



CAN Relay Box 16





Technical Data

Housing	Aluminum housing
Connector	PCB connection header S2C-SMT 3.50/32/90LF
Housing Dimensions	109.4 x 105.8 x 34.7 mm
Weight	332 g
Temperature Range (ambient)	-40 °C to +85 °C
Environmental Protection	IP53
Operating Voltage	9 - 32 V
Quiescent Current	Depending on software implementation (< 1A when active)
Overcurrent Protection	Relay outputs need additional external protection (fuse)

Processor

Manufacturer	Freescale
Processor Type	HCS08DZ60
Clock Frequency	25MHz
Flash Memory	60 KB
RAM	4 KB
EEPROM	2 KB

Interfaces

CAN Bus

ISO 11898-2/3 compliant	Low-speed/high-speed
CAN 2.0A compliant	11-bit - standard address identifier
CAN 2.0B compliant	29-bit - extended address identifier
Baud rate	20-kbps to 1.000-kbps; 125-kbps default

Serial Interface

1 x RS232 via Mini USB

Regulatory Approvals

EMC	ECE 10 Rev. 5
E1 Approval Number	10 R - 057899



Inputs and Outputs

Analog Inputs or Digital Inputs	13 (configurable as analog or digital inputs)
Mini USB	1
Other	16 mechanical relay outputs; potential free (8 twin relays)

Technical Data Inputs and Outputs

Digital Inputs

Switch-On Threshold	9.7 V
Switch-Off Threshold	6.0 V
Input Resistance	22.7 kΩ

Analog Inputs

Input Voltage	0 V to 11.3 V
Resolution	12-bit; 2.5 μs
Input Resistance	22.7 kΩ
Pull-Up Resistor	-
Pull-Down Resistor	10 kΩ
Input Frequency	0 to 60 Hz

Relay Outputs

Rated Current	10 A continuous each output; 15 A up to 30 seconds
Maximum Switching Current	10 A normally closed contact; 20 A normally open contact
Overcurrent Protection	External fuses are required for each relay output to protect the device against short circuits and high power transients

Device Programming

Interface CAN bus or USB	The USB port can be used as serial interface for user programming; flashing is only possible via CAN bus interface.
Software	MRS Developers Studio with built-in function library, similar to programming with FUP. Custom software blocks can be integrated into C-code. Programming memory is sufficient for about 300 basic electronic components.



Pin Assignment

Pin	Signal	Designation
X101.01	REL12_COM	Relay 12 common connection
X101.02	REL12_NO	Relay 12 normally open contact
X101.03	REL11_NO	Relay 11 normally open contact
X101.04	REL10_NC	Relay 10 normally closed contact
X101.05	REL10_NO	Relay 10 normally open contact
X101.06	REL09_NO	Relay 09 normally open contact
X101.07	REL08_NC	Relay 08 normally closed contact
X101.08	REL08_NO	Relay 08 normally open contact
X101.09	REL07_NO	Relay 07 normally open contact
X101.10	REL06_NC	Relay 06 normally closed contact
X101.11	REL06_NO	Relay 06 normally open contact
X101.12	REL05_NO	Relay 05 normally open contact
X101.13	REL04_NC	Relay 04 normally closed contact
X101.14	REL04_NO	Relay 04 normally open contact
X101.15	REL03_NO	Relay 03 normally open contact
X101.16	REL02_NC	Relay 02 normally closed contact
X101.17	REL02_NO	Relay 02 normally open contact
X101.18	REL01_NO	Relay 01 normally open contact
X101.19	REL12_NC	Relay 12 normally closed contact
X101.20	REL11_NC	Relay 11 normally closed contact
X101.21	REL11_COM	Relay 11 common connection
X101.22	REL10_COM	Relay 10 common connection
X101.23	REL09_NC	Relay 09 normally closed contact
X101.24	REL09_COM	Relay 09 common connection
X101.25	REL08_COM	Relay 08 common connection
X101.26	REL07_NC	Relay 07 normally closed contact
X101.27	REL07_COM	Relay 07 common connection
X101.28	REL06_COM	Relay 06 common connection
X101.29	REL05_NC	Relay 05 normally closed contact
X101.30	REL05_COM	Relay 05 common connection
X101.31	REL04_COM	Relay 04 common connection
X101.32	REL03_NC	Relay 03 normally closed contact
X101.33	REL03_COM	Relay 03 common connection
X101.34	REL02_COM	Relay 02 common connection
X101.35	REL01_NC	Relay 01 normally closed contact
X101.36	REL01_COM	Relay 01 common connection



