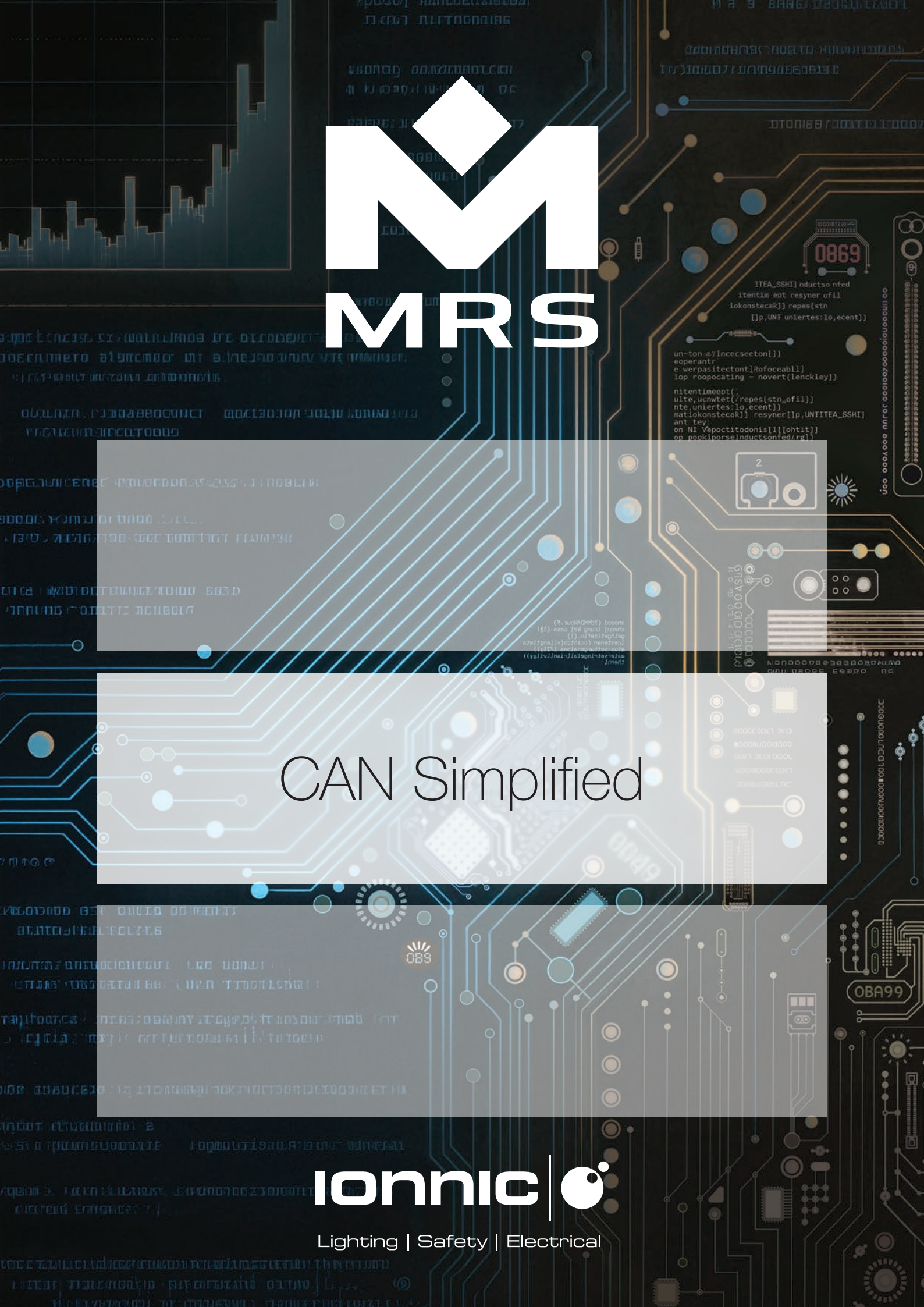
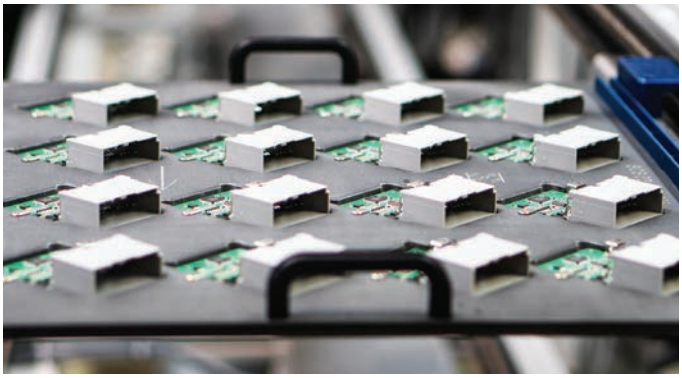

MRS
CAN Simplified
IONNIC
Lighting | Safety | Electrical



MRS

IONNIC

Lighting | Safety | Electrical

MRS Electronic and IONNIC Partnership

IONNIC is proud to announce our partnership with MRS Electronic, a premier German manufacturer known for its compact programmable control systems tailored for vehicles and machinery.

With over 25 years of expertise, MRS specialises in a diverse range of CAN-based products, including controllers, relays, HMIs, displays, and integration tools for industries such as automotive, construction, agriculture, marine, and utilities.

Customers across Australia and New Zealand will gain improved access to MRS hardware components, with the added benefit of local engineering and after-sales support, along with shorter lead times.

"Most importantly, at the heart of this collaboration is the goal of demystifying CAN technology. We aim to bring flexibility and new capabilities to your workshop without requiring a background in computer science or software development.

This is CAN Simplified."

Luke Kindt - General Manager

The Contactless CAN Adaptor and Minebar Integration Kits (MIKs) can be found on pages 20 & 21.

