CAN Controllers

CAN Controllers

CAN Controllers

NEW

ESW-00047

ESW-11689

ESW-00200

Made in Europe

- Compact versatility – use as either as an I/O module in a CAN network or as a standalone, intelligent programmable controller.
- Ideal for applications where additional outputs are required in an existing system.
- Fully programmable using graphical software.
- Entire range can also be programmed using C.
- Environmentally sealed.
- Highly flexible multifunction inputs (MFI).
- Microplex – world's smallest CAN controllers, footprint of two micro 280 series relays.
- Holder kits specifically designed for Microplex and Micro ranges.
- Short circuit & over current protection.
- CC16WP features 2 x CAN ports. The ESW-00045 Microplex features 3 x CAN ports.
- Made in Europe.

CAN :	SAE J1939, CAN 2.0
Operating Temperature :	-40°C to 85°C
Construction :	PA66 Nylon/Polymer

Microplex

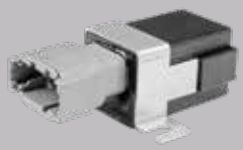
- World's smallest CAN controller – 24 x 30 x 26mm.
- Up to 7 outputs.
- Easy CAN Bus integration allowing system diagnostics.
- 3 x CAN ports (ESW-00045).

CC16WP

- Multiple inputs/outputs.
- 2 x CAN ports.
- 32-bit processor with 65K RAM.

PROP CAN

- Integrated TE DEUTSCH connector for harsh environmental conditions.
- Up to 4 analogue outputs.



Motor Controller

- Controls up to three DC motors with precise ramp functions.
- H-Bridge functionality.
- Multiple inputs/outputs.
- 32-bit processor with 256K RAM.
- Versatile inputs with up to 10 analogue inputs (8 MFI) available.

Micro – Gateway

- Secondary port options include RS485, LIN (Slave), CAN/FD, or an additional CAN.
- Compact design – 30 x 30 x 40mm.
- 32-bit processor with 256K RAM for the ESW-00057.

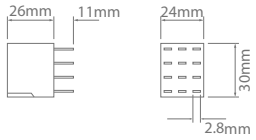
CAN Relay Box

- Potential-free relay functionality.
- Up to 12 relays can be activated.
- Can be integrated into network or as a separate standalone controller.

Micro – Relay

- Potential-free relay functionality.
- Compact design – 30 x 30 x 40mm.
- 32-bit processor with 32K RAM.

CAN Controllers

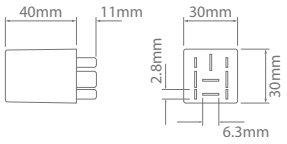


IP67

CAN Controllers – Microplex NEW

Part No.	Voltage	Inputs	Output Polarity	Outputs			Ports			Current Draw (mA) *		Max. Current Rating Per Output (A)
				Total	PWM	Digital	Total	CAN	Secondary	12V	24V	
ESW-00045	8–32	2	—	0	0	0	4	3	LIN (Master)	52	30	—
ESW-00046	9–32	—	Negative	7	6	7	1	1	—	26	26	0.7
ESW-00047	9–32	—	Positive	7	4	1	1	1	—	23	23	2.2
ESW-00049	9–32	3 (MFI)	Positive	4	4	4	1	1	—	36	36	2.0

* Current draw does not include draw from outputs.
MFI – Multi Function Input.
PWM – Pulse Width Modulation.

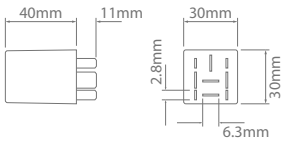


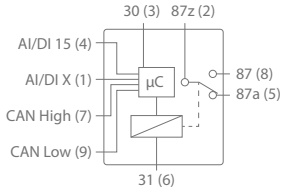
IP6K8

CAN Controllers – Micro – Gateway NEW

Part No.	Voltage	Description	Inputs (MFI)	Outputs			Ports			Current Draw (mA)		Max. Current Rating Per Output (A)
				Total	PWM	Digital	Total	CAN	Secondary	12V	24V	
ESW-00056	9–32	Gateway – CAN, RS485	1	2	2	2	2	1	RS485	8	8	2.3
ESW-00057	9–32	Gateway – CAN, CAN/FD	2	2	2	2	2	1	CAN/FD	70	70	0.5
ESW-00058	8–16	Gateway – CAN, LIN	2	2	2	2	2	1	LIN (Slave)	40	40	0.4

* Current draw does not include draw from outputs.
MFI – Multi Function Input.
PWM – Pulse Width Modulation.





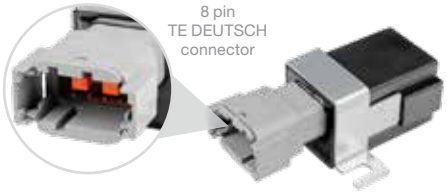
IP6K8

CAN Controllers – Micro – Relay NEW

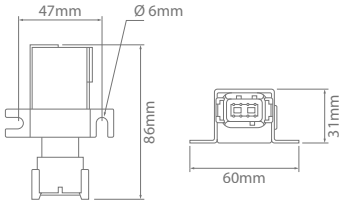
Part No.	Voltage	Description	Inputs (MFI)	Outputs			CAN Port	Current Draw (mA) *		Max. Current Rating Per Output (A)	
				Total	PWM	Digital		12V	24V	NO	NC
ESW-00055	9–32	PLC CAN Relay	1	1	—	1	CAN/FD	32	19	10	5

* Current Draw does not include draw from outputs.
MFI – Multi Function Input.
PWM – Pulse Width Modulation.

