

Allen-Bradley® Micro800 Smart Relays and Micro PLCs

Setting the benchmark for convenience, ease of use and control

AUTOMATION SYSTEMS



Micro800 PLCs and Connected Components Workbench Software

The Micro800 PLC family, together with Connected Components Workbench software, sets a new global standard for convenience and ease of use, while providing just enough control capability to match your application.

SENSORS & SWITCHES



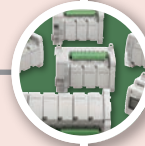
CONNECTIVITY



OPERATOR INTERFACE



LOGIC



SAFETY



POWER



DRIVE





Convenience and connectivity

- Entire family shares common connected components workbench software environment
- Embedded USB for easy programming
- Simple serial communications
- Removable terminal blocks for easy installation and maintenance

One software

- Connected Components Workbench software is used for PLC programming, HMI, drives and motion configuration
- A common user experience helps reduce the learning curve through ease of use
- Available as a free download

Just enough control

- Wide range of small size controllers (from 10 - 48 pts) - designed for low cost, standalone machines
- Plug-in modules personalise the Micro800 controller, so you only pay for the capabilities you need



Part of the Connected Components Bundle

- Application aids make selection and application easy
 - Pre-built HMI screens and sample programs
 - Panel layout, bill of materials and wiring diagrams using E-Tools
- Preferred compatibility within bundle of components
- Reduced supply chain costs
 - Source everything from NHP




Easy to maintain and install

- IEC61131-3 standard instructions
- Point-to-point data exchange for simplified communication
- Automatic device replacement

All new products are backed by NHP with a 12 month warranty*. Two year warranty optional.

* Extended warranty is an extension of the original product warranty and subject to NHP terms and conditions which are available upon request. Extended warranty excludes fair wear and tear from use and when published maintenance procedures have not been adhered too. Product may be substituted with a like for like product at the sole discretion of NHP.

Micro800 PLC Family Overview Specifications

Bulletin 2080	Micro810	Micro820
		
Unit I/O	12pt	20pt
Embedded Communications	USB (with adapter)	Ethernet, RS232/485
Instructions/Data	2Ksteps/ 2Kbytes (up to 400bytes non-volatile)	10Ksteps/ 20Kbytes (up to 400bytes non-volatile)
Plug-in Modules	N/A	2
Expansion I/O Modules		N/A
Maximum Digital I/O	12	35
Catalogue Number	2080-LC10-12QWB, 2080-LC10-12DWD	2080-LC20-20QWB(R) [▲]
Digital Input/Output	8/4 (12/24V ¹⁾)	12/7 (12/24V ¹⁾)
Analogue Input/Output	Four of 24V DC digital inputs can be configured as 0-10V analogue inputs	1 Analogue output (0-10V) Four of 24V DC digital inputs can be configured as 0-10V analogue inputs
HSC ³⁾	N/A	N/A
Catalogue Number	2080-LC10-12QBB	2080-LC20-20QBB(R) [▲]
Digital Input/Output	8/4 (12/24V ¹⁾)	12/7 (12/24V ¹⁾)
Analogue Input/Output	Four of 24V DC digital inputs can be configured as 0-10V analogue inputs	1 Analogue output (0-10V) Four of 24V DC digital inputs can be configured as 0-10V analogue inputs
Motion Axis ²⁾ /HSC ³⁾	N/A	N/A
Catalogue Number	N/A	N/A
Digital Input/Output	N/A	N/A
Analogue Input/Output	N/A	N/A
Motion Axis ²⁾ /HSC ³⁾	N/A	N/A
Catalogue Number	2080-LC10-12AWA	2080-LC20-20AWB(R) [▲]
Digital Input/Output	8/4 (120/240V AC)	8/7 (120V AC)
Analogue Input/Output	Four of 24V DC digital inputs can be configured as 0-10V analogue inputs	1 Analogue output (0-10V) Four of 24V DC digital inputs can be configured as 0-10V analogue inputs
	Base Unit	
Power Supply*	Embedded 120/240V AC and 12/24V DC	Base Unit has embedded 24V DC Power Supply Optional External 120/240V AC via Cat. No. 2080-PS120-240VAC

1) 12/24V DC and 24V AC supported

2) Each Pulse Train Output Axis is shared with 2 HSC inputs so if max number of PTO is configured then number of HSC is zero