CAN Simplified

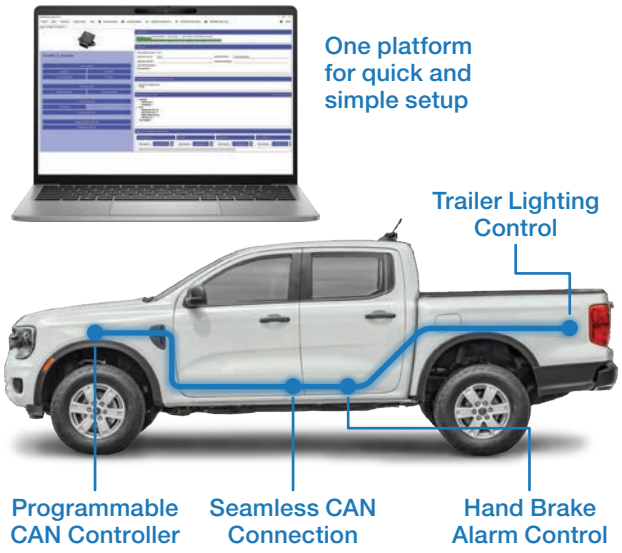
From simple vehicle interface modules to complete stand-alone systems, the MRS range from IONNIC delivers flexible CAN solutions like never before.

Entry-level modules provide an easy first step into CAN without requiring specialist programming knowledge. The Contactless CAN Adaptor, allows seamless integration with OEM networks enabling control and monitoring without physical connection to the vehicle OEM CAN system.

SIMPLE. BY DESIGN.

Whether adding CAN controlled accessories, simplifying an electrical design, or supporting fleet upfits, MRS modules provide a clear path to a professional-grade Controller Area Network.

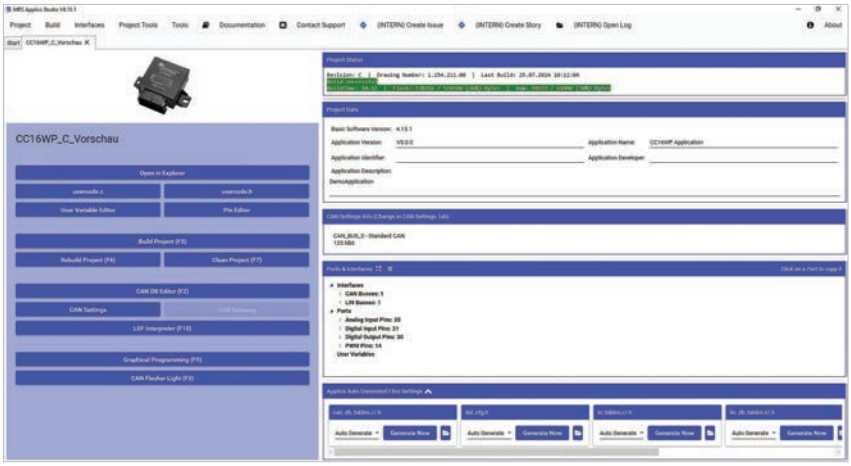
Configuration is managed through intuitive software that removes the usual barriers of working with CAN systems, making setup as simple as possible. Installers and resellers can easily adjust configurations to suit customer needs, saving time while ensuring reliability.



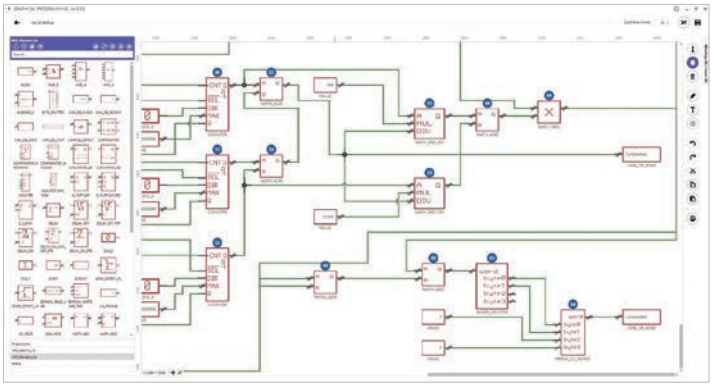
Starting small does not limit future growth. Systems can expand seamlessly with additional modules to support more complex applications. Page 6 explores this in more detail, showing how MRS can grow with your requirements. With this scalability, MRS is the perfect choice for upfitters, resellers, and custom builders seeking a future-ready solution.

- Upfitters
- Resellers
- Custom builders

One Program – All Applications



All programmable products in the MRS range 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
- Real-time simulation and testing
- CAN bus configuration
- Input/output mapping
- 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.

Want to know more?

Watch videos

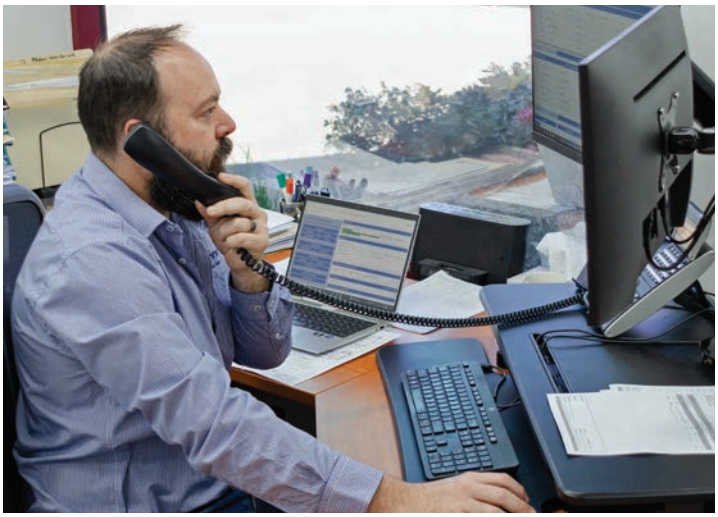
Take a look at this quick introduction video and then feel free to explore the rest of the MRS videos.