CAN Controllers



IP6K8

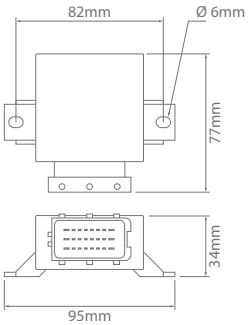


CAN Controllers – PROP CAN NEW

Part No.	Voltage	Description	Inputs (MFI)	Outputs				CAN Ports	Current Draw (mA) *		Max. Current Rating Per Output (A)
				Total	PWM	Digital	Analogue (V)		12V	24V	
ESW-11129	9–32	4 Channel Analogue	4	4	—	4	4	1	40	35	0.25
ESW-11689	7–32	2 Channel PWM	2	2	2	2	—	1	30	30	2.7

* Current Draw does not include draw from outputs.
MFI – Multi Function Input.
PWM – Pulse Width Modulation.

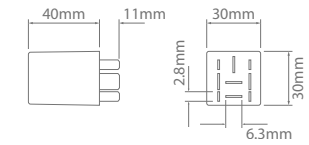
IP6K8

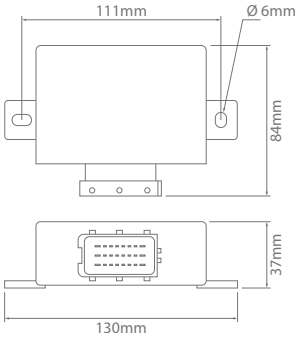


CAN Controllers – CC16WP NEW

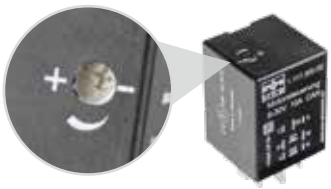
Part No.	Voltage	Inputs (MFI)	Outputs	CAN Ports	Current Draw (mA) *		Max. Current Rating Per Output (A)
					12V	24V	
ESW-00200	9–32	7	8	1 x CAN, 1 x CAN/FD	45	26	2.5
ESW-00295	9–32	7	8	1 x CAN, 1 x RS232	45	26	2.5
ESW-00296	9–32	7	8	2 x CAN FD – AEF Certified	45	26	2.5

* Current Draw does not include draw from outputs.
MFI – Multi Function Input.
The ESW-00296 is AEF certified for ISO bus applications.





Configurable analogue input for user-defined control functions

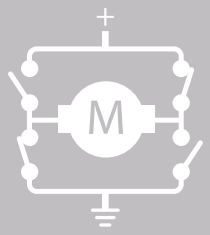


ESW-00061

ESW-00304

H-Bridge Functionality

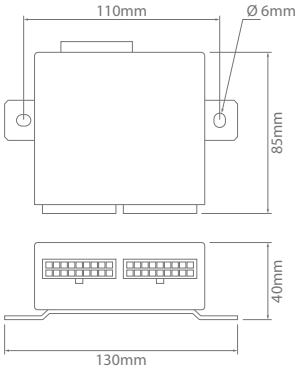
An H-bridge is an electronic circuit that switches the polarity of a voltage applied to a load. These circuits are often used in robotics and other applications to allow DC motors to run forwards or backwards.



CAN Controllers – Motor Controller – H-Bridge NEW

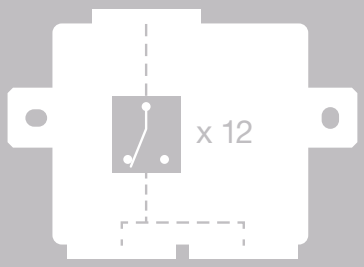
Part No.	Voltage	Inputs (MFI)	Outputs Total	Outputs PWM	Outputs H-Bridge	CAN Port	Current Draw (mA) * 12V	Current Draw (mA) * 24V	Max. Current Rating Per Output (A) PWM	Max. Current Rating Per Output (A) H-Bridge
ESW-00061	9–30	2	2	2	1	CAN	25	25	6	10
ESW-00304	8–32	8	8	2	3	CAN/FD	50	33	6	10

* Current Draw does not include draw from outputs.
MFI – Multi Function Input.
PWM – Pulse Width Modulation.



12 x Internal Relays

The CAN Relay Box incorporates 12 potential-free relays, each of which can be configured to meet the application's needs.



