-3-wire for RTD and Resistance inputs 2-wire for Thermocouple and Voltage inputs	_	Standard	NTSART0404K	0.077/ 0.169
	± 320 mV; ± 640 mV; ± 1.28 V - Resistance: 150/300/600/2000/4500 Ω		2-3-4-wire for RTD and Resistance inputs 2-wire for Thermocouple and Voltage inputs	-	Hardened	NTSART0404XHK	0.077/ 0.169
6	Temperature: - Thermistor PTC 100 Ω to 10 kΩ, NTC 100Ω to 200 kΩ or calculated temperature -90 to +150°C (-130 to +302°F) - RTD: Standard Ni100/1000, Pt100/1000, Cu10/50/100, JPt100/JPt1000, and High precision Cu50/Cu100/Ni100/Ni1000/Pt1000/Pt1000 - PT100/1000	-	2-3-4-wire for RTD and Resistance inputs 2-wire for thermistor NTC/ PTC inputs	-	Standard	NTSART0603K	0.077/ 0.169

- Resis	stance 100 tz to) 32 KL2			
Terminal blocks					
Number of points-Pitch-Volt	age Type	Cover	Reference	Weight kg/lb	For use with the kit
12 Pts-5 mm-DC	Spring	Without cover	NTSXTB12200H		NTSAMI0210K(1), NTSAMI0210HK(1), NTSAMI0400K,
		With cover	NTSXTB12201H	0.040/0.088	NTSAMI0420K, NTSART0214K, NTSART0214HK, NTSART0404K
	Screw	Without cover	NTSXTB12000H	0.048/0.105	
		With cover	NTSXTB12001H	0.058/0.127	
18 Pts-5 mm-DC	Spring	Without cover	NTSXTB18200XH		NTSAHI0412XHK, NTSACI0802XK, NTSACI0802XHK,
		With cover	NTSXTB18201XH	0.050/0.110	NTSART0404XHK
	Screw	Without cover	NTSXTB18000XH	0.064/0.141	
		With cover	NTSXTB18001XH	0.077/0.169	
18 Pts-3.81 mm-DC	Spring	Without cover	NTSXTB18200H	0.028/0.061	NTSAMI0800K, NTSART0603K
		With cover	NTSXTB18201H	0.038/0.083	
	Screw	Without cover	NTSXTB18000H	0.039/0.085	
		With cover	NTSXTB18001H	0.049/0.108	
Accessories					

Mounting accessories, Labels, Shielding accessories, and Cluster Termination See page 59 Spare parts for replacement: Functional modules, Bases, Terminal blocks, \dots See pages 60 to 63









Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Analog outputs (Current, Voltage/Current)

Function			₩		
			Analog outputs		
			Analog outputs	_	_
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			inco in the second seco	The Control of the Co	
Number of Channels			2 (isolated)	2 (isolated)	4
Analog output type			Current	Voltage/Current (Single end/Differential)	Voltage/Current (Single end)
ritalog output typo			420 mA	Voltage: ± 10 V, 010 VDC, ± 5 VDC, 05 V, 15 VDC	Voltage: ± 10 VDC, 010 VDC, ± 5 VDC, 05 VDC
			7201101	Current: ± 20 mA, 020 mA, 420 mA	Current: 020 mA, 420 mA
Resolution			16 bits	15 bits + sign	15 bits + sign
Output impedance			Current output: 750 Ω max.	Voltage output: 1 kΩ minimum	Voltage output: 1 kΩ minimum
				Current output: 750 Ω max.	Current output: 600 Ω max.
Output protection			Current output: over voltage 30V	Voltage output: short circuit: 16 mA, over voltage: 30 V Current output: over voltage 30 V	Voltage output: short circuit: 16 mA, over voltage: 30 V Current output: over voltage 30 V
				ounencouput. over voitage 30 v	Current output. Over voltage 50 V
Output response time			500 µs at 8750 Ohm per module (HART disabled)	522 μs at 750 Ω per module	912 μs at 600Ω per module
HART (Tolerance or Co	ommunication)		Communication	Tolerance	Tolerance
Output diagnostic			Underflow error per channel	Underflow error per channel	Underflow error per channel
			Overflow error per channel Broken wire error per channel	Overflow error per channel Broken wire error per channel	Overflow error per channel Broken wire error per channel
			Short circuit error per channel	Short circuit error per channel	Short circuit error per channel
			Hardware error per channel	Hardware error per channel	Hardware error per channel
			Calibration error per channel DAC power error per channel	Calibration error per channel DAC power error per channel	Calibration error per channel DAC power error per channel
			Internal field power supply error per channel	Internal field power supply error per channel	Internal field power supply error per channel
Output wire connection	on		2-wire	2-3-4-wire	2-wire
Accuracy			0.1 % / 0.2 % of full scale	0.1 % / 0.2 % of full scale	0.1 % / 0.2 % of full scale
Isolation	Between channels		530 VAC	530 VAC	-
	Between groups		-	-	-
	Between channel and	l bus	1500 VAC	1500 VAC	1500 VAC
	Between channels an	d earth ground	-	-	-
	Between channels an	d field power	1000 VAC	1000 VAC	-
	Between field power	and bus	1500 VAC	1500 VAC	1500 VAC
Synchronization (2)			-	Yes	Yes
Size	Height		100 mm (3.93 in)	100 mm (3.93 in)	100 mm (3.93 in)
	Width		30 mm (1.18 in) (2 slots)	15 mm (0.59 in) (1 slot)	15 mm (0.59 in) (1 slot)
Operating	Standard version		-	-20 to +60°C (-4 to +140°F)	-20 to +60°C (-4 to +140°F)
temperature	Hardened version		-40 to +70°C (-40 to +158°F)	-40 to +70°C (-40 to +158°F)	-40 to +70°C (-40 to +158°F)
Sold on a kit /Dans	Ctandard			NITO AMOROMAN	NITCAMOOAOOK
Sold as a kit (Base + Functionnal module)	Standard version			NTSAMO0210K	NTSAMO0400K
	Hardened version		NTSAHO0212HK	NTSAMO0210HK	NTSAMO0400HK
See page			35		
Compatible terminal	Number of points-Pite	ch-Voltage	12 Pts–5 mm–DC	12 Pts–5 mm–DC	12 Pts–5 mm–DC
blocks			1	1	1
	Number of terminal b			· · · · · · · · · · · · · · · · · · ·	·
	Spring TB	Without cover	NTSXTB12200H	NTSXTB12200H	NTSXTB12200H
		With cover	NTSXTB12201H	NTSXTB12201H	NTSXTB12201H
	Screw TB	Without cover	NTSXTB12000H	NTSXTB12000H	NTSXTB12000H
		With cover	NTSXTB12001H	NTSXTB12001H	NTSXTB12001H

The future-ready I/O system for data aggregation Analog outputs (Current, Voltage/Current)



Presentation

- The Analog output kits include an electronic module and its corresponding Base, which match in height and width.
- The electronic module provides current and Voltage/Current output functions.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of Analog modules through the Backplane bus. The Base also provides fieldtest device power supply.
- Analog output kits provide 2 up to 4 channels with different level of performance, protection or diagnostic.

Implementation

- The Analog output kits use 1 slot (15 mm (0.59 in) width)), or 2 slots (30 mm (1.18 in) width) on DIN rail, depending on the model.
- The kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

Characteristics

- The kits are offered:
 - in Standard version with an operating temperature of -20 to +60°C (-4 to +140°F)
 - in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions.



Description

An Analog output kit comprises a Base A, and an Electronic module B. The terminal block C is to order separately.