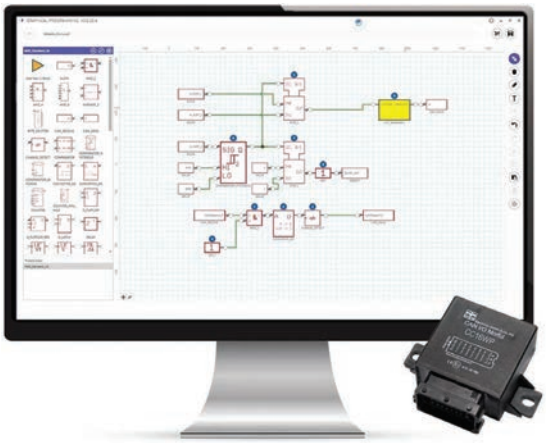
There is also a more detailed online documentation website available for MRS Applics Studio, the QR code below will take you there.

MRS Applics Studio Online Guide

Configure Yourself, or With Our Help

The MRS range is designed to be simple, with intuitive software that allows you to configure modules yourself quickly and easily. At the same time, IONNIC is here to support you if needed.





With years of experience delivering CAN solutions across multiple industries, our team can provide advice, troubleshooting, or even full development services.

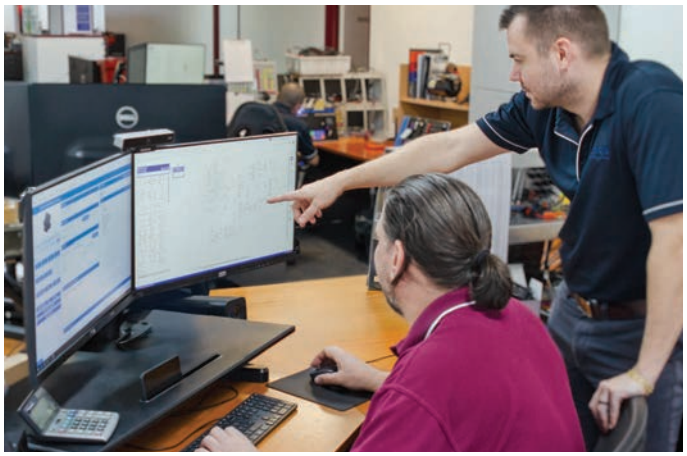
Whether you prefer a hands-on approach or expert guidance, IONNIC gives you the flexibility to work the way that suits you best.

Product Training & Support

Our product training and support is designed to give customers the knowledge and confidence to get projects up and running quickly.

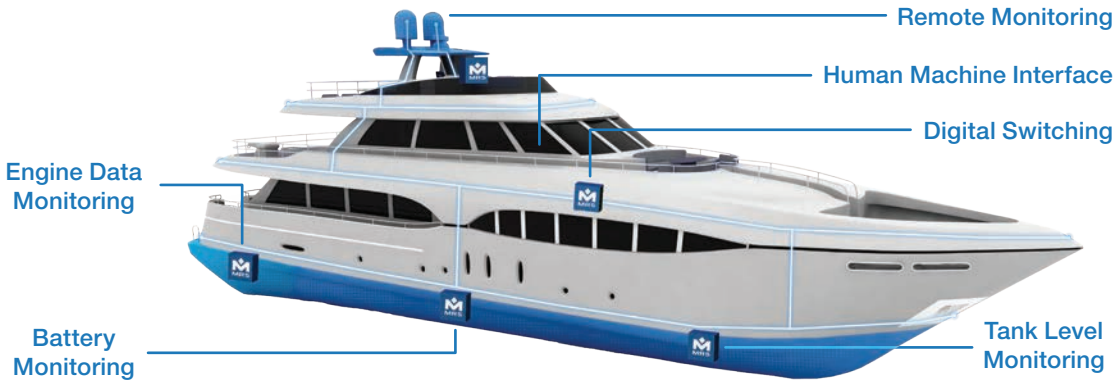
Training covers the fundamentals of using function blocks within the graphical software, as well as understanding the hardware requirements at the physical layer.

Once this has been established, we can focus on helping users apply the hardware and software effectively to their project.



HARDWARE — SOFTWARE — APPLICATION

Modular Components for Custom Builds



MRS products are designed as standalone modules, each handling a specific task. They can be used on their own, paired with other MRS devices, or integrated into wider systems as needed. This flexibility makes them ideal for small to medium builds, as well as modular use in larger projects.

Common use cases include:

- Input/output control for vehicle lighting, sensors, or motors
- Display of real-time data from CAN-based systems
- Replacement of mechanical relays with programmable solid-state switching
- Integration with OEM vehicle CAN via contactless adaptors

Example components include:

MicroPlex: Compact programmable controllers with up to 7 outputs (page 11).

MRS Displays: Programmable touchscreen displays with CAN integration (page 18).

Contactless CAN Adaptor: Reads CAN signals without physical wiring connection (page 20).

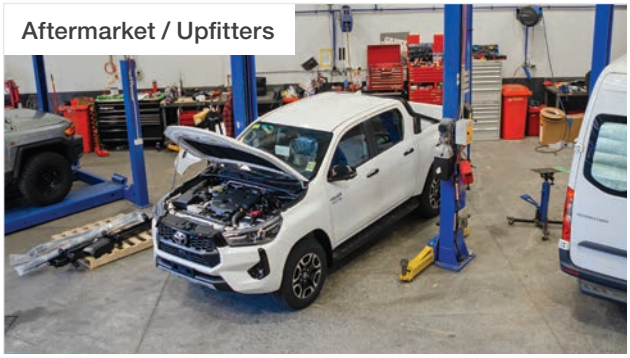
Motor Controller: Controls DC motors with ramping and direction functions (page 13).