3) 2-wire High Speed Counter shown, divide by 2 to get number of 4-wire HSCs



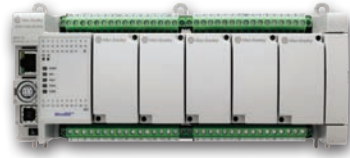

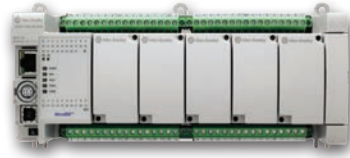

*) Last letter of controller's Catalogue number indicates Input Power: A=120/240V AC, B=24V DC, D=12V DC

▲ Removable terminal blocks are present on Micro820 with Catalogue numbers that end in R. Catalogue numbers that do not end in R have fixed terminal blocks.

For other Micro800 controllers, all controllers with 24-pt or 48-pt have removable terminal blocks.




†) For more details, refer to Micro800 Plug-in Modules Specifications on Page 14

■) For more details, refer to Micro850 Expansion Modules Specifications on Page 15

Micro830				Micro850		Micro 870
						
						
10pt	16pt	24pt	48pt	24pt	48pt	24pt
USB, RS232/485	USB, RS232/485	USB, RS232/485	USB, RS232/485	USB, Ethernet, RS232/485	USB, Ethernet, RS232/485	USB, Ethernet, RS232/486
4Ksteps/ 8Kbytes	4Ksteps/ 8Kbytes	10Ksteps/ 20Kbytes	10Ksteps/ 20Kbytes	10Ksteps/ 20Kbytes	10Ksteps/ 20Kbytes	20Ksteps/240Kbytes
2	2	3	5	3	5	3
N/A				4		8
26	32	48	88	132		304
2080-LC30-10QWB	2080-LC30-16QWB	2080-LC30-24QWB	2080-LC30-48QWB	2080-LC50-24QWB	2080-LC50-48QWB	2080-LC70-24QWB
6/4 (12/24V ¹)	10/6 (12/24V ¹)	14/10 (12/24V ¹)	28/20 (12/24V ¹)	14/10 (12/24V ¹)	28/20 (12/24V ¹)	14/10 (12/24V1)
Via Plug-In Modules				Via Plug-In Modules or with Expansion I/O modules		Via Plug-In Modules or with Expansion I/O modules
2 HSC	2 HSC	4 HSC	6 HSC	4 HSC	6 HSC	4 HSC
N/A	N/A	2080-LC30-24QBB	2080-LC30-48QBB	2080-LC50-24QBB	2080-LC50-48QBB	2080-LC70-24QBB
N/A	N/A	14/10 (12/24V ¹)	28/20 (12/24V ¹)	14/10 (12/24V ¹)	28/20 (12/24V ¹)	14/10 (12/24V1)
N/A	N/A	Via Plug-In Modules ⁺		Via Plug-In Modules ⁺ or with Expansion I/O modules [■]		Via Plug-In Modules ⁺ or with Expansion I/O modules [■]
N/A	N/A	2 PTO/4 HSC	3 PTO/6 HSC	2 PTO/4 HSC	3 PTO/6 HSC	2PTO/4HSC
2080-LC30-10QVB	2080-LC30-16QVB	2080-LC30-24QVB	2080-LC30-48QVB	2080-LC50--24QVB	2080-LC50-48QVB	-
6/4 (12/24V ¹)	10/6 (12/24V ¹)	14/10 (12/24V ¹)	28/20 (12/24V ¹)	14/10 (12/24V ¹)	28/20 (12/24V ¹)	-
Via Plug-In Modules				Via Plug-In Modules or with Expansion I/O modules		-
1 PTO/2 HSC	1 PTO/2 HSC	2 PTO/4 HSC	3 PTO/6 HSC	2 PTO/4 HSC	3 PTO/6 HSC	-
N/A	2080-LC30-16AWB	N/A	2080-LC30-48AWB	2080-LC50-20AWB	2080-LC50-48AWB	-
N/A	10/6 (120V AC only)	N/A	28/20 (120V AC only)	14/10 (120V AC only)	28/20 (120V AC only)	-
N/A	Via Plug-In Modules	N/A	Via Plug-In Modules	Via Plug-In Modules or with Expansion I/O modules		-
Base Unit						

Base Unit has embedded 24V DC Power Supply Optional External 120/240V AC via Cat. No. 2080-PS120-240VAC