- Mechanical clip for locking on DIN rail and modules between them
- Release button for disengaging the module from the Base
- Status LEDs:
 - 1 LED (Green) module operating (RUN)
 - 1 LED per channel (Green) channel diagnostic
 - 1 LED (Red) module error (ERR)
- 4 Housing for the terminal block
- Terminal block
- 6 Hinge for the terminal block installation



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Analog outputs (Current, Voltage/Current)









Referen	ces						
Analog ou	tput kits (Analog outp	ut module + Bas	se)				
Number of Channels	Туре	HART	Wiring mode	Synchronization (2)	Version	Reference	Weight kg/
2 (isolated)	Current: 420 mA	Communication	2-wire	-	Hardened	NTSAHO0212HK	0.144/ 0.317
2 (isolated)	Current: ± 20 mA, 020 mA, 420 mA Voltage: ± 10 VDC, 010 VDC, ± 5 VDC, 05 VDC, 15 VDC	Tolerance	2-3-4-wir	eYes	Standard	NTSAMO0210K	0.077/ 0.169
			2-3-4-wir	e Yes	Hardened	NTSAMO0210HK	0.077/ 0.169
4	Current: 020 mA, 420 mA Voltage: ± 10 VDC, 010 VDC, ± 5 VDC, 05 VDC, 15 VDC	Tolerance	2-wire	Yes	Standard	NTSAMO0400K	0.101/ 0.222
			2-wire	Yes	Hardened	NTSAMO0400HK	0.101/ 0.222

Terminal blocks							
Number of points-Pitch-Voltage	Туре	Cover	Reference	Weight kg/lb	For use with the kit		
12 Pts-5 mm-DC	Spring	Without cover	NTSXTB12200H		NTSAHO0212HK, NTSAMO0210K, NTSAMO0210HK, NTSAMO0400K,		
		With cover	NTSXTB12201H	0.040/0.088	NTSAMO0400HK		
	Screw	Without cover	NTSXTB12000H	0.048/0.105			
		With cover	NTSXTB12001H	0.058/0.127			
Accessories							
Mounting accessories, Labels, Shielding accessories, and Cluster Termination See page 59							
Spare parts							
Spare parts for replacement: Functional modules, Bases, Terminal blocks, See pages 60 to 63							

The future-ready I/O system for data aggregation Analog Combo



Presentation

Function

- The Analog combo kit includes an electronic module and its corresponding Base, which match in height and width...
- The electronic module provides the Analog I/O function.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of Analog combo through the Backplane bus. The Base also provides fieldtest device power supply.
- The Combo kit supports inputs and outputs on the same module to manage Voltage and Current I/Os, and provides 6 channels with different level of performance, protection or diagnostic.

Implementation

- The Analog combo kit use 1 slot (15 mm (0.59 in) width) on DIN rail.
- The kit must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

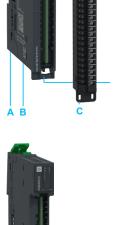
Characteristics

- The Analog combo kits are offered in Standard version with an operating temperature of -20 to +60°C (-4 to +140°F).
- Hot swap capability is available for each Combo: replacing or adding components without having to power down or interrupt the system's operation
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions..
- Diagnostic

Description

An Analog Combo kit comprises a Base A, and an electronic module B. The terminal block C is to order separately.

- 1 Mechanical clip for locking on DIN rail and modules between them
- 2 Release button for disengaging the module from the Base
- 3 Status LEDs:
 - 1 LED (Green) module operating (RUN)
 - 1 LED per channel (Green) channel diagnostic
 - 1 LED (Red) module error (ERR)
- 4 Housing for the terminal block
- 5 Terminal block
- 6 Hinge for the terminal block installation





NTSAMM0600K

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18 Pts-3.81 mm-DC

References							
Analog Combo kit (Combo module + Base)						
Number and type of channel		Wiring mod	de Isolation	Synchronization (2)	Version	Reference	Weight kg/ <i>lb</i>
4 analog inputs: Voltage input ±10 V, 0/+10V, ±5V, 0/15V Current input ±20 mA, 420 mA (16-bit max resolution)	2 analog outputs: - Voltage output -10/+10 VDC; 0/+10 VDC Current output 0-20 mA; 4-20 mA (13-bit max resolution)	2-wire	3 (inputs to outputs group isolation)	Yes	Standard	NTSAMM0600K	0.104/ 0.229
Terminal blocks							
Number of points-Pitch-Volta	go Typo	Cover	Reference	_	\Moight	For use with the kit	

Terminal blocks					
Number of points-Pitch-Volt	age Type	Cover	Reference	Weight kg/lb	For use with the kit
18 Pts-3.81 mm-DC	Spring	Without cover	NTSXTB18200H	0.028/0.061	NTSAMM0600K (3)
		With cover	NTSXTB18201H	0.038/0.083	
	Screw	Without cover	NTSXTB18000H	0.039/0.085	
		With cover	NTSXTB18001H	0.049/0.108	
A					

	With cover	NTSXTB18001H	0.049/0.108
Accessories			
Mounting accessories, Labels, Shielding access	ories, and Clu	ster Termination	See page 59
Spare parts			
Spare parts for replacement: Functional module	s, Bases, Term	inal blocks,	See pages 60 to 63

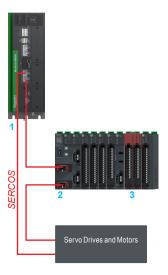
(1) Available soon. (2) Planned commercialization. (3) This kit requests two terminal blocks.

Presentation Description

Modicon Edge I/O NTS

The future-ready I/O system for data aggregation Motion Expert (Encoders, Fast I/Os, Pulse train outputs) (1)





- 1 Motion controller Modicon M660 (1)
- 2 Modicon Edge I/O NTS: Cluster composed of a Network Interface module, and a Power Supply module, and, according to a modular configuration, Discrete modules, Analog modules, Counting modules, Motion Expert modules, Field device master modules, or Passive modules.
- 3 Modicon Edge I/O NTS Integrated safety (1)

Presentation

- The Motion Expert kits include an electronic module and its corresponding Base, which match in height and width.
- The electronic module provides the motion function.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of the Motion Expert module through the Backplane bus. The Base also provides fieldtest device power supply.
- Motion Expert kits control from 1 up to 8 axes with different level of performance, protection or diagnostic.

Implementation

- The Motion Expert kits use 1 slot (15 mm (0.59 in) width)), or 2 slots (30 mm (1.18 in) width) on DIN rail, depending on the model.
- The kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

Characteristics

- Motion Expert kits are offered as Standard version with an operating temperature of -20 to +60°C (-4 to +140°F).
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened

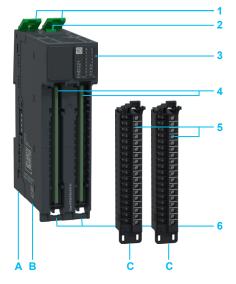


A Motion Expert kit comprises a Base ${\bf A}$, and an Electronic module ${\bf B}$. The terminal blocks ${\bf C}$ are to order separately.

For standard version:

- 1 Mechanical clip for locking on DIN rail and modules between them
- 2 Release button for disengaging the module from the Base
- 3 Status LEDs:
 - 1 LED (Green) module operating (RUN)
 - 1 LED per channel (Green) channel diagnostic
 - 1 LED (Red) module error (ERR)
- 4 Housing for the terminal block (2)
- 5 Terminal block
- 6 Hinge for the terminal block installation (2)

(1) Planned commercialization. (2) This kit requests two terminal blocks.



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Counting (Incremental High-speed counter)

Function				
		123		
		Counting		
		Because of the second of the s	and the section of th	Common I
Number and type of ch	nannels	1 HSC channel for pulse counting	1 HSC channel for pulse counting	2 HSC channels for pulse counting
		It supports 6 Simple counting functions or 1 Single counting function or 1 Dual counting function or 1 Frequency meter or 1 Ratio meter or 1 Period meter	It supports 6 Simple counting functions or 1 Single Counting function or 1 Dual Counting function or Frequency meter or 1 Ratio meter or 1 Period meter or 1 PWM output	1 It supports 12 Simple counting functions or 2 Single counting functions or 2 Dual counting functions or 2 Frequency meters or 2 Ratio meters or 2 Period meters or 2 PWM outputs
Counting frequency		250 kHZ	250 kHZ	250 kHZ
Inputs	Number	6	6	12
	Logic	Sink/Source	Sink/Source	Sink/Source
	Voltage	24 VDC	24 VDC	24 VDC
	Current	2.27 mA at 24V	2.27 mA at 24V	2.27 mA at 24 VDC
Outputs	Number	-	4	8
	Logic	-	Push-pull (use as Source)	Push-pull (use as Source)
	Voltage	-	24 VDC	24 VDC
	Limits	-	30 VDC	30 VDC
	current	-	0.5 A	0.5 A
Current consumption	Bus current	40 mA at 24 VDC	45 mA at 24 VDC	55 mA at 24 VDC
	Internal Field current maximun for input	3 mA	3 mA	3 mA
	Internal Field current maximun for output	-	500 mA at 24 VDC	500 mA at 24 VDC
Isolation	Isolation between channels	None	None	None
	Isolation between groups	850 VAC	850 VAC	850 VAC
	Isolation between channels and bus	1500 VAC	1500 VAC	1500 VAC
	Isolation between channels and ground	-	-	-
Synchronization (2)		Yes	Yes	Yes
Input protection		Over voltage Protection	Over voltage Protection	Over voltage Protection
Output protection		-	Short Circuit Protection	Short Circuit Protection
Size	Height	100 mm (3.93 in)	100 mm (3.93 in)	100 mm (3.93 in)
	Width	15 mm (0.59 in) (1 slot)	30 mm (1.18 in) (2 slots)	30 mm (1.18 in) (2 slots)
Operating temperature	Standard version	-20 to +60°C (-4 to +140°F)	_	-20 to +60°C (-4 to +140°F)
15mporatoro	Hardened version	-	-40 to +70°C (-40 to +158°F)	-
Sold as a kit (Base + Functionnal module)	Standard version	NTSEHC0100K	-	NTSEHC0220K
. unodomiai module)	Hardened version	-	NTSEHC0120HK	-
See page		41		
Compatible terminal	Number of points-Pitch-Voltage	12 Pts-5 mm-DC	12 Pts–5 mm–DC	18 Pts-3.81 mm-DC
blocks	Number of terminal blocks to use	1	1	1