CAN Controllers – CAN Relay Box NEW

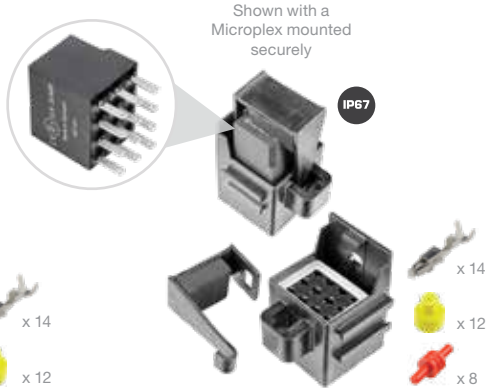
Part No.	Voltage	Inputs Analogue	Outputs PFR	CAN Port	Current Draw (mA) * 12V	Current Draw (mA) * 24V	Max. Current Rating Per Output (A)
ESW-00303	9–30	13Δ	12	1	30	35	8

* Current Draw does not include draw from outputs.
Δ Analogue input range: 0–11.4V.
PFR - Potential-Free Relay

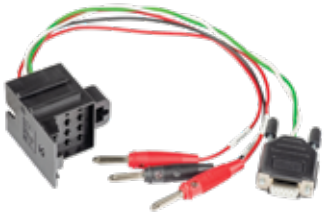
CAN Controllers

FH301

FH601-KIT

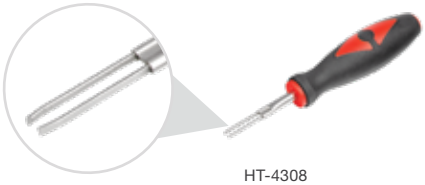


FH602-KIT



ESW-00345

HT-4300



HT-4308

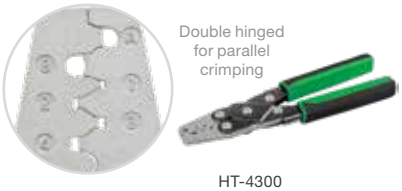
Accessories – Microplex NEW

Part No.	Description	Kit Contents:		
FH301	Fuse & relay enclosure kit	1 x Housing (2304643-4) 1 x Cover (2098164-1)	1 x Mount (FHM001) 60 x Contacts (1241397-1)	60 x Wire Seals (WS1006) 20 x Cavity Plugs (WS1008)
FH601-KIT	Microplex holder kit	1 x Mounting Base 12 x Contacts (929939-3)	12 x Wire Seals (281934-2) 8 x Cavity Plugs (WS1008)	
FH602-KIT	Microplex holder kit – IP67	1 x Mounting Base 1 x Seal	1 x Locking Bracket 12 x Contacts (929939-3)	12 x Wire Seals (281934-2) 8 x Cavity Plugs (WS1008)
ESW-00345	Programming / configuration harness			
HT-4300	Crimping tool – 0.35, 0.5 – 0.8, 1.0 – 2.0, 3.0mm^2			
HT-4308	Contact removal tool			

FH604-KIT

FH605-KIT

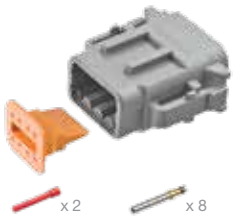
ESW-00355



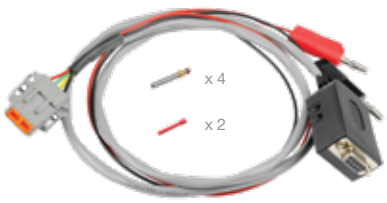
HT-4300

Accessories – Micro – Gateway & Relay NEW

Part No.	Description	Kit Contents:
FH604-KIT	Micro holder base with mounting bracket and sealing gasket	1 x Mounting Base 1 x Bracket with nut & bolt 1 x Sealing Gasket 4 x Contacts – 2.8mm 5 x Contacts – 6.3mm 4 x Seal (Red) – 2.8mm 5 x Seal (White) – 6.3mm 4 x Cavity Plugs (Clear) – 2.8mm 3 x Cavity Plugs (Green) – 6.3mm
FH605-KIT	Micro holder base kit	1 x Mounting Base 4 x Contacts – 2.8mm 10 x Contacts – 6.3mm
ESW-00355	Programming / configuration harness	
HT-4300	Crimping tool – 0.35, 0.5 – 0.8, 1.0 – 2.0, 3.0mm^2	



CONNKIT-PROP



ESW-00365

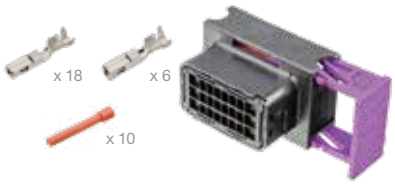
DET20

DET-RT

Accessories – PROP CAN NEW

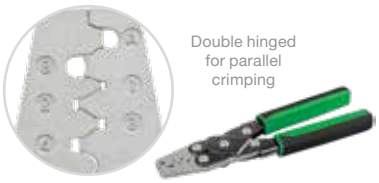
Part No.	Description
CONNKIT-PROP	Connector kit
ESW-00365	Programming / configuration harness
DET20	Crimping tool – size 20 contacts
DET-RT	Multi-use hook tool