Micro800 PLC Family Overview Specifications

Bulletin 2080	Micro810	Micro820
		
Unit I/O	12pt	20pt
+Plug-in Modules Support		
Isolated RS232/485	N/A	Yes
2/4-ch Analogue Input/Output	N/A	Yes
Digital Input/Output	N/A	Yes
Resistance Temperature Detector/Thermocouple	N/A	Yes
Trim Potentiometer	N/A	Yes
DeviceNet Scanner	N/A	Yes
Motion High Speed Counter	N/A	Yes
Backup Memory with High Accuracy Real-Time Clock	N/A	N/A
Additional Functions		
Embedded Real-Time Clock		Yes
LCD	Optional 1.5 in. Local (Cat. No. 2080-LCD)	Optional 3.5 in. LCD Display (Cat. No. 2080-REMLCD)
microSD	N/A	Embedded microSD slot for datalog, recipe and data back-up
Programming		
Software	Connected Components Workbench	
IEC 61131-3 Languages	Ladder Diagram, Function Block, Structured Text	
User Defined Function Blocks	Yes	
Motion Instructions	No	
Floating Point Math	32-bit and 64-bit	
PID Loop Control	Yes	
Communications		
Embedded Communication Protocols	N/A	RS232/485 non-isolated, CIP Serial, Modbus RTU and TCP, ASCII, EtherNet/IP
Environmentals		
Certifications	c-UL-us CL1DIV2, CE, C-Tick, KC	
Temperature Range	0°...55°C	-20°...65°C
Dimensions (HxWxD, mm)	90 x 75 x 60	90 x 100 x 80

Micro830				Micro850		Micro870
						
10pt	16pt	24pt	48pt	24pt	48pt	
*Plug-in Modules Support						
Yes						
Yes						
Yes						
Yes						
Yes						
Yes						
Yes						
Yes						
Additional Functions						
No						
N/A						
N/A						
Programming						
Connected Components Workbench						
Ladder Diagram, Function Block, Structured Text						
Yes						
Yes						
32-bit and 64-bit						
Yes						
Communications						
RS232/485 non-isolated, CIP Serial, Modbus RTU, ASCII				RS232/485 non-isolated, CIP Serial, Modbus RTU and TCP, ASCII, EtherNet/IP		
Environmentals						
c-UL-us CL1DIV2, CE, C-Tick, KC						
-20°...65°C						
90 x 100 x 80	90 x 100 x 80	90 x 145 x 80	90 x 230 x 80	90 x 145 x 80	90 x 230 x 80	90 x 157 x 80

Micro810 Smart Relay

- The Micro810 controller functions as a smart relay with high current relay outputs, but with the programming capabilities of a micro PLC
- 12 pt form factor provides:
 - 8 A outputs eliminates the need for external relays
 - DC models allows four inputs to function as 0-10 V DC Analogue inputs
 - Program download via USB programming port (2080-USB-ADAPTER required)
 - Optional 1.5" local LCD for monitoring/modifying application data. It also functions as a backup memory module.
 - Configure and run core smart relay function blocks without software (2080-LCD screen required).



High functionality and easy to install and program

Base units

Supply voltage	I/O count	Digital inputs			Digital outputs		Analogue inputs 0-10 V	Cat. No.
		120 V AC	24 V AC	12 V DC	Relay	24 V DC		
24 V DC	12		8		4		4	2080-LC10-12QWB
240 V AC		8			4			2080-LC10-12AWA
24 V DC			8			4	4	2080-LC10-12QBB
12 V DC					8	4		2080-LC10-12DWD

Accessories

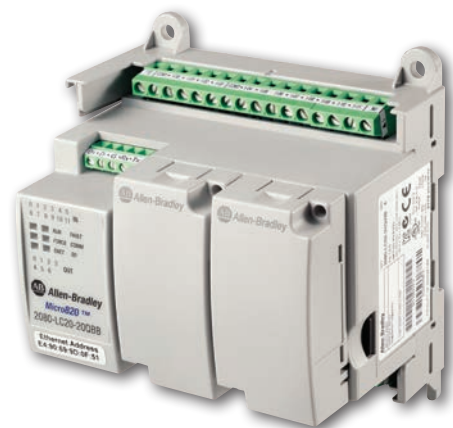
Description	Cat. No.
1.5" LCD display and keypad	2080-LCD
Programming cable, ASB type A-B, male to male	2080-USB-PRG-CAB
USB adaptor for programming with software (for 12 pt CPU)	2080-USB-ADAPTER
Standard programming software (including application notes and sample codes)	2080-DVD
Optional power supply 240 V AC, 110 V AC input, 1.6 A @ 24 V DC output	2080-PS120-240VAC



Refer NHP Pricelist Part R for pricing

Micro820™ Controller

Micro PLC optimised for smaller standalone machines and remote automation projects



The Micro820 20-pt controller is specifically designed for smaller standalone machines and remote automation projects with embedded Ethernet and Serial ports and a microSD™ slot for data logging and recipe management.