NTSXTB12201H

NTSXTB12000H

NTSXTB12001H

(1) Available soon. (2) Planned commercialization.

Spring TB

Screw TB

Without cover

Without cover

With cover

With cover

NTSXTB12200H

NTSXTB12201H

NTSXTB12000H

NTSXTB12001H

NTSXTB18201H

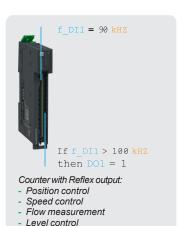
NTSXTB18000H NTSXTB18001H

Presentation Description

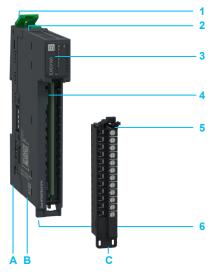
Modicon Edge I/O NTS

The future-ready I/O system for data aggregation Counting (Incremental High-speed counter)





Part counting Defect detection



Presentation

- The Counting kits include an electronic module and its corresponding Base, which match in height and width.
- The electronic module provides the high-speed counting function.
- The Base ensures the mounting on the Din rail, the transmission of data, and the supply of the Counting module through the Backplane bus. The Base also provides fieldtest device power supply.
- Combo counting kits provide 1 up to 2 channels with different level of performance, protection or diagnostic.

Implementation

- The Counting kits use 1 slot (15 mm (0.59 in) width)), or 2 slots (30 mm (1.18 in) width) on DIN rail, depending on the model.
- The kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

Characteristics

- The kits are offered:
 - in Standard version with an operating temperature of -20 to +60°C (-4 to +140°F)
 - in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions.

Description

A Combo kit comprises a Base A, and an Electronic module B. The terminal block C is to order separately.

- 1 Mechanical clip for locking on DIN rail and modules between them
- 2 Release button for disengaging the module from the Base
- 3 Status LEDs:
 - 1 LED (Green) module operating (RUN)
 - 1 LED per channel (Green) channel diagnostic
 - 1 LED (Red) module error (ERR)
- 4 Housing for the terminal block
- 5 Terminal block
- 6 Hinge for the terminal block installation

The future-ready I/O system for data aggregation Counting (Incremental High-speed counter)



NTSEHC0100K



NTSEHC0120HK



NTSEHC0220k



12 Pts-5 mm-DC/AC



References Counting kits (Counter module + Base) Discrete inputs Discrete outputs Synchronization Version Weight Channels kg/ 0.096/ 0.211 HSC channel for pulses 6x 24 VDC Yes Standard NTSEHC0100K Sink/Source counting 250 kHz (using 4 inputs 24 VDC) HSC channel for pulses 6x 24 VDC 4x 24 VDC Hardened NTSEHC0120HK 0.159/ Yes counting Sink/Source Push-pull (use as 0.350 250 kHz Source) (using 4 inputs 24 VDC) HSC channel for pulses 12x 24 VDC 8x 24 VDC Standard NTSEHC0220K 0.164/ 0.361 counting Sink/Source Push-pull (use as 250 kHz Source) (using 8 inputs 24 VDC)

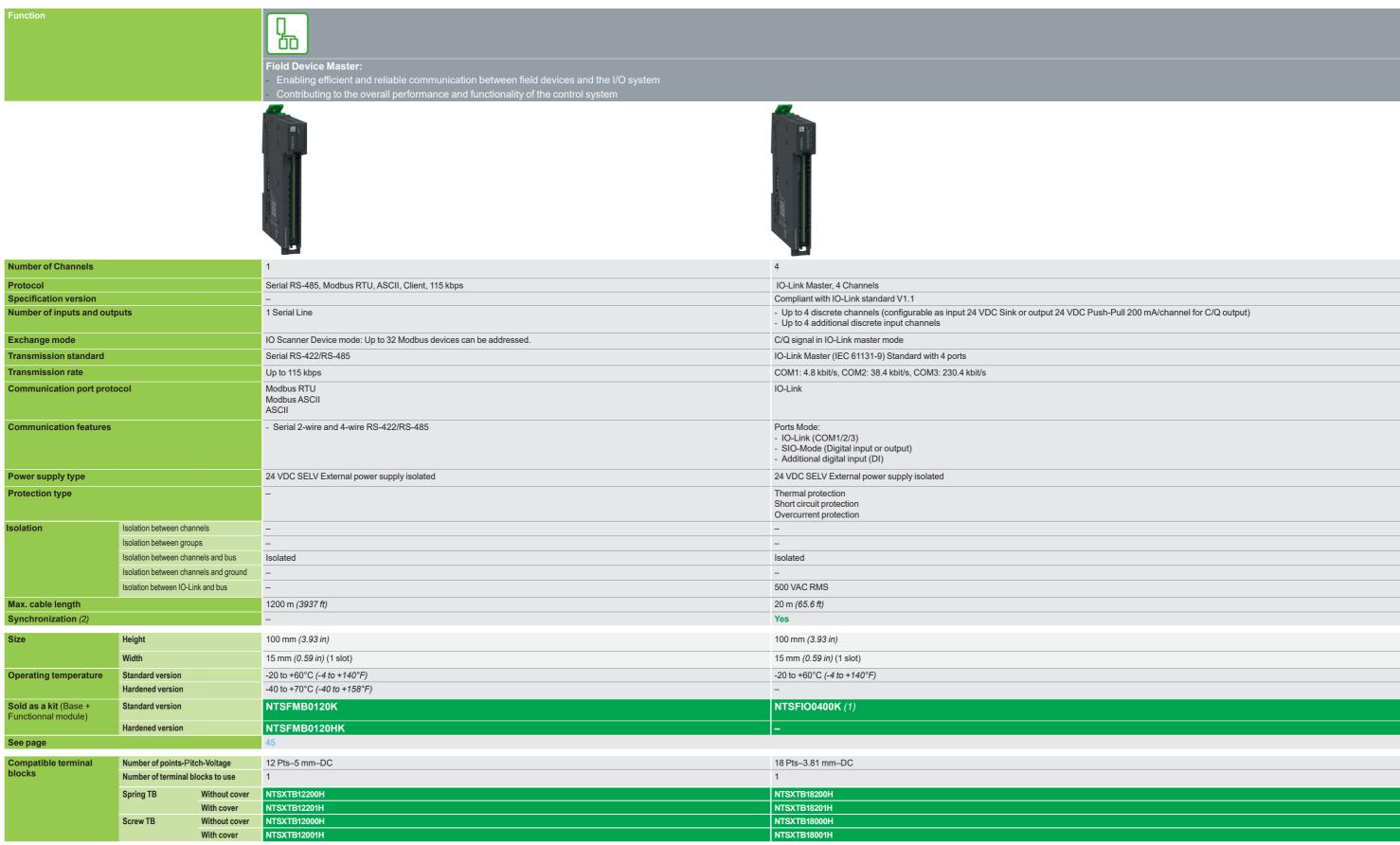
Terminal blocks					
Number of points-Pitch-Voltage	Туре	Cover	Reference	Weight kg/lb	For use with the kit
12 Pts–5 mm–DC	Spring	Without cover	NTSXTB12200H	0.029/0.063	NTSEHC0100K, NTSEHC0120HK (3
		With cover	NTSXTB12201H	0.040/0.088	
	Screw	Without cover	NTSXTB12000H	0.048/0.105	NTSEHC0100K, NTSEHC0120HK (3)
		With cover	NTSXTB12001H	0.058/0.127	
18 Pts-3.81 mm-DC	Spring	Without cover	NTSXTB18200H	0.028/0.061	NTSEHC0220K(3)
		With cover	NTSXTB18201H	0.038/0.083	
	Screw	Without cover	NTSXTB18000H	0.039/0.085	NTSEHC0220K(3)
		With cover	NTSXTB18001H	0.049/0.108	

Accessories	
Mounting accessories, Labels, Shielding accessories, and Cluster Termination	See page 59
Spare parts	
Spare parts for replacement: Functional modules, Bases, Terminal blocks,	See pages 60 to 63

(1) Available soon. (2) Planned commercialization. (3) This kit requests two terminal blocks.