Markets

MRS products suit a broad range of markets, providing dependable control solutions for both simple and complex applications. Their flexibility makes them ideal for automotive, construction, agriculture, marine, and custom vehicle builds.

With modular components and intuitive software, systems can be tailored to suit specific requirements, ensuring reliable performance for individual vehicles or larger-scale fleet installations.

Aftermarket / Upfitters



Recreational

Construction

Commercial / Transport

Civil / Municipal

Mining

Emergency Services

Agriculture

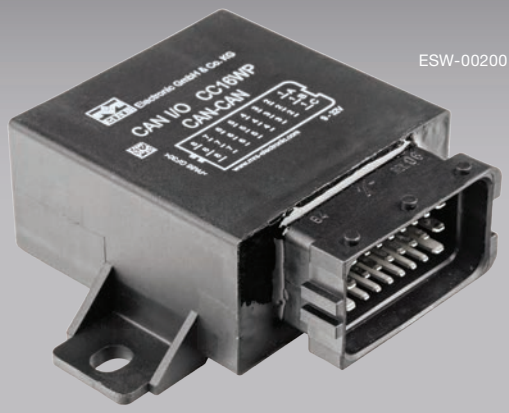
Marine

IONNIC

CAN Controllers

ESW-11689

ESW-00047



ESW-00200

Made in Europe

- Compact versatility – use as either as an I/O module in a CAN network or as a stand-alone, 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 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.

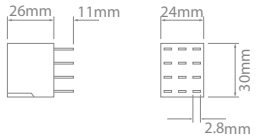
Micro – Relay

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

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.

CAN Controllers



IP67

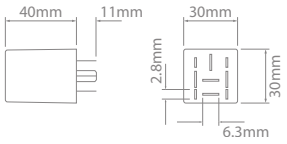
CAN Controllers – Microplex

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

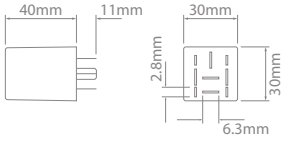
CAN Controllers – Micro – Gateway

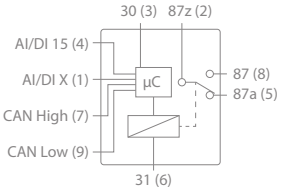
Part No.	Voltage	Description	Inputs (MFI)	Outputs			Ports			Current Draw (mA)		Max. Current Rating Per Output (A)
				Total	PWM	Digital	Total	CAN	Secondary	12V	24V	
ESW-00056	9–32	Gateway – CAN, RS485	1	2	2	2	2	1	RS485	8	8	2.3
ESW-00057	9–32	Gateway – CAN, CAN/FD	2	2	2	2	2	1	CAN/FD	70	70	0.5
ESW-00058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

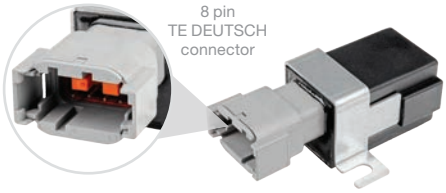
Part No.	Voltage	Description	Inputs (MFI)	Outputs			CAN Port	Current Draw (mA) *		Max. Current Per Output (A)	
				Total	PWM	Digital		12V	24V	NO	NC
ESW-00055	9–32	PLC CAN Relay	1	1	—	1	CAN/FD	32	19	10	5

* Current Draw does not include draw from outputs.

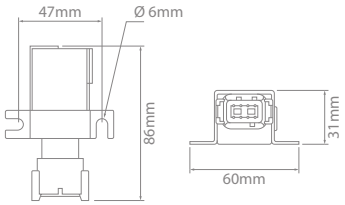
MFI – Multi Function Input.

PWM – Pulse Width Modulation.

CAN Controllers



IP6K8

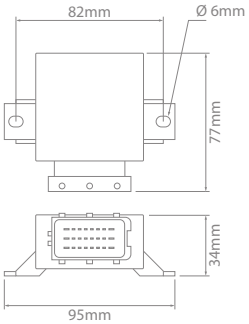


CAN Controllers – PROP CAN

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.

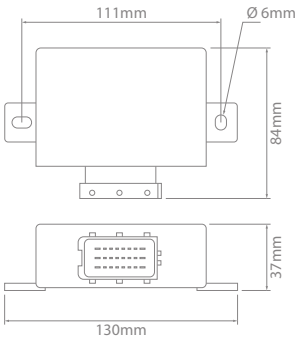
IP6K8



CAN Controllers – CC16WP

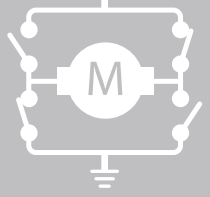
Part No.	Voltage	Inputs (MFI)	Outputs	CAN Ports	Current Draw (mA) *		Max. Current Rating Per Output (A)
					12V	24V	
ESW-00200	9–32	7	8	1 x CAN, 1 x CAN/FD	45	26	2.5

* Current Draw does not include draw from outputs.
MFI – Multi Function Input.



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.



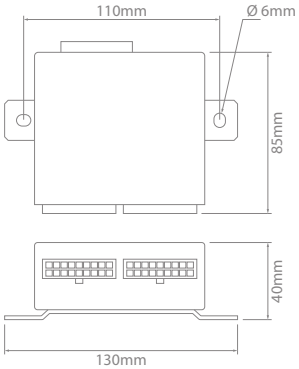
CAN Controllers – Motor Controller

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

* Current Draw does not include draw from outputs.

