



KEB



ETHERCAT FIELDBUS I/O

Analog or digital – the reception and emission of signals on the periphery of a plant requires decentralisation of the connection technology and a suitable medium for signal transmission to the central intelligence.

The C6 I/O System is based on the economically optimum Ethernet-based hardware and, thanks to the EtherCAT® protocol standard, brings the

proven properties of real-time communication to every single element of the input/output level. Just 25 mm wide, the plug-in system has a high packing density of up to 32 digital inputs and outputs.

- **C6 I/O**
- **C6 SAFETY I/O**

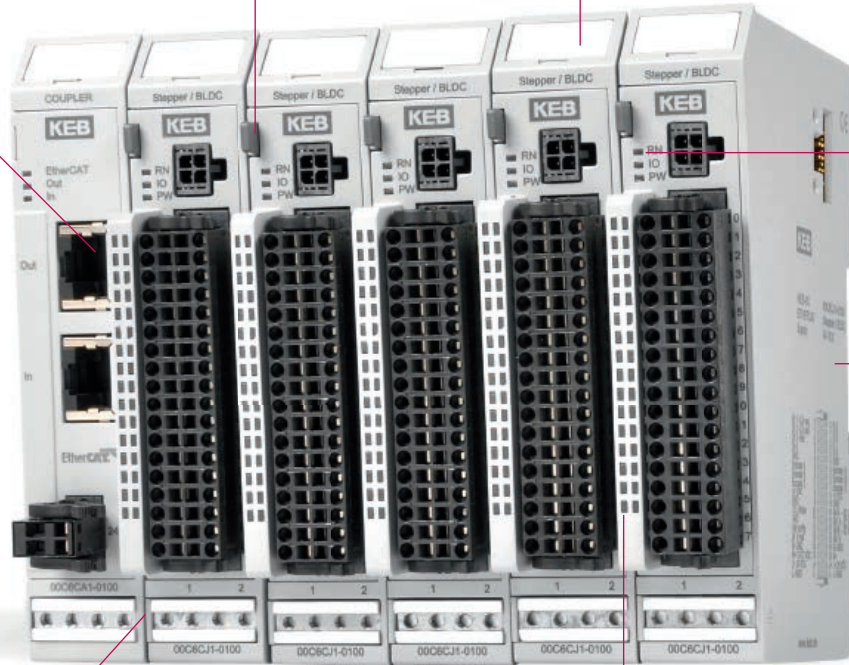
C6 REMOTE I/O

RELEASE LEVER

LABELLING CLIP

ETHERCAT BUS COUPLER

STATUS LEDS



TOP-HAT RAIL
FIXING AND
FUNCTION EARTH

SHIELDED CONNECTION
TO HOUSING CARRIER

SIGNAL STATUS
LEDS





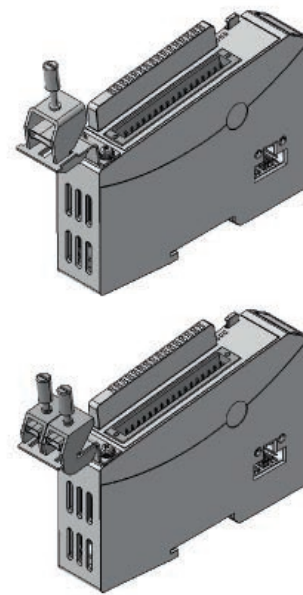
HIGHLIGHTS

- Complete EtherCAT® I/O system in real time
- Compact construction (32DI on 25 mm)
- Great range of modules
- Plug-in terminals and modules

