

ICCS CAN CONTROLLER 64P V2

Controllers



The **ICCS CAN Controller 64P V2** can be used as a standalone module or as part of the CAN network. It can perform logical functions or be used just as a I/O device. The module can drive loads up to 2 amps per output and has more than 30 inputs of different types. The controller is the perfect complement to central electrical units and power boards from Würth Elektronik ICS. It can easily be connected to the PCB and thus enables the control of the entire system, e.g. relay switching and monitoring of the fuse status via CAN bus. The 16-bit processor (Freescale / NXP HCS12XEQ) with integrated co-processor has sufficient computing power to handle complex tasks. The two CAN interfaces and an optional LIN master interface allow data exchange between independent bus systems. In addition, the controller enables gateway / filter functions and the conversion of data from LIN battery management systems or rain / light sensors to CAN buses.

Applications

- Fuse monitoring and relay control
- Transmission of sensor values to the CAN bus
- CAN to CAN gateway functions
- LIN to CAN gateway functions
- Power supply of devices with low power consumption
- Interface between switches and CAN bus

Technical data

General information	
Housing	Transparent with black potting
Connector	4 x Molex Mini Fit 16 Ways
Dimensions	76 x 116 x 15 mm
Weight	~150 g
Operating temperature	-40 °C to 85 °C (no full load at 85 °C)
Storage temperature	-40 °C to 85 °C
Ingress protection	IP54
Operating voltage	9 V to 30 V DC
Pre-fusing	10 A / block (HSD outputs)
Current consumption	max 50 mA
Processor type	Freescale / NXP HCS12XEQ
Clock frequency	100 MHz
Flash memory	384 kB
RAM	24 kB
EEPROM	1 kB available for graphical programming
E1 certification	ECE10 Rev.05 : 058257

CAN Bus	
acc. ISO 11898-2	High speed
acc. ISO 11898-3	Low speed (optional)
acc. CAN 2.0A & B	11 and 29 bit address identifier
Baud rate	20 kBit/s to 1000 kBit/s (125 kBit/s default value)

LIN Bus (optional)	
LIN 2.1 master	Pull-up to Vsupply, 1 kΩ & diode
Baud rate	4800 to 115200 bps
Vsupply	Recommended max 12 V (1 kΩ-12 V LIN)

Inputs / outputs overview		
4	Analogue inputs	0 – 10 V DC / 0–20 mA
3	Analogue inputs	0 – 10 V DC
3	Analogue inputs	0 – 30 V DC
4	Analogue inputs	0 – 5 V DC
18	Digital inputs	Switch-on / switch-off level: see inputs / outputs details
4	Digital / Frequency inputs	Switch-on / switch-off level: see inputs / outputs details
8	Digital outputs or PWM outputs	High side outputs max 2 A PWM outputs max 1 A
8	Digital outputs	High side outputs max 2 A