The future-ready I/O system for data aggregation

Field Device Master



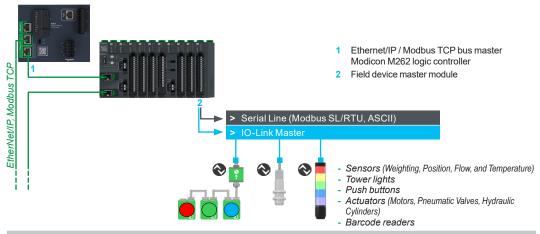
The future-ready I/O system for data aggregation Field Device Master



Presentation

The Field Device Master kits (FDM kits) include an electronic module and its corresponding Base, which match in height and width.

- The electronic module provides the function: centralized communication interface for connecting field devices (sensors and actuators), in industrial automation systems.
- The FDM module enables efficient data exchange, Diagnostic, and configuration of field devices with those protocols:
 - Serial line RS-485, Modbus RTU, ASCII Client: the kit allows to initiate and control communication with other devices on the network, such as slave devices or other masters.
 - IO-Link Master: the kit allows to connect sensors and actuators to the Edge I/O NTS system in accordance with
 the IO-Link standard, and in conjunction with the EtherNet/IP network interface kit. It transforms the devices into
 real communicators, offering a wide range of functions with associated setting options and status information
 because of their communication capability.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of the FDM module through the backplane bus. The Base also provides fieldtest device power supply.



Implementation

- Up to 4 IO-Link devices per channel (3/4 wires Class A) can be installed in a configuration.
- The FDM kits use 1 slot (15 mm (0.59 in) width) on DIN rail.
- The kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

Characteristics

- The kits are offered:
 - in Standard version with an operating temperature of -20 to +60°C (-4 to +140°F)
 - in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's
 operation.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions.

Description

A Field Device Master kit comprises a Base A, and an Electronic module B. The terminal block C is to order separately.

- 3 Mechanical clip for locking on DIN rail and modules between them
- 4 Release button for disengaging the module from the Base
- 5 Status LEDs
 - 1 LED (Green) module operating (RUN)
 - 1 LED per channel (Green) channel diagnostic
 - 1 LED (Red) module error (ERR)
- 6 Housing for the terminal block
- 7 Terminal block
- 8 Hinge for the terminal block installation



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Field Device Master









NTSFIO0400K





Field device	e master kits (FDM n	nodule + Base)				
Number of Channels	Protocol	Number of inputs and outputs	Synchronization (2)	Version	Reference	Weight kg/ <i>lb</i>
1	Serial RS-485, Modbus RTU, ASCII,	1 Serial Line	-	Standard	NTSFMB0120K	0.077/ <i>0.16</i> 9
	Client, 115 kbps		_	Hardened	NTSFMB0120HK	0.077/ 0.169
Up to 4	IO-Link Master	- Up to 4 discrete channels (configurable as input 24 VDC Sink o output 24 VDC Push-Pull 200 mA/ channel for C/Q output) - Up to 4 additional discrete input channels	r)	Standard	NTSFIO0400K (1)	0.102/ 0.224

Terminal blocks						
Number of points-Pitch-Voltage	Туре	Cover	Reference	Weight kg/lb	For use with the kit	
12 Pts-5 mm-DC	Spring	Without cover	NTSXTB12200H	0.029/0.063	NTSFMB0120K,NTSFMB0120HK	
		With cover	NTSXTB12201H	0.040/0.088		
	Screw	Without cover	NTSXTB12000H	0.048/0.105		
		With cover	NTSXTB12001H	0.058/0.127		
18 Pts-3.81 mm-DC	Spring	Without cover	NTSXTB18200H	0.028/0.061	NTSFIO0400K (1)	
		With cover	NTSXTB18201H	0.038/0.083		
	Screw	Without cover	NTSXTB18000H	0.039/0.085		
		With cover	NTSXTB18001H	0.049/0.108		

	with cover	NISXIB18001H	0.049/0.108	
Accessories				
Mounting accessories, Labels, Sh	ielding accessories, an	d Cluster Terminati	on	See page 59
Spare parts				
Spare parts for replacement: Func	tional modules, Bases	Terminal blocks,		See pages 60 to 63
(1) Available soon (2) Planned comme	rcialization			

Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Passive (Common distribution, Dummy)

Function							
Tunction							
			Pagaiya				
			Passive Common Distribution kits for d	istributing electrical power		Dummy kits: non-functional or simu without performing any actual contr	lated module that replicates the physical form and connection interface of a real module ol or input/output functions
			Extraction for the first track of the first track o	B consecutive of the second of	Section of the sectio	Distriction of the second of t	
Number of Channels			16 x 0 VDC commons	16 x 24 VDC commons	8 x 0 VDC commons 8 x 24 VDC commons	1-slot	2-slot
Protection type		-	 Overvoltage protection Undervoltage protection Overload protection Short-circuit protection Reverse polarity protection Inrush current control Power up limitation PE Current 	Overvoltage protection Undervoltage protection Overload protection Short-circuit protection Reverse polarity protection Inrush current control Power up limitation PE Current	-	-	
Nominal operating curr	ent (Field)		10.5 A	10.5 A	10.5 A	-	-
Maximum power dissip	ation in W		0.587 W	1.348 W	1.428 W	-	-
Voltage range (supply v	voltage range)		0 Vdc	19.230.0 Vdc	19.230.0 Vdc	-	-
Current consumption	Max. bus current		3 mA	3 mA	3 mA	-	-
	Max. field current		0 mA	0 mA	0 mA	-	
Size	Height		100 mm (3.93 in)	100 mm (3.93 in)			
	Width		15 mm (0.59 in) (1 slot)	30 mm (1.18 in) (2 slots)	15 mm (0.59 in) (1 slot)	15 mm (0.59 in) (1 slot)	30 mm (1.18 in) (2 slots)
Operating temperature	Standard version		-	-	-	-	-
	Hardened version		-40 to +70°C (-40 to +158°F)	-40 to +70°C (-40 to +158°F)			
Sold as a kit (Base +	Standard version		-	-	-	-	
Functionnal module)	Hardened version		NTSPCM0016HK	NTSPCM1600HK	NTSPCM0808HK	NTSDMY0100HK	NTSDMY0200HK
See page			49				
Compatible terminal	Number of points-P	Pitch-Voltage	18 Pts-3.81 mm-DC	18 Pts-3.81 mm-DC	18 Pts-3.81 mm-DC	-	-
blocks	Number of terminal	blocks to use	1	1	1	-	-
	Spring TB	Without cover	NTSXTB18200H	NTSXTB18200H	NTSXTB18200H	-	
		With cover	NTSXTB18201H	NTSXTB18201H	NTSXTB18201H	-	-
	Screw TB	Without cover	NTSXTB18000H	NTSXTB18000H	NTSXTB18000H	-	-
		With cover	NTSXTB18001H	NTSXTB18001H	NTSXTB18001H	-	-

The future-ready I/O system for data aggregation Passive (Common distribution, Dummy)



Presentation

The passive kits include an electronic module and its corresponding Base, which match in height and width.

Common Distribution kits

- The Common distribution module provides the function: managing and distributing electrical power throughout the Edge I/O NTS system. As a centralized point for power distribution, it incorporates features such as circuit protection, monitoring, and control
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of the module through the Backplane bus. The Base also provides fieldtest device power supply.