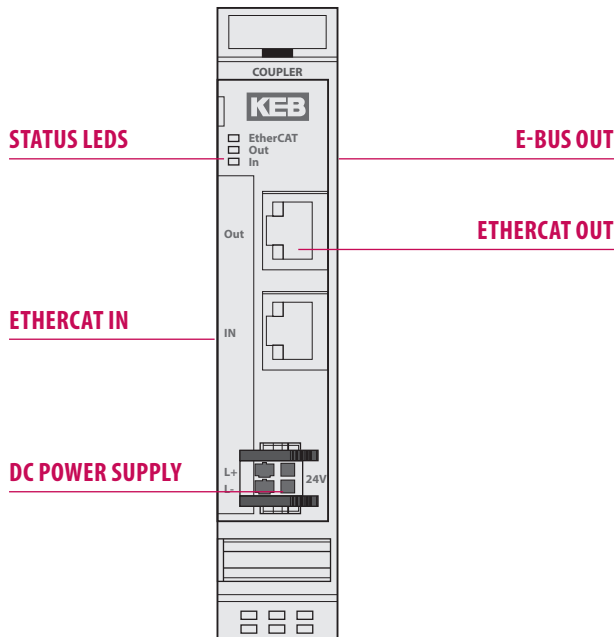
C6 I/O

Fieldbus	EtherCAT® 100 Mbits/s
W x H x D	25 x 120 x 90 mm
Installation	35 mm DIN top-hat rail
Controller	ET 1100
E-Bus connection	10-in system plug in side wall
End module	not necessary
Power supply	24 V DC -20 % +25 %
Potential separation	Modules to each other and to bus
Operating temperature	0 ... +55 °C
Storage temperature	-25 ... +70 °C
Relative humidity	5 ... 95 %, without condensation
Protection class	IP20
Resistance to interference	Zone B to EN 61131-2

SHIELDED CONNECTION TERMINAL

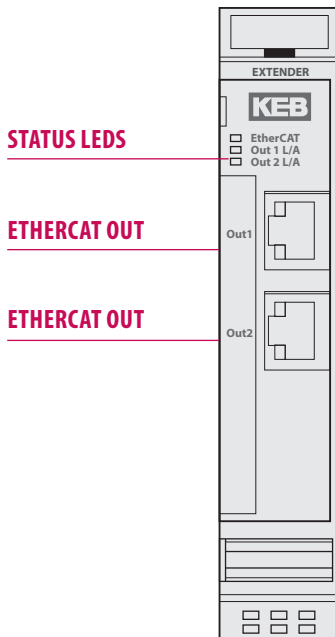


C6 REMOTE I/O ETHERCAT BUSMODULES

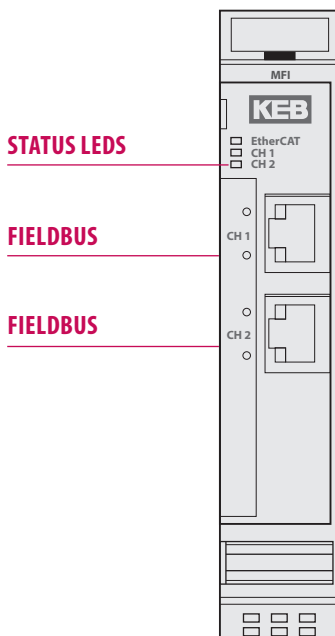


BUS MODULE	COUPLER
Fieldbus	EtherCAT® 100 Mbits/s
Power supply	24 V DC -20 % +25 %
Potential separation	Modules to each other and to bus
Operating temperature	0 ... +55 °C
Storage temperature	-25 ... +70 °C
Relative humidity	5 ... 95 %, without condensation
E-Bus supply	max. 3 A (approx. 20 modules)