- EtherNet/IP™ for Connected Components Workbench programming, RTU applications and HMI connectivity
- Function as a remote terminal unit (RTU) for SCADA applications with support for Modbus over serial and Ethernet communications
- Embedded support for 4 thermistor temperature inputs can function as a direct digital control (DDC) for building management systems (BMS)
- 5KHz PWM Output for controlling solenoids and valves
- Built-in Real Time Clock (RTC) with no battery required
- microSD™ card slot for program transfer, datalog and recipe management
- Models available with removable terminal blocks for easier wiring and installation
- Supports up to two plug-in modules
- Optional remote 3.5 inch LCD display which connects to controller's embedded RS232 port

Base units

Supply voltage	I/O count	Digital Inputs		Digital Outputs		Analogue output 0-10V	Analogue inputs 0-10V	PWM support	Cat. No.
		24 V DC	120 V AC	Relay	24 V DC Source				
24 V DC	20	12			7	1	4 ¹	1	2080-LC20-20QBB
24 V DC	20	12		7		1	4 ¹		2080-LC20-20QWB
24 V DC	20	4	8	7		1	4 ¹		2080-LC20-20AWB
24 V DC	20	12			7	1	4 ¹	1	2080-LC20-20QBRR ²
24 V DC	20	12		7		1	4 ¹		2080-LC20-20QWBR ²
24 V DC	20	4	8	7		1	4 ¹		2080-LC20-20AWBR ²

Accessories

Description	Cat. No.
Programming cable, ASB type A-B, male to male	2080-USB-PRG-CAB
Standard programming software	2080-DVD
Power supply, 240 V AC or 110 V AC input, 1.6 A @ 24 V DC output	2080-PS120-240VAC

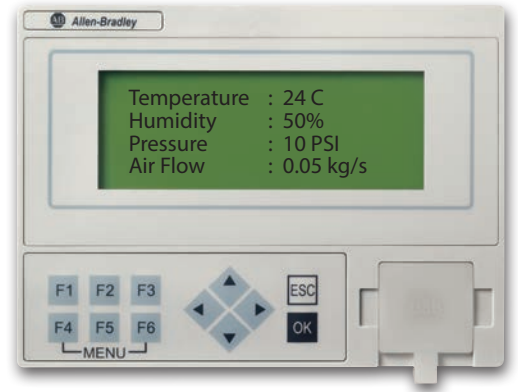
¹) The first 4 inputs can be configured either to digital or Analogue inputs

²) 'R' denotes removable terminals

Micro820 Remote LCD Display

Simple HMI to Micro820 controller

- With 4 or 8 lines of ASCII text and tactile keypad, it can be used as a simple HMI
- Embedded USB port for program upload/download and debugging to controller
- System menu is available in multiple languages for direct viewing and editing of control variables
- Controller's Ethernet address can be easily set from the menu
- Supports front panel mounting as well as DIN rail mounting next to the controller



LCD Display

Communications	
Embedded Serial Port	RS232 (connects to Controller's Embedded RS232 port)
Embedded USB Port	Controller programming port (USB to Serial pass-through)
Environmentals	
Temperature Range (LCD Display)	0°...50°C
Dimensions (HxWxD, mm)	97 x 130 x 36
Catalogue Number 2080-REMLCD	

Micro830

Economical Micro PLC with simple motion

- Designed for standalone machine control applications which require simple motion using PTO
- Flexible communications and I/O capabilities with up to five plug-ins
- Controllers include built-in support for up to three axes of motion
 - As many as three Pulse Train Outputs (PTO)
 - As many as six High-Speed Counter inputs (HSC)
 - 100 kHz speed of PTO and HSC available on 24 V DC models
- Use motion plug-in modules to increase performance and extend number of controllable axis (as many as four axes)
- Embedded communications
 - USB programming
 - Non-isolated serial port (RS232/485)