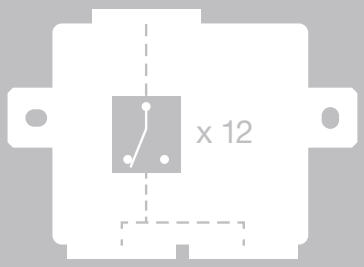
MFI – Multi Function Input.

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

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

* Current Draw does not include draw from outputs.

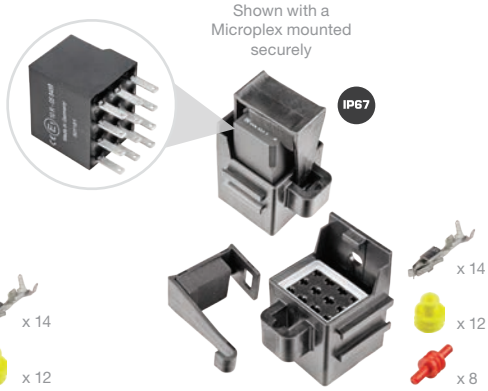
[Δ] Analogue input range: 0–11.4V.

PFR - Potential-Free Relay

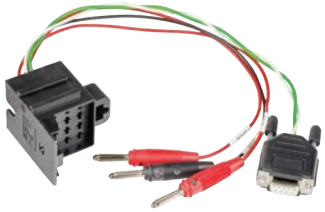
CAN Controllers

FH301

FH601-KIT

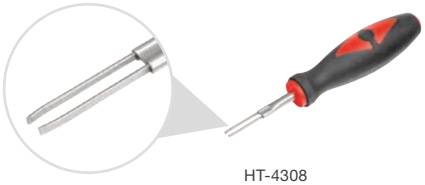


FH602-KIT



ESW-00345

HT-4300



HT-4308

Accessories – Microplex

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

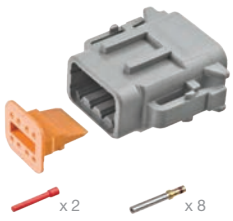
FH605-KIT

ESW-00355

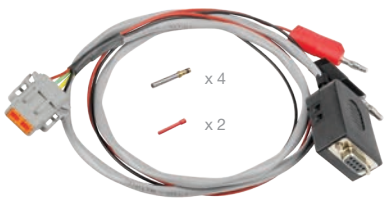
HT-4300

Accessories – Micro – Gateway & Relay

Part No.	Description	Kit Contents:
FH604-KIT	Mounting 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	Mounting base kit	1 x Mounting Base 4 x Contacts – 2.8mm Copper 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

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

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

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

ESW-00060

ESW-002020

ESW-002021

ESW-002022

ESW-002023

Accessories – General

Part No.	Description
ESW-00060	PWM to Analog Converter
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

MRS Displays

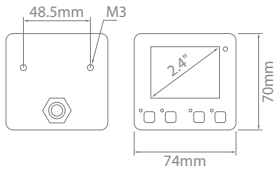
ESW-00199

- CAN based information displays incorporating programmable switching.
- Application developed using C/C++.
- Capacitive touch screen for the 4.3" & 7" model.
- 4.3" model features inbuilt 92dB buzzer.
- Compact and rugged design.
- Automatic dimming via light sensor.
- Portrait or landscape orientation.
- Environmentally sealed.
- Mount inside or outside of vehicle.
- Ideal for buses, municipal vehicles and caravans.
- Made in Europe.

ESW-00201

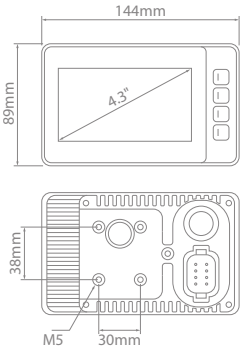
9V 32V | CE | ECE R10 | Made in Europe

Voltage :	9–32V
Processor :	32-bit
CAN :	SAE J1939, CAN 2.0, CAN FD
Construction :	PC/ABS, Autotex XEF200
Approvals :	CE, ECE R10



MRS Displays – 2.4"

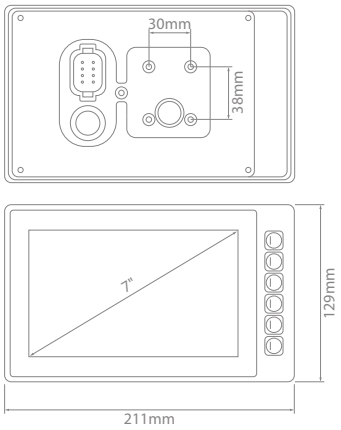
Part No.	Resolution	CAN	Ingress Protection	Operating Temperature	Current Draw (mA) @ 12V
ESW-00201	320 x 240	1	IP6K8	-20°C to 60°C	86



MRS Displays – 4.3"

Part No.	Resolution	CAN Ports	Ingress Protection	Operating Temperature	Current Draw (mA) @ 12V
ESW-00199	480 x 272	2	IP66 / IP67	-30°C to 75°C	165

MRS Displays



TE DEUTSCH
compatible connector

IP66
IP67

MRS Displays – 7"

Part No.	Resolution	CAN Ports	Ingress Protection	Operating Temperature	Current Draw (mA) @ 12V
ESW-00198	800 x 480	2	IP66 / IP67	-30°C to 75°C	390