Dummy kits

- The dummy module in Edge I/O NTS system involves configuring a placeholder module to mimic the behavior of a real module, without performing any real input or output functions. It is used for testing, development, or as a temporary placeholder in the absence of a real module. It can be configured to match the attributes of the real module, such as addressing, data format, and communication protocols.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of the module through the Backplane bus. The Base also provides fieldtest device power supply.

Implementation

- The kits use 1 slot (15 mm width (0.59 in))), or 2 slots (30 mm width (1.18 in)) on DIN rail, depending on the model.
- The Common distribution kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

Characteristics

- The kits are offered in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions

Description

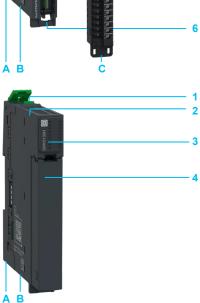
A Passive kit comprises a Base A, and an Electronic module B. The terminal block C is to order separately.

- Mechanical clip for locking on DIN rail and modules between them
- 2 Release button for disengaging the module from the Base
- 3 Status LEDs:
 - 1 LED (Green) RUN Logic supplied
 - 1 LED (Green) FIELD power supply
- 4 Housing for the terminal block
- Terminal block
- Hinge for the terminal block installation



A Dummy kit comprises a Base A, and an Electronic module B.

- Mechanical clip for locking on DIN rail and modules between them
- Release button for disengaging the module from the Base
- Status LEDs
 - 1 LED (Green) BUS power supply
 - 1 LED (Green) FIELD power supply
- 4 Cover



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Passive (Common distribution, Dummy)













NTSDMY0200HK



18 Pts-3.81 mm-DC

References			
Passive kits (Passive module + Bas	se)		
Designation	Version	Reference	Weight kg/ <i>lb</i>
Common Distribution kits			
16 x 0 VDC commons	Hardened	NTSPCM0016HK	0.098/ 0.216
16 x 24 VDC commons with one electronic fuse	Hardened	NTSPCM1600HK	0.100/ 0.220
8 x 0 VDC commons 8 x 24 VDC commons with one electronic fuse	Hardened	NTSPCM0808HK	0.100/ 0.220
Dummy kits			
1-slot: 15 mm width (0.59 in)	Hardened	NTSDMY0100HK	0.100/ 0.220
2-slot: 30 mm width (1.18 in)	Hardened	NTSDMY0200HK	0.142/ 0.313

Terminal blocks					
Number of points-Pitch-Voltage	Туре	Cover	Reference	Weight kg/lb	For use with the kit
18 Pts-3.81 mm-DC	Spring	Without cover	NTSXTB18200H	0.028/0.061	NTSPCM0016HK, NTSPCM1600HK,
		With cover	NTSXTB18201H	0.038/0.083	NTSPCM0808HK
	Screw	Without cover	NTSXTB18000H	0.039/0.085	NTSPCM1600HK,
		With cover	NTSXTB18001H	0.049/0.108	NTSPCM0808HK

Accessories

Mounting accessories, Labels, Shielding accessories, and Cluster See page 59 Termination

Spare parts for replacement: Functional modules, Bases, Terminal See pages 60 to 63 blocks, ...

Modicon Edge I/O NTS
The future-ready I/O system for data aggregation

Power supply

Function				
P				
			Power supply	
			Distribution of Bus Power supply for Network Interface modules (NIM), and modules	Distribution of Field Power in a cluster of modules
			and the loss of th	
			and the first of t	Section assessment and the section of the section o
Rated supply voltage			24 VDC	24 VDC
Power supply output of	current		3.5 A for Bus supply 10.5 A for Field supply	10.5 A for Field supply
Valtana nama				40.0 201/40
Voltage range			19.230 VAC	19.230 VAC
Input current			3.5 A for Bus supply 10.5 A for Field supply	10.5 A for Field supply
Maximum power dissipation in W			1.562 W	1.314 W
Protection type			- Overvoltage protection for bus and field	- Overvoltage protection for field
			Undervoltage protection for bus and field Overload protection for bus and field	 Undervoltage protection for field Overload protection for field
			- Short-circuit protection for bus and field	- Short-circuit protection for field
			Reverse polarity protection for bus and field Inrush current control for field	- Reverse polarity protection for field - Inrush current control for field
			- Voltage surge protection for bus & field	- Voltage surge protection for field
			- Short power cut for bus	
Current consumption	l e		- Max. bus current 3500 mA - Max. field current 10500 mA	- Max. bus current 3 mA - Max. field current 10500 mA
			- Max. field current 10500 mA	
Automatic disjunction	n		-	Yes
Hot swapping			Yes	Yes
Size	Height		100 mm (3.93 in)	100 mm (3.93 in)
	Width		15 mm (0.59 in) (1 slot)	15 mm (0.59 in) (1 slot)
			10 11111 (0.00 11) (1 5101)	10 IIIII (0.00 III) (1 010L)
Operating temperature	Standard version		-	-
toporataro	Hardened version		-40 to +70°C (-40 to +158°F)	-40 to +70°C (-40 to +158°F)
Sold as a kit (Base + Functionnal module)	Standard version		-	-
- unoudfinal module)	Hardened version		NTSPFB1002HK	NTSPFD1002HK
	Transaction version		TOT DISOZITIC	NTO TE 10021IK
See page			53	
Compatible terminal	Number of points-Pit	tch-Voltage	2 Pts-5 mm-DC	2 Pts–5 mm–DC
blocks	Number of terminal b	locks to use	2	1
	Spring TB	Without cover	NTSXTB02230H	NTSXTB02230H
	Screw TB	Without cover	NTSXTB02030H	NTSXTB02030H

Presentation Description

Modicon Edge I/O NTS

The future-ready I/O system for data aggregation Power supply



Presentation

The Power supply kits include an electronic module and its corresponding Base, which match in height and width.

- The power supply module provides the functions:
 - Supplying the necessary electrical power to the I/O modules and the Network interface modules within the system, ensuring they operate reliably and consistently.
 - Helping to maintain stable and regulated power distribution to all connected modules, contributing to the overall functionality and performance of the I/O system.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of the module through the Backplane bus. The Base also provides fieldtest device power supply.

Implementation

- The kits use 1 slot (15 mm (0.59 in) width) on DIN rail.
- The kits must be completed with spring or screw removable terminal blocks to wire the devices. The terminal blocks must be chosen and ordered separately.
- Spring terminal blocks are recommanded for quick, tool-free connection of the sensors and actuators. The quality of the spring terminals avoids the need for periodic re-tightening.

Characteristics

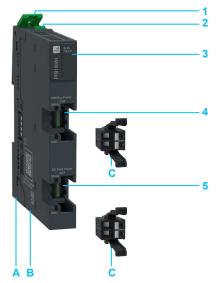
- The kits are offered in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- Hot swapping capability: replacing or adding components without having to power down or interrupt the system's operation.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions.



A power supply kit comprises a Base A, and an Electronic module B. The terminal blocks C are to order separately (1).

- 1 Mechanical clip for locking on DIN rail and modules between them
- 2 Release button for disengaging the module from the Base
- 3 Status LEDs:
 - 1 LED (Green): BUS power supply / RUN Logic supplied (depending on the model)
 - 1 LED (Green): FIELD power supply
- 4 Housing for the terminal block (Bus connector)
- 5 Housing for the terminal block (Field connector)

(1) The power supply kit request one or two terminal blocks. depending on the power supply model)



Modicon Edge I/O NTS The future-ready I/O system for data aggregation Power supply



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1	PFB1002H	
1	Madia Paeri GO 2 rest	
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NTSPFB1002HK



NTSXTB02030H

References				
Power supply k	its (Power supply module + Base)			
Rated supply voltage	Use	Version	Reference	Weight kg/
24 VDC	Distributes Bus Power supply for Network Interface modules (NIM), and modules $$	Hardened	NTSPFB1002HK	0.104 <i>0.</i> 229

- 3.5 A for Bus supply
 10.5 A for Field supply
 Mandatory module after a NIM or an extender
- Includes all functions of Device power supply

Distributes Field Power supply in a cluster of modules - 10.5 A for Field supply

Hardened

NTSPFD1002HK

0.104/ 0.229

- Automatic disjunction
- Can be added when more than 10 A is required or to manage several segments