CAN Controllers



ESW-00280

ESW-00281



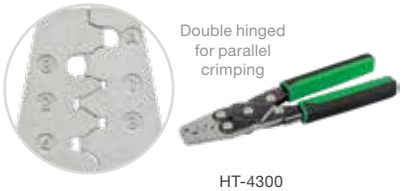
HT-4300

Accessories – CC16WP & Motor Controller NEW

Part No.	Description
ESW-00280	Connector kit
ESW-00281	Programming / configuration harness
HT-4300	Crimping tool – 0.35, 0.5 – 0.8, 1.0 – 2.0, 3.0mm²

ESW-00285

ESW-00286

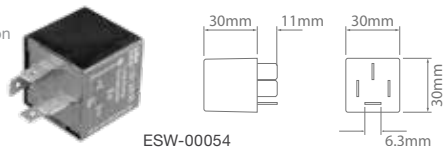


HT-4300

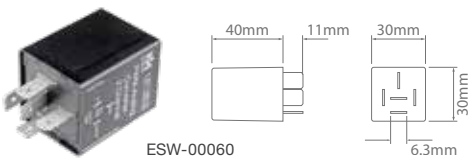
Accessories – CAN Relay Box NEW

Part No.	Description
ESW-00285	Programming / configuration harness
ESW-00286	Connector kit
HT-4300	Crimping tool – 0.35, 0.5 – 0.8, 1.0 – 2.0, 3.0mm²

Load dump protection module used to protect against voltage peaks



ESW-00054



ESW-00060

ESW-002020

ESW-002021

ESW-002022

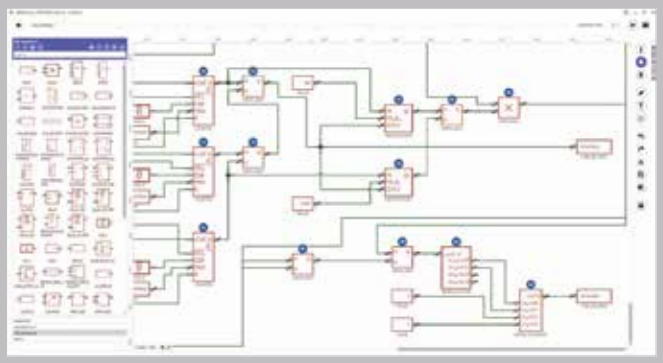
ESW-002023

Accessories – General NEW

Part No.	Description
ESW-00054	Load dump protection module. See page 15 for holder kits
ESW-00060	PWM to Analog Converter. See page 15 for holder kits
ESW-002020	Programming cable to suit USB to CAN (D-Sub) adaptors (ESW-002021 & ESW-002022)
ESW-002021	USB to CAN (D-Sub) adaptor
ESW-002022	USB to CAN (D-Sub) adaptor. Optically isolated
ESW-002023	MRS Applics & Developer Studio software licence, required for programming CAN Controllers

One Program – All Applications

All programmable products in the MRS range (pages 10–16) use a single software tool: **MRS Applics Studio.**
This software provides a consistent environment for configuring inputs, outputs, logic, and CAN messaging across all supported modules.



The platform is suitable for users with varying levels of programming experience, with support for both graphical configuration and C-based development.

Suitable to all Skill Levels

MRS Applics Studio features:

- Visual function block programming
- CAN & LIN configuration
- Input/output mapping
- Optional C code programming
- Live diagnostics

This single programming approach simplifies system design and reduces the time required to configure or modify control logic. It also enables users to complete projects in-house without the need for external software development support.

One platform for quick & simple setup

Want to know more?

Watch videos

Take a look at this quick introduction video and then feel free to explore the rest of the MRS videos.

There is also a more detailed online documentation website available for MRS Applics Studio, the QR code below will take you there.

MRS Applics Studio Online Guide

CAN Controllers

System Managers

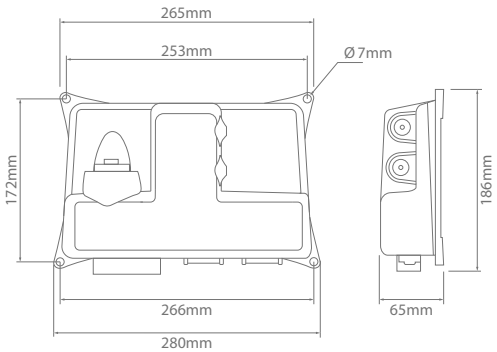
122116

610-00092-002

- SAE J1939 CAN engine message reception and DTD network controller.
- Digital circuit breakers on all positive outputs.
- Output 'open load' detection.
- Diagnostic LED indicators.
- Optional modem available upon request.
- Selectable polarity for digital inputs models.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

9V 32V | IP67 | Made in North America

Voltage :	9–32V
CAN :	SAE J1939
Construction :	Die-cast/Polycarbonate
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C



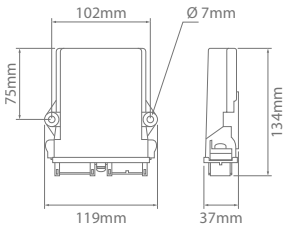
Centralised Consolidation

The Supernode II consolidates the functions of several modules – USM, Data Logger, Seatbelt, Vehicle Data Recorder (VDR), Climate Control, I/O Module & Power Distribution Module. This reduces node count and simplifies addressing making it well suited for applications where a centralised node location is required.