Pin Assignment

Pin	Signal	Designation
X102.01	REL15_COM	Relay 15 common connection
X102.02	REL16_NO	Relay 16 normally open contact
X102.03	REL15_NO	Relay 15 normally open contact
X102.04	-	CAN_L
X102.05	AI_13 DI_AI_13	Analog input 0-11.4 V or Digital input
X102.06	AI_10 DI_AI_10	Analog input 0-11.4 V or Digital input
X102.07	AI_08 DI_AI_08	Analog input 0-11.4 V or Digital input
X102.08	AI_06 DI_AI_06	Analog input 0-11.4 V or Digital input
X102.09	AI_05 DI_AI_05	Analog input 0-11.4 V or Digital input
X102.10	AI_03 DI_AI_03	Analog input 0-11.4 V or Digital input
X102.11	AI_01 DI_AI_01	Analog input 0-11.4 V or Digital input
X102.12	-	Ground
X102.13	DIN01	Timer Capture input
X102.14	REL13_NC	Relay 13 normally closed contact
X102.15	REL14_NO	Relay 14 normally open contact
X102.16	REL14_COM	Relay 14 common connection
X102.17	REL16_COM	Relay 16 common connection
X102.18	REL16_NC	Relay 16 normally closed contact
X102.19	REL15_NC	Relay 15 normally closed contact
X102.20	-	CAN_H
X102.21	AI_12 DI_AI_12	Analog input 0-11.4 V or Digital input
X102.22	AI_11 DI_AI_11	Analog input 0-11.4 V or Digital input
X102.23	AI_09 DI_AI_09	Analog input 0-11.4 V or Digital input
X102.24	AI_07 DI_AI_07	Analog input 0-11.4 V or Digital input
X102.25	AI_04 DI_AI_04	Analog input 0-11.4 V or Digital input

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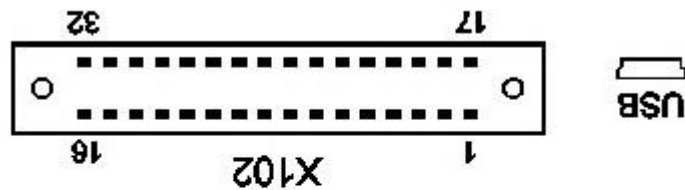


X102.26	AI_02 DI_AI_02	Analog input 0-11.4 V or Digital input
X102.27	KL30	Operating voltage 9-30 V
X102.28	KL15 DI_KL15	Ignition input or Digital input
X102.29	DIN02	Timer capture input

Pin Assignment

Pin	Signal	Designation
X102.30	REL13_NO	Relay 13 normally open contact
X102.31	REL14_NC	Relay 14 normally closed contact
X102.32	REL13_COM	Relay 13 common connection

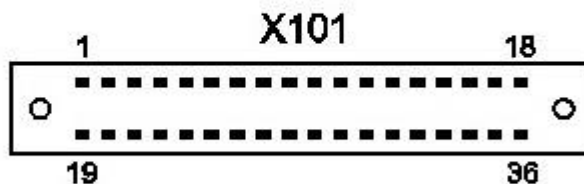
Connector Pin Designation (Top View)