Decrease your engineering costs
with user friendly Connected
Components Workbench software

Base units

Supply voltage	I/O count	Digital inputs		Digital outputs			Motion axis embedded PTOs	HSC embedded		Cat. No.
		24 V AC 24 V DC	120 V AC	Relay	24 V sink	24 V source		4-wire	2-wire	
24 V DC	10	6		4			-	1	2	2080-LC30-10QWB
		6			4		1	1	2	2080-LC30-10QVB
	16		10	6			-	1	2	2080-LC30-16AWB
		10		6			-	1	2	2080-LC30-16QWB
		10			6		1	1	2	2080-LC30-16QVB
	24	14		10			-	2	4	2080-LC30-24QWB
		14			10		2	2	4	2080-LC30-24QVB
		14				10	2	2	4	2080-LC30-24QBB
	48		28	20			-	3	6	2080-LC30-48AWB
		28		20			-	3	6	2080-LC30-48QWB
		28			20		3	3	6	2080-LC30-48QVB
		28				20	3	3	6	2080-LC30-48QBB

Accessories

Description	Cat. No.
Programming cable, ASB type A-B, male to male	2080-USB-PRG-CAB
Standard programming software (including application notes and sample codes)	2080-DVD
Optional power supply 240V AC, 110V AC input, 1.6 A @ 24V DC output	2080-PS120-240VAC

Mirco850

The Micro850 controller is equipped with the same form factor, plug-in support, instruction/data size and motion capabilities as the 24-pt and 48-pt Micro830 controllers



- Designed for larger standalone machine applications that require more I/O or higher performance analogue I/O than supported by Micro830
- Embedded Ethernet port for higher performance connectivity compared to HMI
- EtherNet/IP and Modbus TCP for Connected Components Workbench programming, RTU applications and HMI connectivity
- Support up to four Micro850 Expansion I/O modules
- Up to a maximum of 132 I/O points (with 48-pt model)

Base units

I/O count	Digital inputs		Digital outputs			Motion axis embedded PTOs	HSC embedded		Cat. No.
	24 V AC 24 V DC	120 V AC	Relay	Sink	Source		4-wire	2-wire	
24		14	10			-	2	4	2080-LC50-24AWB
	14				10	2	2	4	2080-LC50-24QBB
	14			10		2	2	4	2080-LC50-24QVB
	14		10			-	2	4	2080-LC50-24QWB
48		28	20			-	3	6	2080-LC50-48AWB
	28				20	3	3	6	2080-LC50-48QBB
	28			20		3	3	6	2080-LC50-48QVB
	28		20			-	3	6	2080-LC50-48QWB

Description	Cat. No.
Programming cable, ASB type A-B, male to male	2080-USB-PRG-CAB
Standard programming software	2080-DVD
Power supply, 240 V AC or 110 V AC input, 1.6 A @ 24 V DC output	2080-PS120-240VAC

Mirco870

Our Bulletin 2080 Micro870™ Programmable Logic Controllers are designed for large standalone machine control applications that require flexible communications and greater I/O capabilities. These controllers support up to 304 I/O points with high performance I/O, interrupts, and Pulse Train Output (PTO) motion plus embedded Ethernet port and Bulletin 2085 expansion I/O modules.



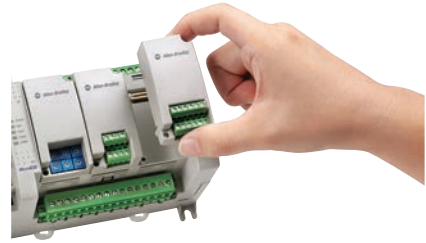
- Offers 24-point controller
- Offers 280 KB memory that supports up to 128 KB user data and up to 20,000 program steps
- Includes 100 kHz high-speed counter (HSC) inputs on 24V DC models
- Provides embedded communications via USB programming port, non-isolated serial port (for RS-232 and RS-485 communications) and Ethernet port
- Supports up to three Micro800® plug-in modules
- Supports up to eight expansion I/O modules and up to 304 I/O points
- Provides embedded motion capabilities by supporting as many as two axes with PTO
- Communicates via EtherNet/IP™
- Operates in -20...65 °C (-4...149 °F) temperatures