Number of points-Pitch-Voltage	Туре	Cover	Reference	\\/aiab#	
			Reletetioe	kg/lb	For use with the kit
Pts-5 mm-DC	Spring	Without cover	NTSXTB02230H	0.008/0.017	NTSPFD1002HK, NTSPFB1002HK(1)
	Screw	Without cover	NTSXTB02030H	0.011/ 0.024	
Accessories					

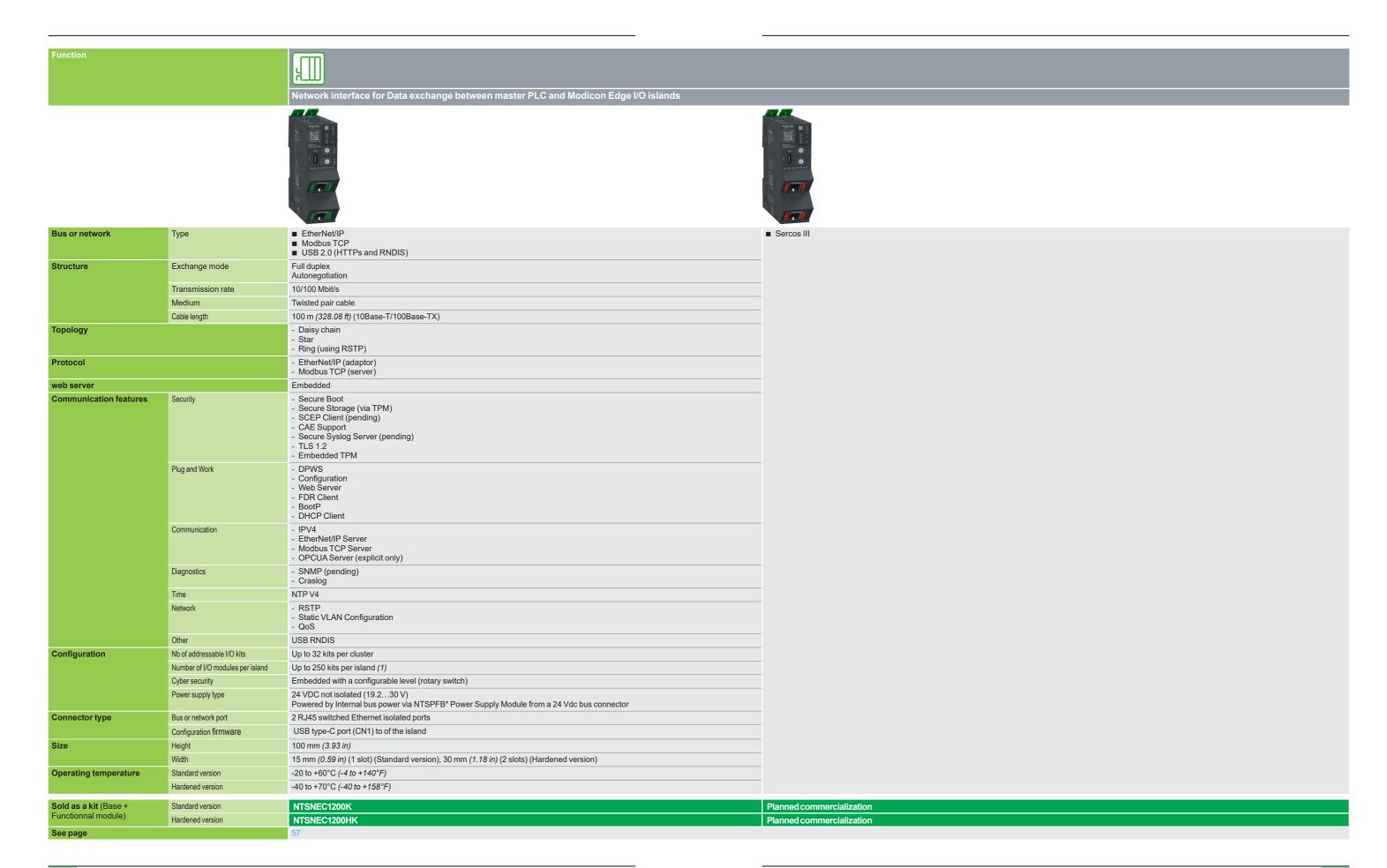
Accessories	
Mounting accessories, Labels, Shielding accessories, and Cluster Termination	See page 59
Spare parts	
Spare parts for replacement: Functional modules, Bases, Terminal blocks,	See pages 60 to 63

⁽¹⁾ This kit requests two terminal blocks.



The future-ready I/O system for data aggregation

Network interface



Presentation Description

Modicon Edge I/O NTS

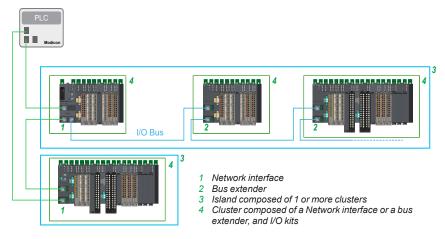
The future-ready I/O system for data aggregation Network interface



Presentation

The network interface kits include an electronic module and its corresponding Base, which match in height and width.

- The network interface module (NIM) (bus coupler) ensures communication between the NTS Edge I/O system, composed in islands, and the Ethernet/IP, Modbus TCP and Sercos III (1) networks. It is completed by a bus expansion module to extend the islands with clusters.
- The network interface module facilitates data exchange between the NTS Edge I/O system, composed of islands, and the networks (Ethernet/IP, Modbus TCP, and Sercos III protocols. It allows the I/O system to send and receive data for monitoring, control, and coordination purposes. It is complemented by bus expansion modules to extend the islands with new clusters.
- The Base ensures the mounting on the Din rail, the transmission of data and the supply of the module through the Backplane bus. The Base also provides fieldtest device power supply.



Implementation

- The network interface occupies the first two or three slots of a cluster.
- The Network interface kits use 2 slots (30 mm (1.18 in) width) on DIN rail, or 3 slots 45 mm (1.57 in) on DIN rail.

Characteristics

- The kits are offered:
 - in Standard version with an operating temperature of -20 to +60°C (-4 to +140°F)
 - in Hardened version with an operating temperature of -40 to +70°C (-40 to +158°F). The hardened version can operates as the standard version.
- IP degree of protection is IP20. A conformal coating is applied to the Hardened versions.

Description

A network interface kit comprises a Base A, and an Electronic module B.

- 5 Mechanical clip for locking on DIN rail and modules between them
- 6 Release button for disengaging the module from the Base
- 7 Status LEDs, to indicate the operational status of the island
- 8 USB type-C port (CN1) to configure and upgrade firmware of the island
- 9 2 Rotary switches to set the network interface module IP address
- 10 Label space to write the assigned IP address (this unique 48-bit network identifier is hard-coded into the module when it is manufactured)
- 11 Communication port 1 (RJ45 type) to connect the network interface module to the
- 12 Communication port 2 (RJ45 type) to connect the network interface module to the network
- 13 Cyber security rotary switch to set the cyber security mode (on the back side of the Base)
- (1) Planned commercialization