1.060.300.00

CAN-Relais-Box 16

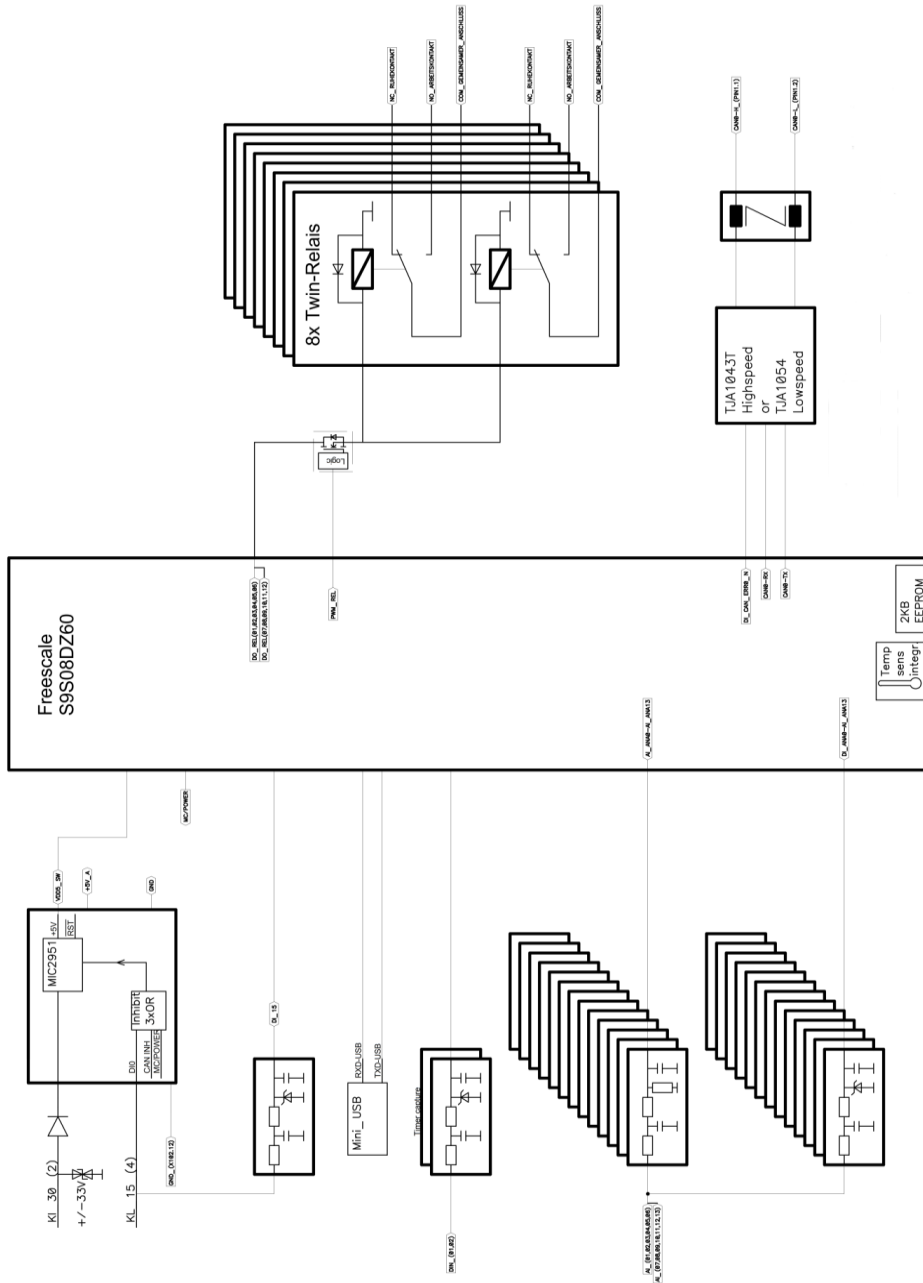
9-30V



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Function Block Diagram



Datasheet
CAN Relay Box 16

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Order Information

Description		Order Number
MRS CAN Relay Box	CAN/USB	1.060.300.00

Accessories

Description		Order Number
Programming Tool MRS Developers Studio		1.100.100.09
PCAN-USB Interface		105358
Mating Connector 32pol		113781
Mating Connector 31pol		113783