Base units

I/O count	Digital inputs		Digital outputs			Motion axis embedded PTOs	HSC embedded		Cat. No.
	24 V AC 24 V DC	120 V AC	Relay	Sink	Source		4-wire	2-wire	
24	14		10			-	2	4	2080-LC70-24QWB
	14				10	2	2	4	2080-LC70-24QBB

Micro820, Micro830, Micro850 and Micro870 Plug-in Modules

- Extend the functionality of embedded I/O without increasing the footprint of your controller
- Increase communication functionality
- Utilise Encompass Product Partners' expertise to add enhanced capabilities with tighter integration to the controller
- Plug-in flexibility applies to Micro820, Micro830 and Micro850 Controllers



Plug-in modules

Description	Cat. No.
4-ch Analogue input, 0-20 mA, 0-10 V, non-isolated, 12-bit	2080-IF4
2-ch Analogue input, 0-20 mA, 0-10 V, non-isolated, 12-bit	2080-IF2
2-ch Analogue output, 0-20 mA, 0-10 V, non-isolated, 12-bit	2080-OF2
RS232/485 isolated serial port	2080-SERIAL-ISOL
6-ch Trim pot Analogue input	2080-TRIMPOT6
Project, data log, recipe backup and high accuracy RTC	2080-MEMBAK-RTC ¹⁾
2-ch RTD, non-isolated	2080-RTD2
2-ch TC, non-isolated	2080-TC2
Weight scale module	HI2080WS
Wireless GSM modem with SMS support and antenna	ILX800SMMSGANT
4 digital inputs, 12/24 V DC, Sink/Source	2080-IQ4
4 digital outputs, 12/24 V DC, Source	2080-OB4
4 digital outputs, 12/24 V DC, Sink	2080-OV4
4 digital inputs, 12/24 V DC, Sink/Source 4 digital outputs, 12/24 V DC, Source	2080-IQ40B4
4 digital inputs, 12/24 V DC, Sink/Source 4 digital outputs, 12/24 V DC, Sink	2080-IQ40V4
4 digital outputs, 2 A, Relay outputs isolated	2080-OW4I
4-ch Analogue input, C/V/TC, or 2-ch, 4-wire RTD	2080SC-IF4U
2-ch 10 A relay output	2080SC-OW2IHC
Four Channel Thermistor Module	2080SC-NTC
High Speed Counter	2080-MOT-HSC
DeviceNet Scanner	2080-DNET20

¹⁾ The 2080-MEMBAK-RTC plug-in module is not supported by the Micro820. The Micro820 controller has an embedded RTC

Extend the functionality
of your base unit



2080-TRIMPOT6



2080-MEMBAK-RTC



2080-IF4

Refer to Part R, Section 3, for a list of plug-in modules.

Micro850 and Micro870 Micro850 Expansion I/O Module

- The Micro850 Expansion I/O module snaps firmly to the right side of Micro850 controller with removable terminal blocks for ease of installation, maintenance and wiring
- High density digital and analogue I/Os to reduce space consumption
- Isolated and higher resolution analogue, RTD, and TC (than plug-in modules) for more accuracy



Description	Cat. No.
32 input, 12/24 V sink/source	2085-IQ32T ¹⁾
16 input, 12/24 V sink/source	2085-IQ16 ¹⁾
16 output, 12/24 sink transistor	2085-OV16 ¹⁾
16 output, 12/24 source transistor	2085-OB16 ¹⁾
16 output, 2 A, relay	2085-OW16 ¹⁾
8 output, 2 A, relay	2085-OW8 ¹⁾
8 input, 120 V AC	2085-IA8 ¹⁾
8 input, 240 V AC	2085-IM8 ¹⁾
8 output, 120/240 V AC, triac	2085-OA8 ¹⁾
8-ch input (-10 V to 10 V), (0 - 20 mA) isolated, 14-bit	2085-IF8 ¹⁾
4-ch input (-10 V to 10 V), (0 - 20 mA) isolated, 14-bit	2085-IF4 ¹⁾
4-ch output (-10 V to 10 V), (0 - 20 mA) isolated, 14-bit	2085-OF4 ¹⁾
4-ch input, RTD, thermocouple, isolated, 0.1C accuracy	2085-IRT4 ¹⁾
End cap	2085-ECR