System Managers – Supernode II & III

Part No.	CAN Ports	Inputs Polarity Selectable	Outputs Positive	Outputs Negative	Outputs Analogue	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V	Max. Output Current Rating (A) Positive	Max. Output Current Rating (A) Negative
119890	1	24	18	6	0	500	350	13	2
610-00092-002 NEW	2	24 (2 MFI)	18	6	2	500	350	13	2

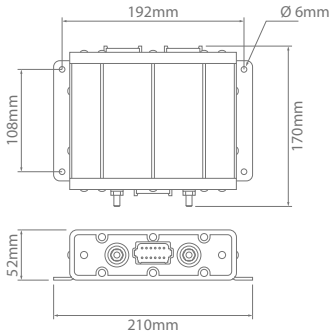
* Current draw does not include draw from outputs.



System Managers – Universal System Manager 2

Part No.	Inputs Polarity Selectable	Outputs Polarity Selectable	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V	Max. Output Current Rating (A) Polarity Selectable
122116	6	5	100	125	0.5

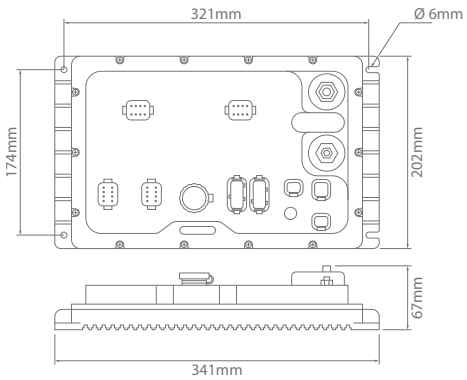
* Current draw does not include draw from outputs.

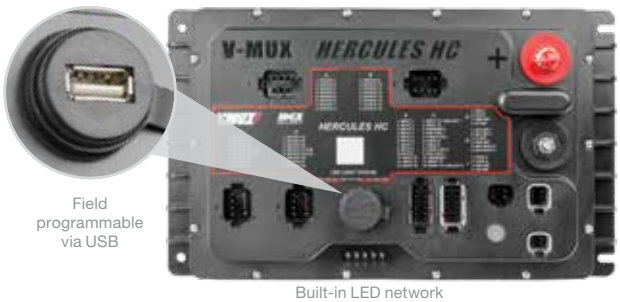


System Managers – 8x16 Node

Part No.	Inputs Digital	Outputs	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V	Max. Output Current Rating (A)
6730-0000-00	8	16	50	60	13

* Current draw does not include draw from outputs.



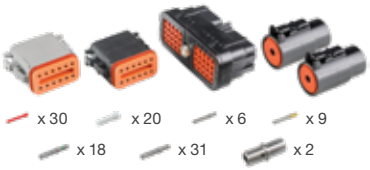


System Managers – Hercules HC

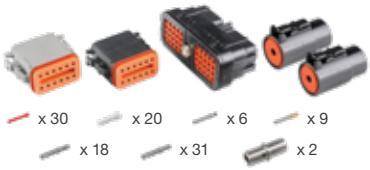
Part No.	Inputs Analogue	Inputs Digital	Outputs	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V	Max. Output Current Rating (A) Positive	Max. Output Current Rating (A) Negative
6060-0000-00	4	16	32	69	63	13	4

* Current draw does not include draw from outputs.