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Network interface



NTSNEC1200K

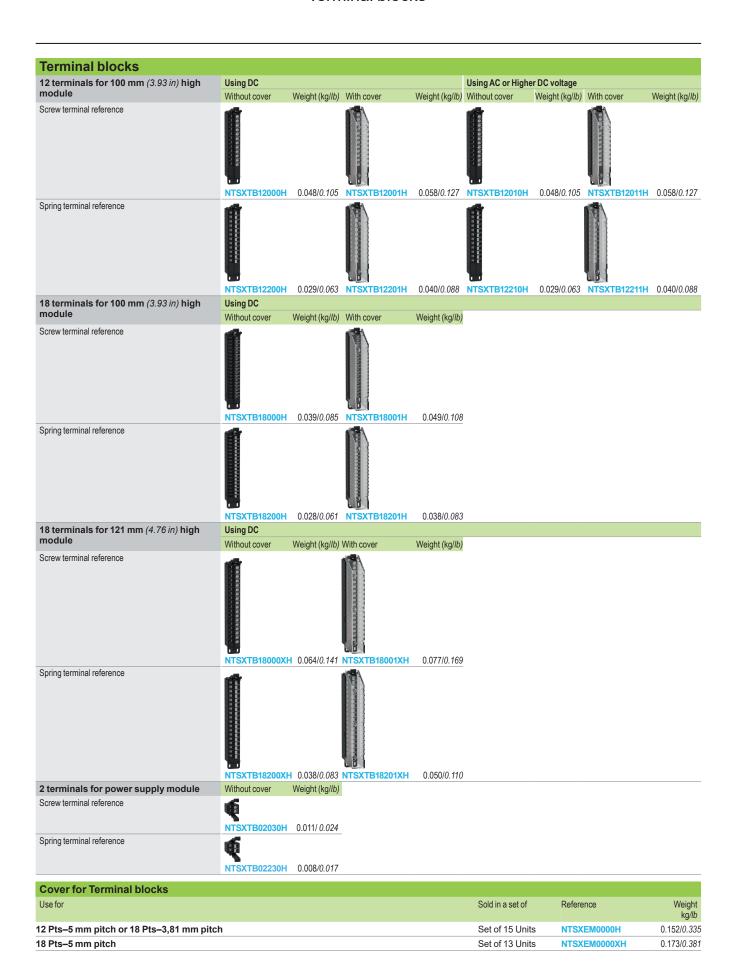


NTSNEC1200HK

References							
Network interface kit	s (Network Inter	face module -	+ Base)				
Network	Designation	Communication port	Data transfer speed	Dangerous voltage	Version	Reference	Weight kg/ <i>lb</i>
■ EtherNet/IP ■ Modbus TCP ■ USB 2.0 (HTTPs and RNDIS)	Network Interface Module + Base + Termination	2x RJ45	100 Mbps	-	Standard	NTSNEC1200K	0.275) 0.606
		2x RJ45	100 Mbps	_	Hardened	NTSNEC1200HK	0.324 0.715

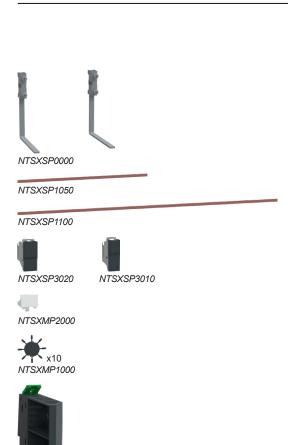
Accessories	
Mounting accessories, Labels, Shielding accessories, and Cluster Termination	See page 59
Spare parts	
Spare parts for replacement: Functional modules, Bases, Terminal blocks,	See pages 60 to 63

The future-ready I/O system for data aggregation Terminal blocks



NTSXMP0000H

Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Accessories

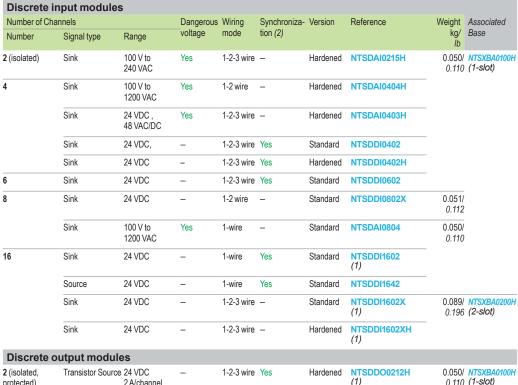


Mounting acco	essories				
Designation			Sold in a set of	Reference	Weight kg/
Kit: 2x Lateral arms and 2x DIN rail end-stoppers	Need 1 metal drawbar NTSX- SP1●●● and clamping rings NTSXSP30●0		5 units	NTSXSP0000	-
Metal drawbar	0.5 m (1.64 ft)		10 units	NTSXSP1050	-
	1 m (3.28 ft)		10 units	NTSXSP1100	_
Clamping rings	To be mounted on the metal drawbar	10 to 7 AWG	20 units	NTSXSP3020	_
		16 to 10 AWG	20 units	NTSXSP3010	_
Label for modules 14 x 10 mm (0.04 x 0.03 in)	To be fixed on top of	f the module	50 Units	NTSXMP2000	0.029/ 0.063
Wheel of 8 flexible co	oding keys		10 Units	NTSXMP1000	0.016/ 0.035
Cluster Termination			-	NTSXMP0000H	0.039/ 0.085

Discrete modules, associated Base

The future-ready I/O system for data aggregation Spare parts: modules and associated bases







	Sink	24 VDC	_	1-2-3 wire	-	Hardened	NTSDDI1602XH (1)		
Discrete o	output module	es							
2 (isolated, protected)	Transistor Source 24 VDC 2 A/channel		_	1-2-3 wire	Yes	Hardened	NTSDDO0212H (1)		NTSXBA0100H (1-slot)
2 (isolated)	Relay	NO/NC, 5 V to 125 VDC, 24 V to 240 VAC 2 A/channel	Yes		-	Standard	NTSDRC0215		
2	Triac	100 V to 240 VAC 1 A/channel	Yes	1-2-3 wire	-	Standard	NTSDAO0205		
4 (isolated)	Triac	100 V to 240 VAC	Yes	1-2-3 wire	-	Standard	NTSDAO0415		NTSXBA0200H (2-slot)
		2 A/channel	Yes	1-2-3 wire	_	Hardened	NTSDAO0415H	0.083/	
	Relay	NO/NC,	Yes	-	-	Standard	NTSDRC0415	0.182	
		5 V to 125 VDC, 24 V to 240 VAC 5 A/channel	Yes	-	-	Hardened	NTSDRC0415H		
4 (protected)	Transistor Source		_	1-2-3 wire	Yes	Standard	NTSDDO0402	0.050/ NTSXBA0100 0.110 (1-slot)	
		500 mA/channel	_	1-2-3 wire	Yes	Hardened	NTSDDO0402H	0.110	(1-SIOT)
6 (protected)	Transistor Source	24 VDC 500 mA/channel,	_	1-2-3 wire	Yes	Standard	NTSDDO0602		
6 (isolated)	Relay	NO, 5 V to 125 VDC, 24 V to 240 VAC 2 A/channel	Yes	-	-	Standard	NTSDRA0615		NTSXBA0200H (2-slot)
8 (protected)	Transistor Source	24 VDC 500 mA/channel	-	1-2 wire	-	Standard	NTSDDO0802X (1)		NTSXBA0100H (1-slot)
		24 VDC 2 A/channel	_	1-wire	Yes	Standard	NTSDDO0802	0.050/ 0.110	
16 (protected)	Transistor Source		_	1-wire	Yes	Standard	NTSDDO1602		
		500 mA/channel	_	1-2 wire	_	Standard	NTSDDO1602XA (3)		NTSXBA0200H (2-slot)
			_	1-2 wire	-	Hardened	NTSDDO1602XAH (3)		
			_	1-2 wire	-	Standard	NTSDDO1602X	0.089/	
			_	1-2 wire	_	Hardened	NTSDDO1602XH	0.196	

(1) Available soon. (2) Planned commercialization. (3) This kit requests an External power supply source. Note: The terminal block reference for use with the module is written on the front of the module.



Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Spare parts: modules and associated bases