Micro800 Family Starter Kit and Solution Box Micro810 Starter Kit



Description	Line Power	Cat. no.
Micro810 base unit 24 V DC, 8 digital inputs (24 V DC) 4 digital outputs (relay) (Cat. No.2080-LC 10-12QWB) <ul style="list-style-type: none"> • 1.5" LCD display and keypad plug-in module • Programming cable, ASB type A-B, male to male • USB programming software and application notes • USB programming (12 I/O CPU only) 	24 V DC	M8101224VDC
Micro810 base unit 240 V AC, 8 digital inputs (240 V AC) 4 digital outputs (relay) (Cat. No.2080-LC 10-12AWA) <ul style="list-style-type: none"> • 1.5" LCD display and keypad plug-in module • Programming cable, ASB type A-B, male to male • USB programming software and application notes • USB programming (12 I/O CPU only) 	240 V AC	M81012240VAC

Refer NHP Pricelist Part R for pricing

Notes:

¹⁾ Adding one or more expansion modules require one end cap (Cat. No. 2085-ECR)

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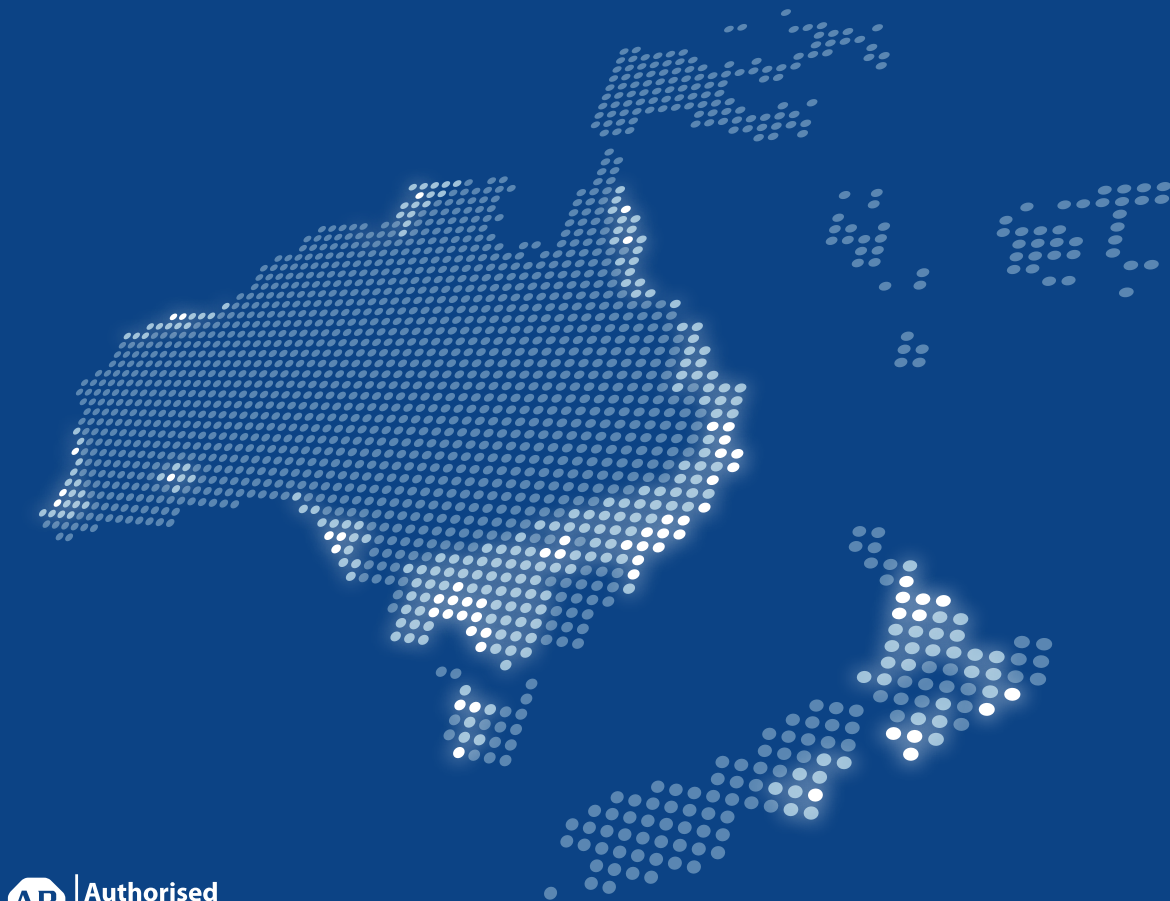
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