CAN Controllers



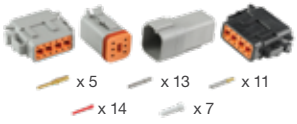
CONNKIT-SN2



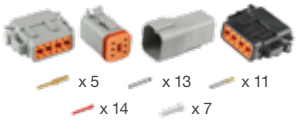
CONNKIT-SN2-PB

CONNKIT-DIAGSN2REM

CONNKIT-DIAGSN2



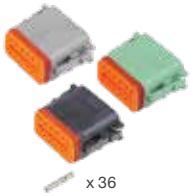
CONNKIT-USM2



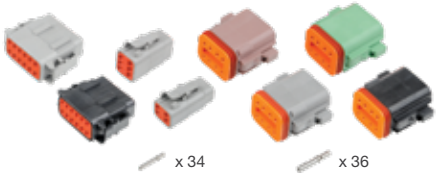
CONNKIT-USM2-PB

CONNKIT-DIAGUSM2

CONNKIT-DIAGUSM2REM



0K90-2286-00



0K90-3462-00

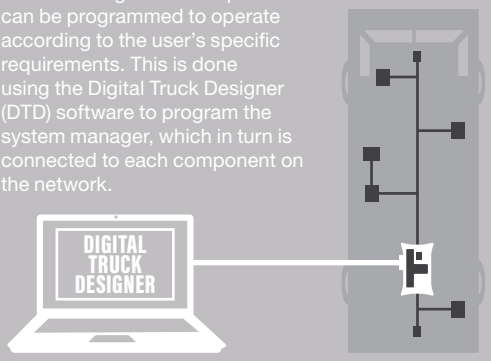
System Managers – Accessories

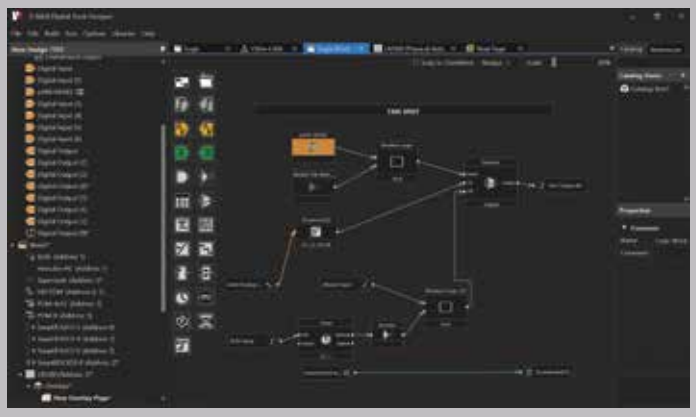
Part No.	Description	Suits
CONNKIT-SN2	Connector Kit	Supernode II & III (119890 & 610-00092-002)
CONNKIT-SN2-PB	Connector Kit – Purple Band Socket	Supernode II & III (119890 & 610-00092-002)
CONNKIT-DIAGSN2REM	Remote USB diagnostic connector	Supernode II & III (119890 & 610-00092-002)
CONNKIT-DIAGSN2	USB Programming Cable	Supernode II & III (119890 & 610-00092-002)
CONNKIT-USM2	Connector Kit	Universal System Manager 2 (122116)
CONNKIT-USM2-PB	Connector Kit – Purple Band Socket	Universal System Manager 2 (122116)
CONNKIT-DIAGUSM2	Programming Cables	Universal System Manager 2 (122116)
CONNKIT-DIAGUSM2REM	Remote USB diagnostic connector	Universal System Manager 2 (122116)
0K90-2286-00	Connector Kit – 3 Connectors	8x16 Node (6730-0000-00)
0K90-3462-00	Connector Kit	Hercules HC (6060-0000-00)

Crimping tools can be found on page 117.

Class 1 DTD Programming

Class 1 configurable components can be programmed to operate according to the user's specific requirements. This is done using the Digital Truck Designer (DTD) software to program the system manager, which in turn is connected to each component on the network.





The DTD software is an all in one program allowing the user to set up and program each component of an DTD network in a simple, user-friendly environment.

Each component on the application is added to the list of inputs, renamed for easy reference, and programmed to operate accordingly.

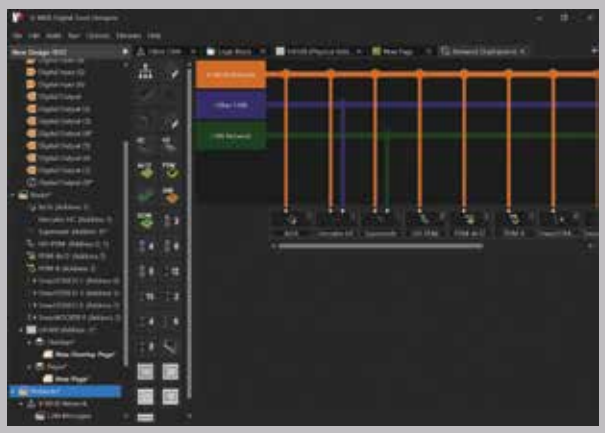
Programming can be as simple or as complex as required. All this is done through a comprehensive graphical user interface.

- Highly intuitive graphical user interface
- Nest logic to perform any interlock
- Use previously designed component nest logic simply
- Simple to highly complex logic statements – it's up to you
- Use virtual circuits to create custom program functions
- Automatically create printable system reports
- Wire vehicles the same and change their behaviour by simply changing the program
- Activate options, change flash patterns and load management settings without changing a single wire
- Rename circuits for easy reference

Diagnostics

The advanced diagnostic capability of the DTD program makes fault checking easier than ever. Connect to your vehicle locally or remotely, to initiate and simplify the diagnostic process. Troubleshoot the entire system or just a single output. With the ability to force on or off any input/output, the software can assist with much of the fault diagnosis process before even opening your toolbox.

- Download reports and data logger information
- Real-time feedback
- Local or remote connection capability
- Detailed CAN information
- Fault code reporting
- Module status information
- Easy download capability
- Force on or force off any input or output

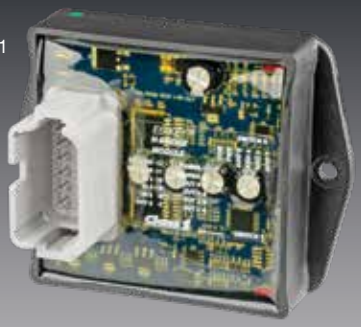


Easily see a comprehensive graphical view of the entire network

CAN Controllers

I/O Modules

610-00041



610-00030

- Introduces switched inputs into the DTD network.
- 610-00041 incorporates H-Bridge functionality.
- Up to 18 inputs and 16 outputs.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

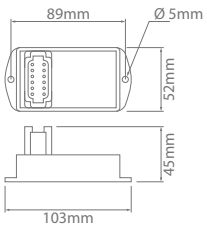
9V 32V IP67 Made in North America

Voltage :	9–32V
CAN :	SAE J1939
Construction :	Polycarbonate
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C

Accelerometer Input Signal

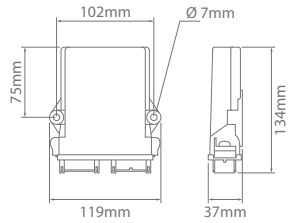
The 610-00033 can accept multiple input signal types.