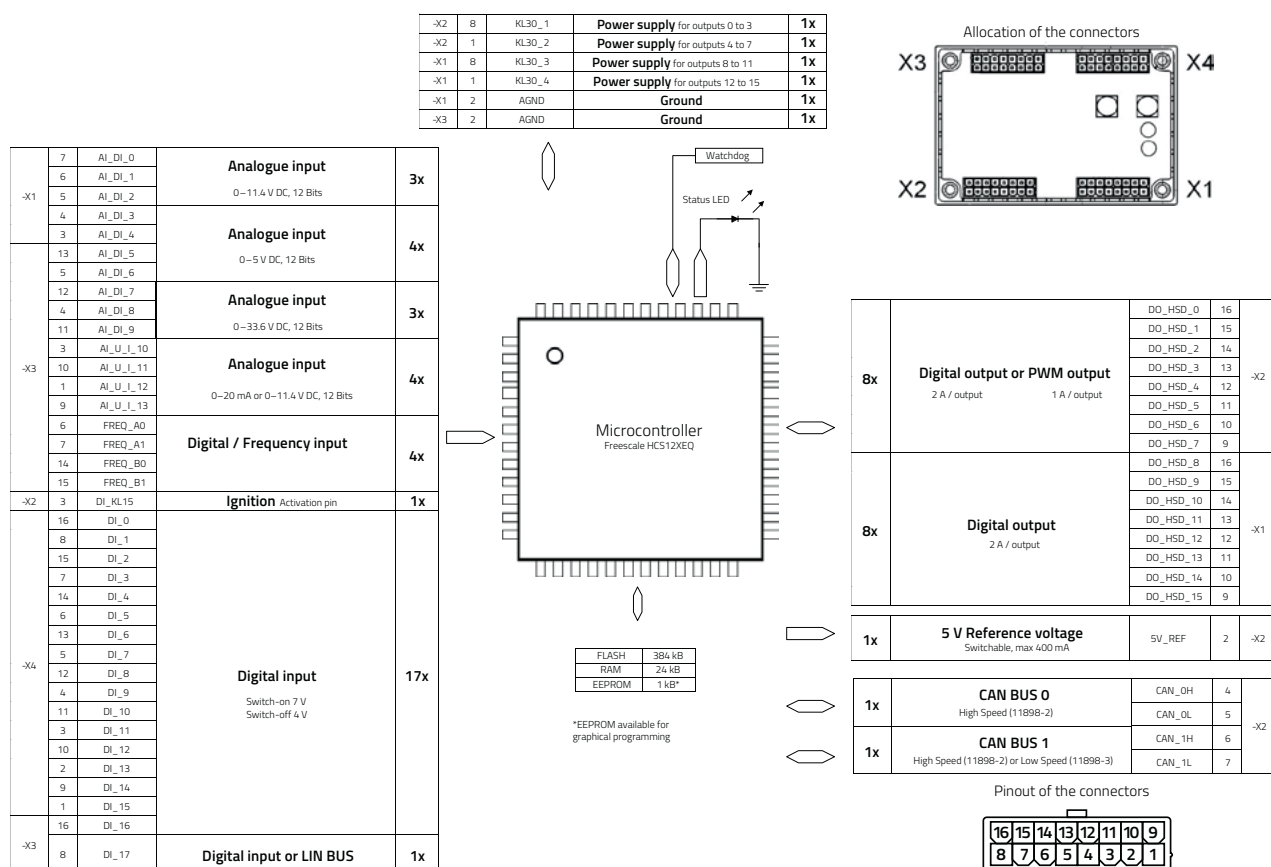
Inputs / outputs details	
Analogue inputs	3 x 0 – 10 V DC and 4 x 0 – 10 V DC / 0 – 20 mA
Voltage / current	0–11.4 V DC / 0–23 mA
Resolution	12 bits
Input resistance	22.6 kΩ
Pull-down resistance	Switchable 0.5 kΩ in 0–20 mA mode (4x)
Analogue inputs	4 x 0–5 V DC
Input voltage	0–5 V DC
Resolution	12 bits
Input resistance	High-Z through op. amp.
Analogue inputs	3 x 0–30 V DC
Input voltage	0–33.6 V DC
Resolution	12 bits
Input resistance	66.6 kΩ

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Inputs / outputs details	
Digital inputs	18
Input voltage	0 V DC to Vsupply
Switch-on level	7 V DC
Switch-off level	4 V DC
Input resistance	22.6 kΩ
Frequency inputs	4
Input resistance	100 kΩ
Input frequency	5 KHz
Digital outputs	16 x High side
Load current	max 2 A Diagnostic current sense, freewheel diode
PWM outputs	max 8 of digital outputs
PWM frequency	max 1 kHz
Duty cycle	0 to 100 %
Resolution	0.10 %
Load current	max 1 A
5 V supply	Switchable from SW
Max current	400 mA