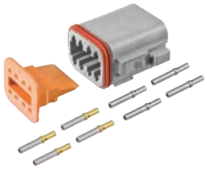
ESW-002023

ESW-002024, ESW-002025, ESW-002026

ESW-00282

ESW-00399

M12F5-ACODE



CONNKIT-MRSD

ESW-002021

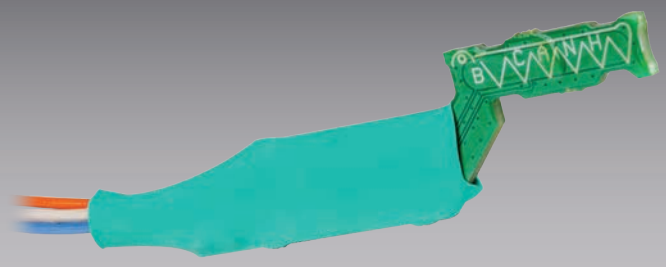
ESW-002022

MRS Displays – Accessories

Part No.	Description	Suits
ESW-002023	MRS Applics & Developer Studio software licence, required for programming	2.4"
ESW-002024	OPUS Projektor software licence, required for programming	4.3" & 7"
ESW-002025	OPUS Projektor software add-on (optional) – DBC Import	4.3" & 7"
ESW-002026	OPUS Projektor software add-on (optional) – Symbol ISO700	4.3" & 7"
ESW-00282	Programming cable set	2.4"
ESW-00399	Programming cable set	4.3" & 7"
M12F5-ACODE	M12 field service network connector, female	2.4"
CONNKIT-MRSD	Connector kit. Includes 4 x nickel-plated, and 4 x gold-plated contacts	4.3" & 7"
ESW-002021	USB to CAN (D-Sub) adaptor	All
ESW-002022	USB to CAN (D-Sub) adaptor. Optically isolated	All

Contactless CAN Adaptor

Contactless CAN Adaptor



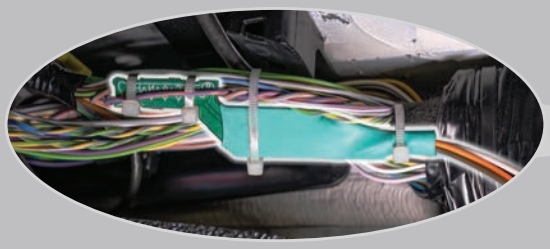
- Non-intrusive data retrieval through wire insulation without compromising its integrity.
- Compact open-frame design enables convenient connection to the CANBUS, even in the most inaccessible areas of a vehicle.
- Ensuring dependable protection for a vehicle's electronic circuits against potential vulnerabilities through the CAN interface.
- Safe data integration from one CANBUS to another CANBUS network.
- Reverse polarity protected.
- 2-year warranty.

9V 36V 2Yrs

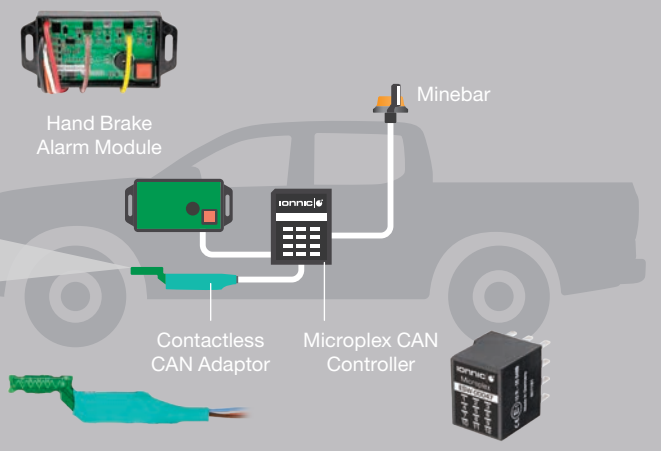
Voltage :	9–36V
CAN :	SAE J1939, CAN Open, DeviceNet, NMEA 2000
Current Draw :	12.5mA @ 24V
Connector :	450mm fly lead
Operating Temperature :	-40°C to 85°C

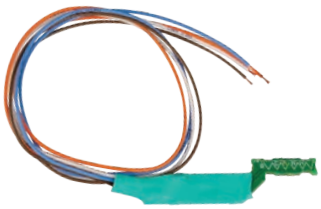
Seamless CAN Data Retrieval

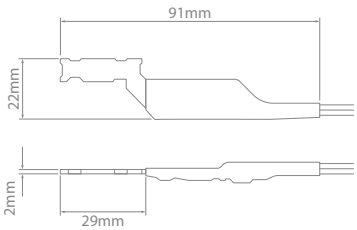
The Contactless CAN Adaptor reads signals off the existing CAN data cable by seamlessly attaching to it – no cutting or splicing into OEM wiring required.



The Adaptor then mirrors the data packets transmitted on the CAN bus, allowing them to be utilised for additional functions such as Minebar control.







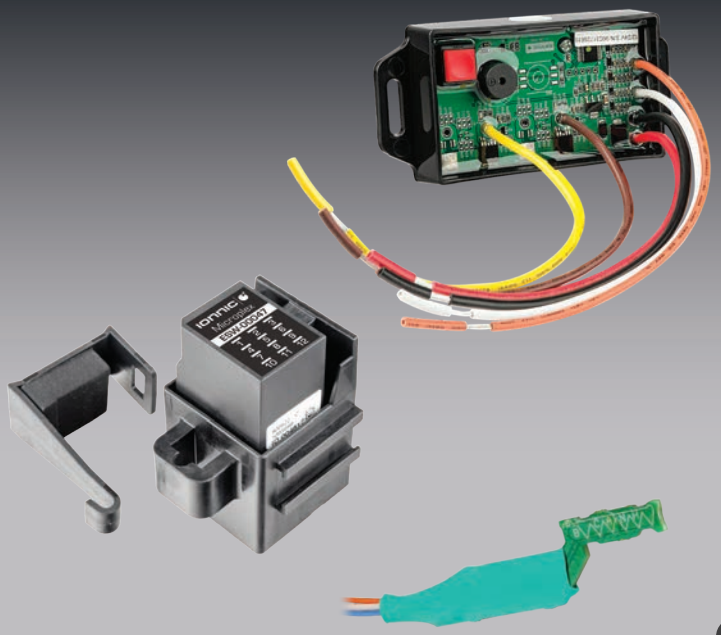
Contactless CAN Adaptor

Part No.