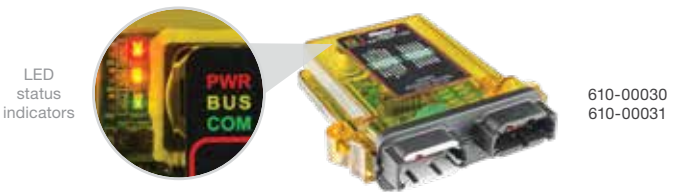
Voltage:	0 to 5V/30V
Current:	4 to 20mA
Frequency:	5V peak to peak, or system voltage
Resistance:	0 to 2800 Ohms



I/O Modules – Accelerometer

Part No.	Input Signal Source Internal	External	Digital Input	Digital Output	Polarity Input	Output	Input Signal
610-00033	2	2	1	1	Selectable	-0.25A	*See above*

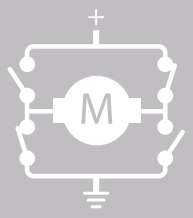


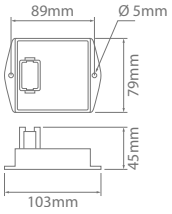


610-00030
610-00031

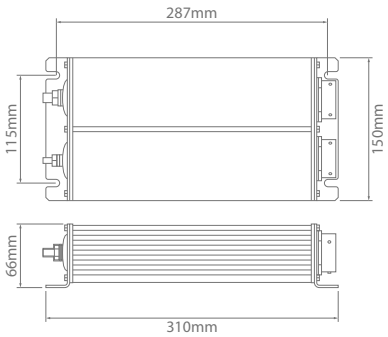
H-Bridge Functionality – 610-00041

An H-bridge is an electronic circuit that switches the polarity of a voltage applied to a load. These circuits are often used in robotics and other applications to allow DC motors to run forwards or backwards.





610-00041

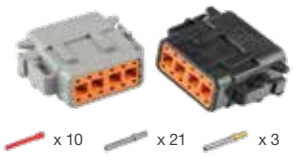


6000-0001-04

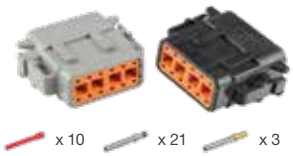
I/O Modules

Part No.	Inputs Digital	Inputs MFI	Current Draw (mA @ 13.8V)	Outputs	Max. Output Current Rating (A) Positive	Max. Output Current Rating (A) Negative	Input Polarity	Output Polarity
610-00030	18	1	62	Up to 3	0.25	0.25	Selectable	Selectable
610-00031	—	—	62	16	0.25	0.25	—	Selectable
610-00041	3	1	30	5	2 x 6.0	3 x 0.5	Selectable	Selectable
6000-0001-04	16	3	45	26	16 x 10.5 8 x 4.0	2 x 4.0	Selectable	24x Positive /2x Negative

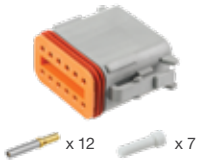
CAN Controllers



CONNKIT-IO



CONNKIT-IO-PB



CONNKIT-DUALA2D

0K90-2280-00

I/O Modules – Connector Kits & Accessories

Part No.	Description	Suits
CONNKIT-IO	Connector Kit	610-00030, 610-00031
CONNKIT-IO-PB	Connector Kit – Purple Band Socket	610-00030, 610-00031
CONNKIT-DUALA2D	Connector Kit	610-00041, 610-00033
0K90-2280-00	Connector Kit	6000-0001-04

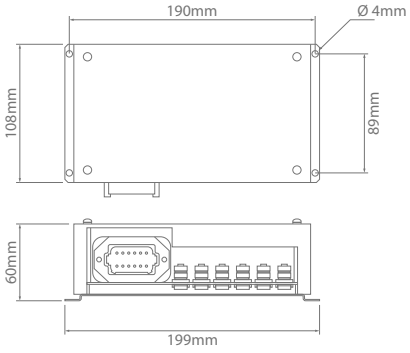
Crimping tools can be found on page 117.

- Controls a vehicle's A/C compressor clutch, heat valve and fans in an DTD network.
- High current digital outputs.
- Dedicated inputs for two analogue temperature sensors – internal and external.
- Pulsed Width Modulation (PWM) for blower fan outputs.
- Automatic and manual modes of operation.
- Integrates control with Ultraview display.
- Configurable input/output.
- Multi-voltage.
- Made in North America.

