4-in-1 Motor Controller CAN

Technical Data

Construction	Plastic housing with side flaps
Connector	2x Tyco JPT 90° 6 pole (3x2)
	1x Tyco JPT 90° 9 pole (3x3)
Housing Dimensions	95 x 65 x 35 mm
Weight	137 g
Ambient Temperature	- 40°C to 85°C (at 85°C not full load)
Protection Class	IP53
Operating Voltage U_B	9 - 30 V DC
Protection against reverse polarity and electrical transients. The connectors are rated for 10 A, so the module can deliver up to 20 A. Relay outputs have to be protected separately against short circuit (NO 20 A/ NC 10 A).	
Quiescent Current	250 µA
Protection	20A

Processor

Manufacturer	Freescale
Processor Type	S9S08DZ60
Clock Frequency	40 MHz
Flash	60 K
Ram	4 K
EEPROM	2 K

Interfaces

CAN-bus	
According to ISO 11898-5	CAN High Speed
According to CAN 2.0A	11-bit standard address identifier
According to CAN 2.0B	29-bit extended address identifier
Baud Rate	10-kBit/s – 1000-kBit/s, Standard 125-kBit/s

LIN	As component variant

Technical Examination

EMV	In progress
E1 Approval Number	10 R - 057815

Possible Inputs and Outputs

Analog Inputs (1 PT1000 input incl.)	3
Outputs for Motor Control (4 Full motor bridge, PWM-capability, two motors could be powered at the same time)	4
Digital Outputs	2
5 V Reference Voltage	1

Technical Data Inputs and Outputs

Characteristics of Digital Outputs			
Load Current	5 A/Kanal		
Reverse polarity protection, overload protection			

Characteristics of Digital Inputs	**standard**	**30V**	**6V**
Input Voltage	0 V… 11.3 V	0 V… 33.68 V	0 V... 6 V
Resolution	12-bit		
Input Resistance	22.6 kΩ	66.6 kΩ	20.7 kΩ
Pull-Down Resistance	10k Ω	10kΩ	100kΩ
Input Frequency	fg = 24 Hz	fg= 50 Hz	fg= 60 Hz
Linearity Deviation	up to 2.2 kHz 2% The percentage deviation increases from 2.2 kHz	up to 2.2 kHz 2%	up to 2.2 kHz 2%
Characteristics PT1000 Input	**PT 1000 Input**		
Input Voltage	0 … 5 V		
Resolution	12-bit		
Pull-Down Resistance	1k Ω 1%		
Characteristics PWM-Outputs			
PWM-Frequency	Max. 1 kHz		
Duty Cycle	0…100%		
Resolution	1 per mile		
Load Current	5 A (max. load current is frequency-dependent)		

Programming

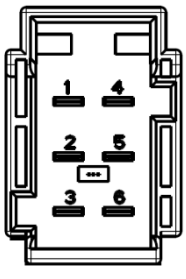
Interface	CAN-bus
Software	MRS Developers Studio with built-in function library, similar programmable like FUP. Customized program components can be integrated into “C-code”. Program memory is sufficient for about 300 simple components.

Connection Assignment

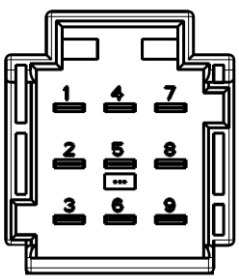
Pin	Signal Program	Pin Description	
X101.1	DO_REL_LM_U	Motor 1 positive direction	M
X101.2	DO_REL_LM_D	Motor 1 negative direction	
X101.3	DO_REL_LM_L	Motor 2 positive direction	M
X101.4	DO_REL_LM_R	Motor 2 negative direction	
X101.5	DO_HSD_LH	Digital output LH	
X101.6	-	Mass plug X101	
X102.1	DO_REL_RM_U	Motor 3 positive direction	M
X102.2	DO_REL_RM_D	Motor 3 negative direction	
X102.3	DO_REL_RM_L	Motor 4 positive direction	M
X102.4	DO_REL_RM_R	Motor 4 negative direction	
X102.5	DO_HSD_RH	Digital output RH	
X102.6	-	Mass plug X102	
X103.1	-	CAN-L	
X103.2	-	CAN-H	
X103.3		Operating voltage 9-30 V	
X103.4	AI_01	Analog input 0-6 V	
X103.5	AI_KL15	Ignition / Analog input 0-30 V	
X103.6	AI_PT1000	Analog Input 0-5 V	
X103.7	AI_LIN	Analog Input 0-30 V	
X103.8	AI_VREF	5V Ref, to enable: DO_EN_VREF	
X103.9	-	Mass	

Connection Assignment – Bottom View

Stecker X1011 und X102



Stecker X103



Order Information

Designation	Execution	Order Number
4-in-1 Motor Controller CAN		1.122.300.00

Accessories

Designation	Order Number
Programming Tool MRS Developers Studio	1.100.100.09
Cable Set 4-in-1 Motor Controller	500349
Connector Package for 4-in-1 Motor Controller	300187
PCAN-USB Interface	105358