ESW-00050

Minebar Integration Kits

- Significantly reduce the time required for each Minebar and Hand Brake Alarm installation.
- Connects to the CAN, providing functionality for a Hand Brake Alarm and Minebar (stop-tail/indicator/reverse lights, and reversing alarm).
- Kits utilise the non-intrusive Contactless CAN Adaptor to access OEM signals.
- Vehicle warranty concerns alleviated as no physical connection is made to existing CAN wiring.
- Ultra-compact Microplex CAN controller with holder rated to IP67.
- Microplex is pre-programmed to be compatible with the Ford Ranger, Everest, F-150, Transit & Volkswagen Amarok system.
- Suitable for other vehicle makes/models, for details contact your local reseller.



Voltage :	12–24V
Current Draw :	35mA @ 12V
Operating Temperature :	-40°C to 70°C

12V 24V

MIK Vehicle Suitability

The Microplex is pre-programmed to be compatible with the:

Ford Ranger

Ford Everest

Ford F-150

Ford Transit

Volkswagen Amarok

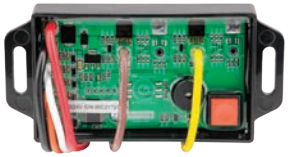
Suitable for other makes/models, contact your local reseller for details.

Contactless CAN Adaptor

Microplex CAN Controller with holder kit

MIK-FR01

Hand Brake Alarm Module



Contactless CAN Adaptor

Microplex CAN Controller with holder kit

MIK-FR02

Minebar Integration Kits

Part No.	Description	Kit Contents: Contactless CAN Adaptor	Microplex CAN Controller	Hand Brake Alarm Module
MIK-FR01	Base kit	•	•	–
MIK-FR02	Base kit with Hand Brake Alarm Module	•	•	•