Analog in	put modules								
Number of Cha			Dangerous	Wiring	Synchroniza	-Version	Reference		Associated
Number	Signal type	Method	voltage	mode	tion (2)			kg/ <i>lb</i>	Base
2 (isolated)	Current, Voltage	HART Tolerance, Loop power	-	2-3-4-wire	Yes	Standard	NTSAMI0210 (1)		NTSXBA0100 (1-slot)
	Temperature	RTD, Thermocouple, mV,	-	2-3-4 wire	-	Standard	NTSART0214		
	Temperature	RTD, Thermocouple, mV	-	2-3-4-wire	-	Hardened	NTSART0214H		
2 (isolated)	Current, Voltage	HART Tolerance, Loop power	-	2-3-4-wire	Yes	Hardened	NTSAMI0210H (1)		NTSXBA0200 (2-slot)
4 (isolated)	Current	HART Communication, Loop power	-	2-wire	-	Hardened	NTSAHI0412XH	0.089/ 0.196	
4	Current, Voltage	-	-	2-wire	Yes	Standard	NTSAMI0400		NTSXBA0100
	Current, Voltage	Differential	-	2-wire	Yes	Standard	NTSAMI0420	0.110	(1-slot)
4 (Differential)	Temperature	RTD, Thermocouple, mV	-	2-3-wire	-	Standard	NTSART0404		
	Temperature	RTD, Thermocouple, mV	-	2-3-4 wire	-	Hardened	NTSART0404XH	0.051/ 0.112	
6 (Differential)	Temperature	RTD, Thermistor	-	2-3-wire	-	Standard	NTSART0603	0.050/ 0.110	
8	Current	HART Tolerance, Loop power	-	1-2-wire	-	Standard	NTSACI0802X		NTSXBA0200 (2-slot)
	Current	HART Tolerance, Loop power	-	1-2-wire	-	Hardened	NTSACI0802XH		
	Current, Voltage	-	-	2-wire	Yes	Standard	NTSAMI0800		NTSXBA0100 (1-slot)
Analog ou	tput module	s							
2 (isolated)	Current	HART Communication	-	2-wire	-	Hardened	NTSAHO0212H		NTSXBA0200 (2-slot)
2 (isolated)	Current, Voltage	-	-	2-wire	Yes	Standard	NTSAMO0210		NTSXBA0100 (1-slot)
	Current, Voltage	-	-	2-wire	-	Hardened	NTSAMO0210H	0.110	(1-3101)
4	Current, Voltage	-	_	2-wire	Yes	Standard	NTSAMO0400		
	Current, Voltage	-	_	2-wire	-	Hardened	NTSAMO0400H		
Analog In	put/Output M	lodule							
4 inputs 2 outputs (Group isolated)	Current, Voltage	HART Tolerance for the outputs	-	2-wire	Yes	Standard	NTSAMM0600		NTSXBA0100 (1-slot)
High Sp	eed Count	er module	es, asso	ciated	Base				
Number of Channels	Discrete inputs	Discrete outputs		Wiring mode	Synchroniza tion	-Version	Reference	Weight kg/ <i>lb</i>	Associated Base
1 incremental 250 kHz (4 inputs)	2 auxiliary inputs 24 VDC	-	-	-	Yes	Standard	NTSEHC0100		NTSXBA0100 (1-slot)
incremental 250 kHz (8 inputs)	4 auxiliary inputs 24 VDC	8 auxiliary outputs 24 VDC 500 mA/ch	-	-	Yes	Standard	NTSEHC0220		NTSXBA0200 (2-slot)

(1) Available soon. (2) Planned commercialization. (3) This kit requests an External power supply source. Note: The terminal block reference for use with the module is written on the front of the module.



outputs 24 VDC 500 mA/ch

2 auxiliary inputs 4 auxiliary

24 VDC

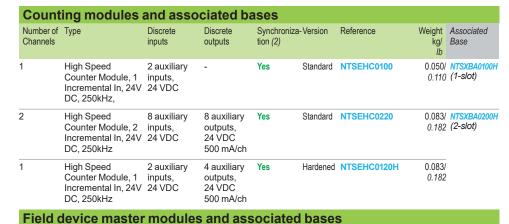
incremental

250 kHz (4 inputs)

NTSEHC0120H

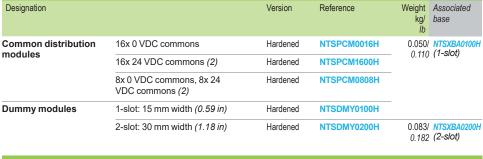
The future-ready I/O system for data aggregation Spare parts: modules and associated bases







Number of Channels	Communication protocol	Version	Reference	Weight Associated kg/ Base /b
1	Serial RS-485, Modbus RTU,	Standard	NTSFMB0120	0.050/ NTSXBA0100H - 0.110 (1-slot)
	ASCII, Client, 115 kbps	Hardened	NTSFMB0120H	- 0.110 (1 - 5101)
Up to 4	IO-Link Master With discrete channels configurable as input or output	Standard	NTSFIO0400 (1)	_
Passive modul	es and associated bases			
Designation		Version	Reference	Weight Associated





Power supply modules and associated bases							
Input voltage	Use	Version	Reference	Weight Associated kg/ base lb			
24 VDC	Distributes Bus Power supply for Network Interface modules (NIM), and modules	Hardened	NTSPFB1002H	0.050/ NTSXBA0104/ 0.110 (1-slot)			
	Distributes Field power supply for a segment of module (4-20 mA, DO, +24 VDC,), 10 A max.	Hardened	NTSPFD1002H	0.050/ NTSXBA0103I 0.110 (1-slot)			

Network interface modules and associated bases							
Network	Communication port	Data transfer speed	Version	Reference	Weight kg/ Ib	Associated base	
EtherNet/IP, Modbus TCP	2x RJ45	100 Mbps	Standard	NTSNEC1200		NTSXBA0201 (2-slot)	
	2x RJ45	100 Mbps	Hardened	NTSNEC1200H		NTSXBA0301 (3-slot)	

(1) Available soon. (2) Equipped with one electronic fuse.

Note: The terminal block reference for use with the module is written on the front of the module.

Modicon Edge I/O NTS
The future-ready I/O system for data aggregation Spare parts: modules and associated bases



	Bases for modules				
	Jse for module type	Number of slot on DIN rail (corresponding to the module width)	Version	Reference	Weight kg/
	- Discrete - Analog	1-slot (15 mm width module)	Hardened	NTSXBA0100H	0.026/ 0.057
-	Counting Motion/Expert (2) Field Device Master Passive (Common, Dummy)	2-slot (30 mm width module)	Hardened	NTSXBA0200H	0.048/ 0.105
-	Power Supply (Bus and Field)	1-slot (15 mm width module)	Hardened	NTSXBA0103H	0.026/ 0.057
-	Power Supply (Field)	1-slot (15 mm width module)	Hardened	NTSXBA0104H	0.026/ 0.057
	Network Interface Module Bus Extender module	2-slot (30 mm width module)	Hardened	NTSXBA0201H	0.048/ 0.105
		3-slot (45 mm width module)	Hardened	NTSXBA0301H	0.057/ 0.125



NTSXBA0200H NTSXBA0201H NTSXBA0301H

(1) Planned commercialization.

Note: The terminal block reference for use with the module is written on the front of the module.

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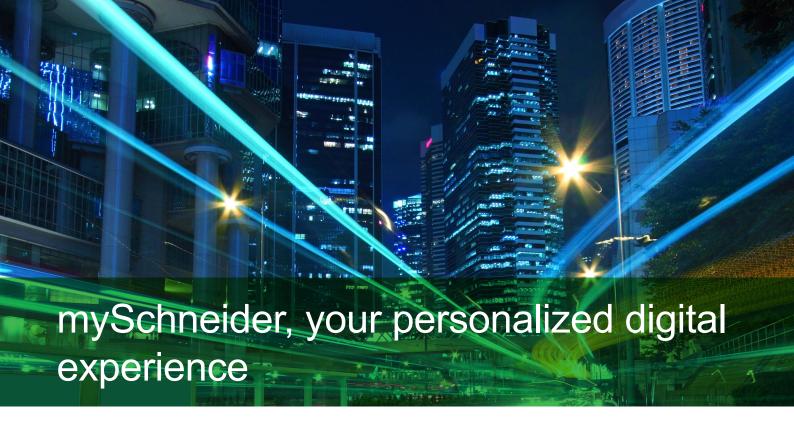
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NTSPCM1600H



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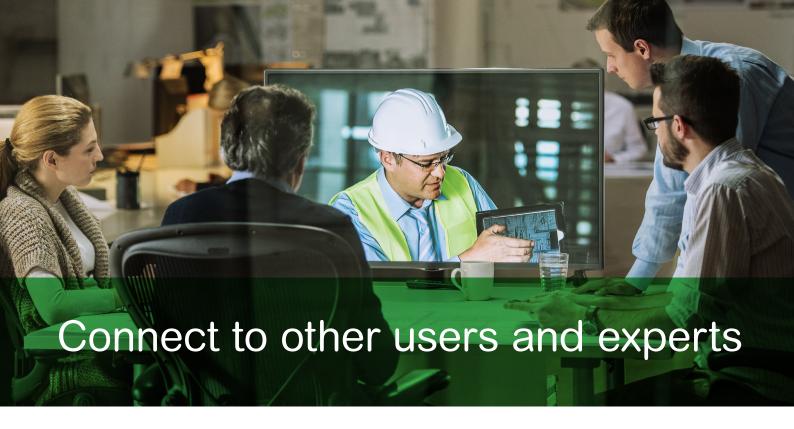


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