Voltage :	9–32V
CAN :	SAE J1939
Construction :	Powder-coated Steel
Operating Temperature :	-40°C to 85°C

9V 32V

Made in North America



Climate Control Module

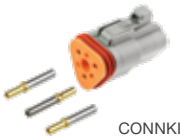
Part No.	Current Draw (mA) *		Max. Output Current Rating (A)			
	@ 13.8V	@ 27.6V	Fan Motors	AC Clutch	Heat Valve	Aux Output
610-00029	72	36	25	15	15	0.25

* Current draw does not include draw from outputs.

Functionality of this module is integrated into the Supernode II (page 18) with firmware version 9.05 or later.

CONNKIT-CCMODULE

115722



CONNKIT-TEMPSENSOR

Climate Control Module – Accessories

Part No.	Description
CONNKIT-CCMODULE	Connector Kit
115722	Temperature Sensor with mounting clip. Range -30°C – 150°C
CONNKIT-TEMPSENSOR	Connector Kit for Temperature Sensor (115722)

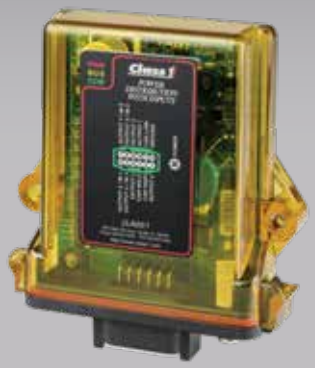
Crimping tools can be found on page 117.

CAN Controllers

Power Distribution Modules

120727

- Supplies power to system loads, and introduces digital/analogue inputs into the DTD network.
- Selectable polarity for digital inputs models.
- Up to 21 outputs from a single module.
- High current model features 30A continuous output current rating.
- HD PDM & HC PDM incorporate LED displays with 2 buttons for diagnostic, indication and configuration purposes.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.



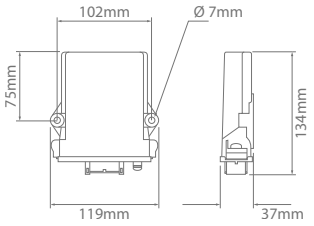
610-00034

9V 32V | IP67 | Made in North America

Voltage :	9–32V
CAN :	SAE J1939
Construction :	Polycarbonate/Aluminium
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C

610-00034

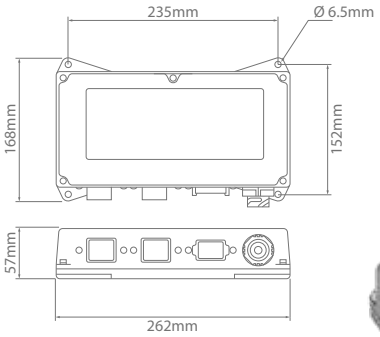
610-00035



Power Distribution Modules

Part No.	Description	Inputs	Input Type	Outputs	Max. Output (A)	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V
610-00034	PDM	0 – 4	Digital	4 – 8	7.5	65	85
610-00035	PDM	0 – 4	MFI	8 – 12	7.5	65	85

* Current draw does not include draw from outputs.



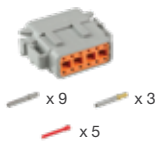
LED display with 2 buttons for diagnostic, indication and configuration purposes

Power Distribution Modules – High Density/High Current

Part No.	Description	Inputs	Input Type MFI	Input Type Digital	Outputs	Max. Output (A)	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V
120727	High Density Power Distribution Module (HD PDM)	10	1	0	21	13	73	82
610-00046	High Current Power Distribution Module (HC PDM)	8	4	4	8	30	73	82

MFI inputs – Selectable 0-30V, 0-5V, 4-20mA, Digital, Resistive, Frequency. Refer to data sheet for individual product specifications.

* Current draw does not include draw from outputs.



CONNKIT-PDM

CONNKIT-IO

121701

CONNKIT-HDPDM

CONNKIT-HCPDM

Power Distribution Modules – Accessories

Part No.	Description	Suits
CONNKIT-PDM	Connector Kit	PDM (610-00034)
CONNKIT-PDM-PB	Connector Kit – Purple Band Socket	PDM (610-00034)
CONNKIT-IO	Connector Kit	PDM (610-00035)
CONNKIT-IO-PB	Connector Kit – Purple Band Socket	PDM (610-00035)
121701	Power connector	HD PDM (120727) & HC PDM (610-00046)
CONNKIT-HDPDM	Connector Kit	HD PDM (120727)
CONNKIT-HCPDM	Connector Kit	HC PDM (610-00046)

Crimping tools can be found on page 117.

Heavy Industry

Ultraview Touch Series – UV700

Ultraview Touch Series – UV500

Twister

HD PDM

USM2

I/O Modules

Mining Service Trucks

Solid-state technology ensures there are no mechanically wearing electrical components in equipment supplied by IONNIC Technical Systems (ITS). Increased performance, added flexibility, reduced development time, and lower cost over the life of the vehicle are just some of the ITS benefits.

- Can integrate with vehicle telematics
- Fluid monitoring
- Fluid flow control
- Lighting control
- Inbuilt diagnostics
- Graphical user interface
- Multi-level password access
- Access control