ELECTRICAL

ICS Switch Panel

Microplex CAN Controller

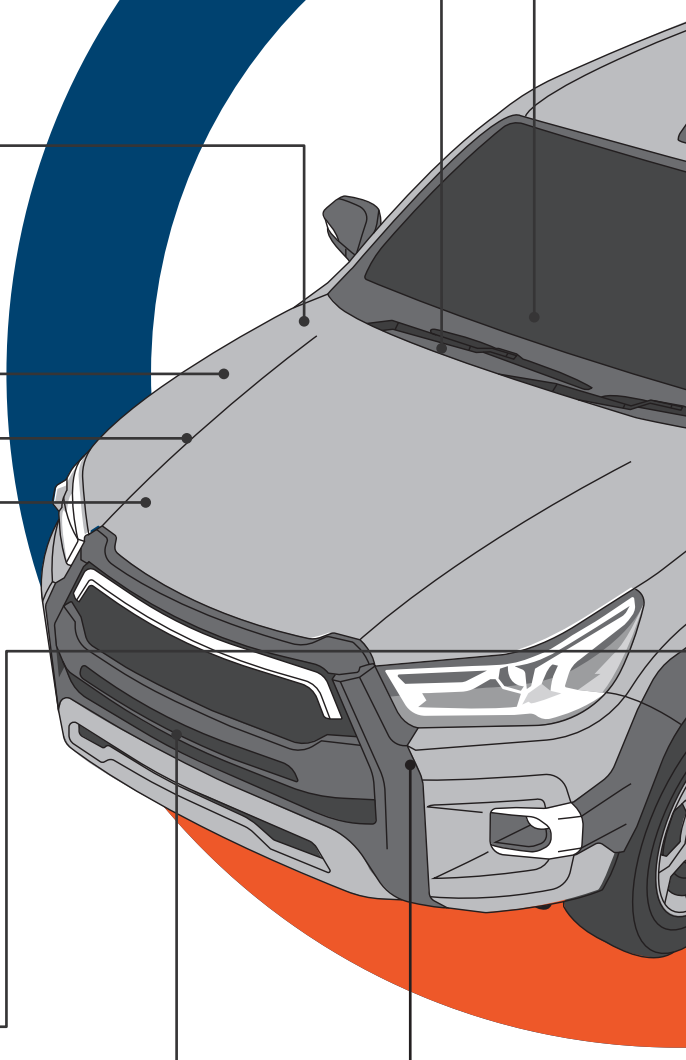
Power Distribution Modules

Battery Lockout Kits

Headlights On & Handbrake Alarm

Contactless CAN Adaptor

Night Ranger Driving Lights



TE DEUTSCH Connectors

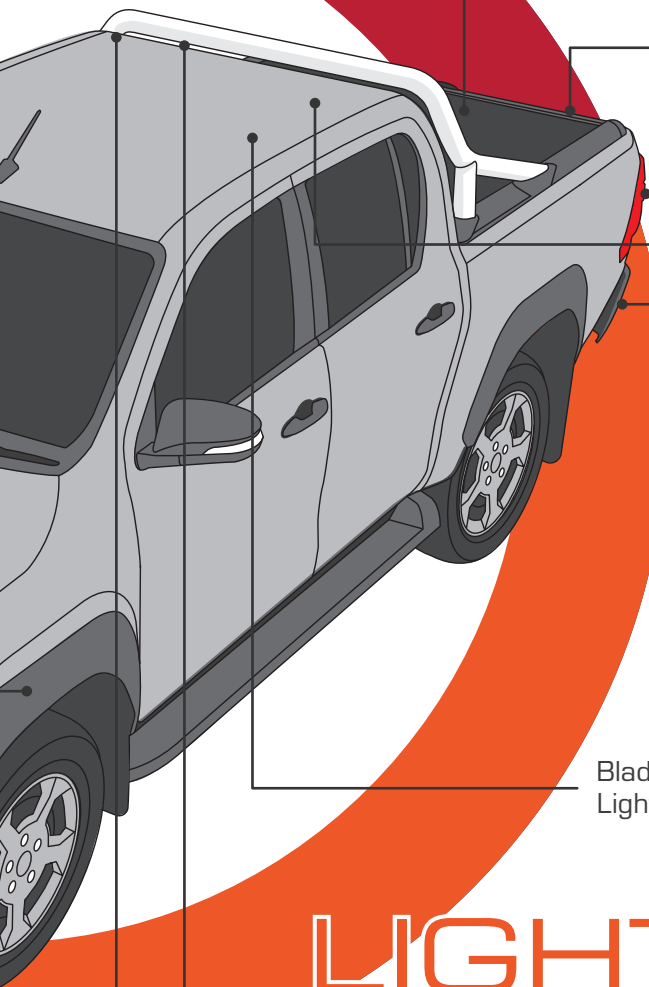
SAFETY

GME Radio Systems

Mining Safety Accessories

Brigade CCTV Systems

bbs-tek Reversing Alarms



LED Beacons

LED Warning Lights

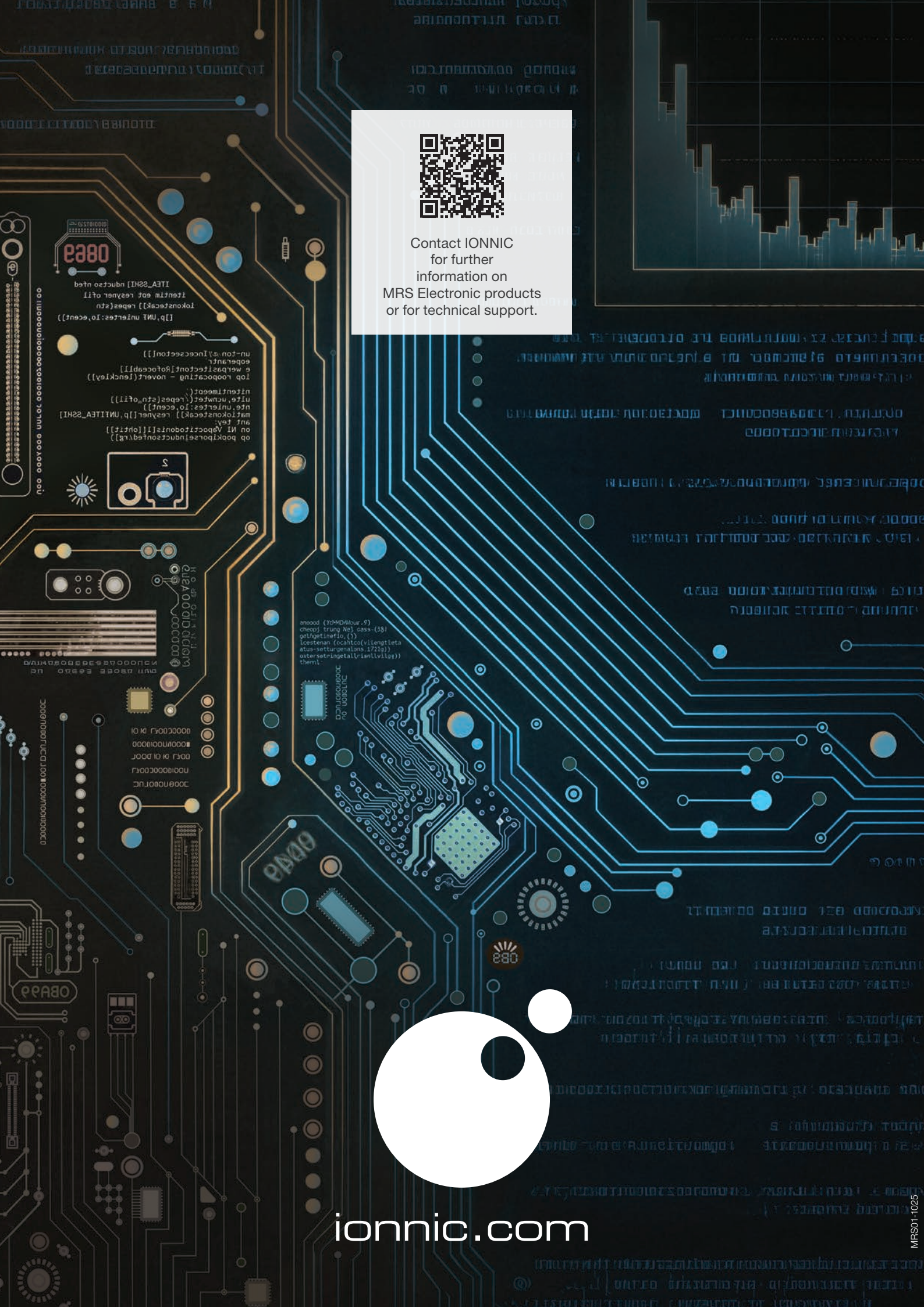
Blade Lightbars

LIGHTING

IONNIC Minebars

Worklamps

For more information on these product lines visit ionnic.com or contact your nearest reseller.



Contact IONNIC
for further
information on
MRS Electronic products
or for technical support.

ionnic.com

MRS01-1025