Hardware map

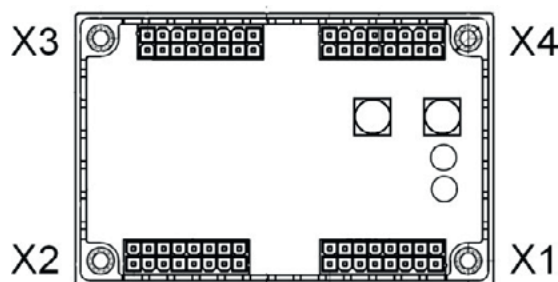


Pin assignment

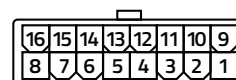
X3 Connector		
Pin	Description	Function
1	ANA_UI_12	Analogue input 0–10 V or 0–20 mA
2	AGND	Ground
3	ANA_UI_10	Analogue input 0–10 V or 0–20 mA
4	ANA8	Analogue input 0–30 V
5	ANA6	Analogue input 0–5 V
6	DIGIN_RPM_A0	Digital / Frequency input
7	DIGIN_RPM_A1	Digital / Frequency input
8	DIGIN_DI17	Digital input (X03259) or LIN BUS
9	ANA_UI_13	Analogue input 0–10 V or 0–20 mA
10	ANA_UI_11	Analogue input 0–10 V or 0–20 mA
11	ANA9	Analogue input 0–30 V
12	ANA7	Analogue input 0–30 V
13	ANA5	Analogue input 0–5 V
14	DIGIN_RPM_B0	Digital / Frequency input
15	DIGIN_RPM_B1	Digital / Frequency input
16	DIGIN_DI16	Digital input

X4 Connector		
Pin	Description	Function
1	DIGIN_DI15	Digital input
2	DIGIN_DI13	Digital input
3	DIGIN_DI11	Digital input
4	DIGIN_DI9	Digital input
5	DIGIN_DI7	Digital input
6	DIGIN_DI5	Digital input
7	DIGIN_DI3	Digital input
8	DIGIN_DI1	Digital input
9	DIGIN_DI14	Digital input
10	DIGIN_DI12	Digital input
11	DIGIN_DI10	Digital input
12	DIGIN_DI8	Digital input
13	DIGIN_DI6	Digital input
14	DIGIN_DI4	Digital input
15	DIGIN_DI2	Digital input
16	DIGIN_DI0	Digital input

Allocation of the connectors



Pinout of the connectors



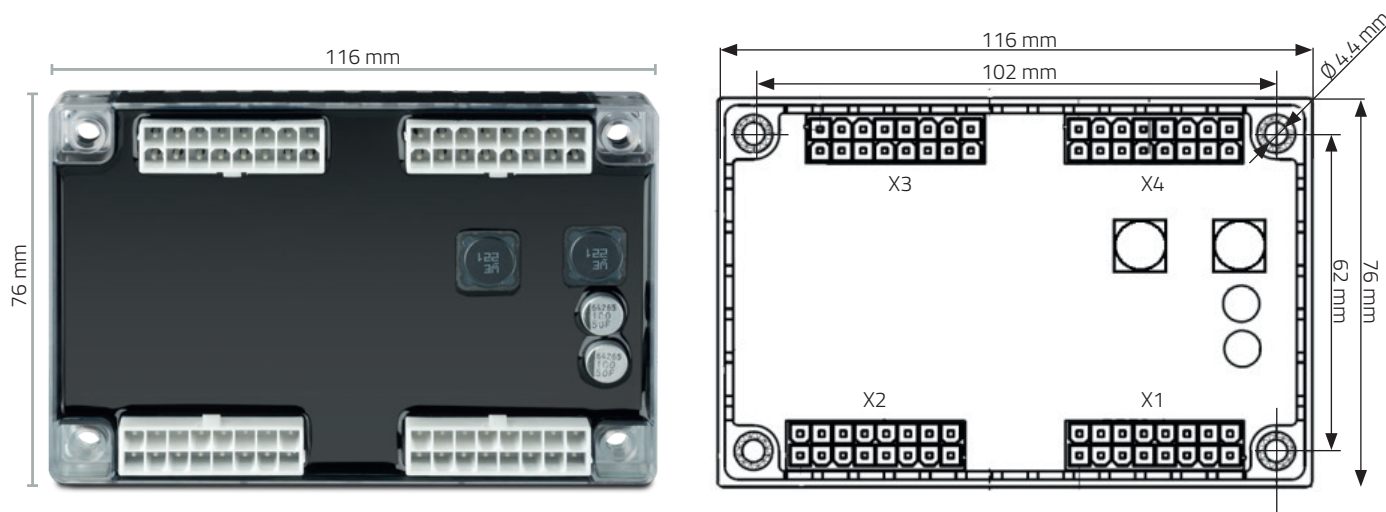
X2 Connector		
Pin	Description	Function
1	KL_30_2	Power supply for outputs 4–7
2	5V_REF	+5 V / 400 mA voltage reference
3	KL15	Activation pin
4	CAN_OH	CAN Bus 0 High
5	CAN_OL	CAN Bus 0 Low
6	CAN_1H	CAN Bus 1 High
7	CAN_1L	CAN Bus 1 Low
8	KL_30_1	Power supply for outputs 0–3
9	DIGOUT_HSD7	Digital output or PWM output
10	DIGOUT_HSD6	Digital output or PWM output
11	DIGOUT_HSD5	Digital output or PWM output
12	DIGOUT_HSD4	Digital output or PWM output
13	DIGOUT_HSD3	Digital output or PWM output
14	DIGOUT_HSD2	Digital output or PWM output
15	DIGOUT_HSD1	Digital output or PWM output
16	DIGOUT_HSD0	Digital output or PWM output

X1 Connector		
Pin	Description	Function
1	KL_30_4	Power supply for outputs 12–15
2	AGND	Ground
3	ANA4	Analogue input 0–5 V
4	ANA3	Analogue input 0–5 V
5	ANA2	Analogue input 0–10 V
6	ANA1	Analogue input 0–10 V
7	ANA0	Analogue input 0–10 V
8	KL_30_3	Power supply for outputs 8–11
9	DIGOUT_HSD15	Digital output max 2 A
10	DIGOUT_HSD14	Digital output max 2 A
11	DIGOUT_HSD13	Digital output max 2 A
12	DIGOUT_HSD12	Digital output max 2 A
13	DIGOUT_HSD11	Digital output max 2 A
14	DIGOUT_HSD10	Digital output max 2 A
15	DIGOUT_HSD9	Digital output max 2 A
16	DIGOUT_HSD8	Digital output max 2 A

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Dimensions



Order information

Available References	Part number WE ICS
ICCS 64P V2 XEQ 2 CAN HS	ICS-102924
ICCS 64P V2 XEQ 2 CAN HS 1 LIN master	ICS-103075
ICCS 64P V2 XEQ 1 CAN HS 1 CAN LS 1 LIN master	ICS-102486

Mating connector	Part number WE eiSos
Housing: Female Dual Row Plug WR-MPC4	649 016 113 322
Crimp contact: WR-MPC4, AWG 16 (1.31 mm ²)	649 005 137 22
Crimp contact: WR-MPC4, AWG 24 - 18 (0.2 to 0.82 mm ²)	649 006 137 22
Crimp contact: WR-MPC4, AWG 28 - 22 (0.08 to 0.33 mm ²)	649 007 137 22

For 100 pieces packages, please add „DEC“ at the end of the reference.

This item is a standard product, please consider the relevant datasheet notes. The user is responsible for the product's functionality in its purposed system environment. Technical content may be modified and changed by Würth Elektronik ICS GmbH & Co. KG without any notice.

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