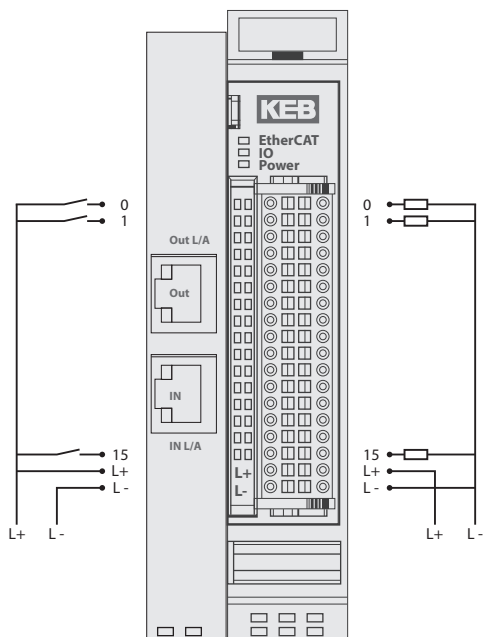


BUS MODULE	EXTENDER
Fieldbus	2x EtherCAT® 100 Mbits/s
Power supply	Via E-Bus
Potential separation	Modules to each other against bus
Operating temperature	0 ... +55 °C
Storage temperature	-25 ... +70 °C
Relative humidity	5 ... 95 %, without condensation
E-Bus load	160 mA for OUT1 210 mA for OUT1 + OUT2



BUS MODULE	MULTI FIELDBUS INTERFACE
Fieldbus	Profinet Slave Ethernet IP Slave EtherCAT® Slave Powerlink Slave
Power supply	Via E-Bus
Potential separation	Modules to each other against bus
Operating temperature	0 ... +55 °C
Storage temperature	-25 ... +70 °C
Relative humidity	5 ... 95 %, without condensation
E-Bus load	240 mA

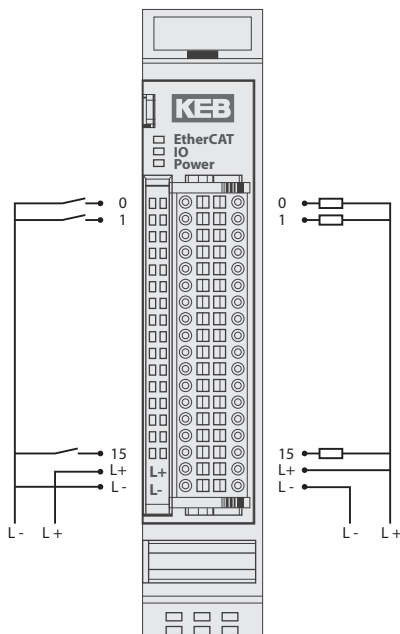
C6 REMOTE I/O ETHERCAT BUSMODULES +I/O



BUS MODUL

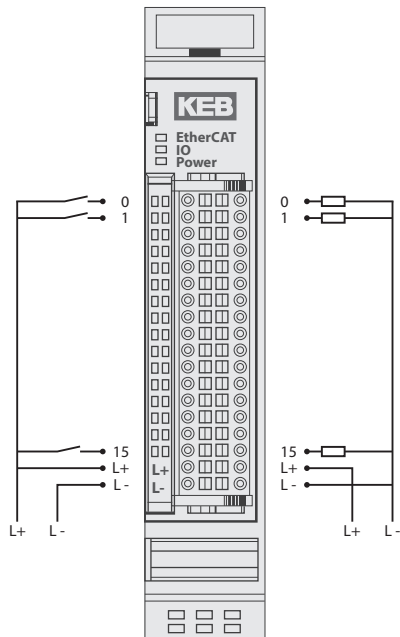
COUPLER + DI16 / DO16

Fieldbus	EtherCAT® 100 Mbits/s
Power supply	24 V DC -20 % +25 %
Potential separation	Modules to each other and to bus
Operating temperature	0 ... +55 °C
Storage temperature	-25 ... +70 °C
Relative humidity	5 ... 95 %, without condensation
E-Bus supply	max. 3 A (approx. 20 modules)
Digital inputs	16
Input delay	3 ms
Signal level (EN 61131-3, Type 1)	Off -3...5 V On 15...30 V
Digital outputs	16
Max. current	0.5 A per output
Total current	max. 8 A
E-Bus load	135 mA



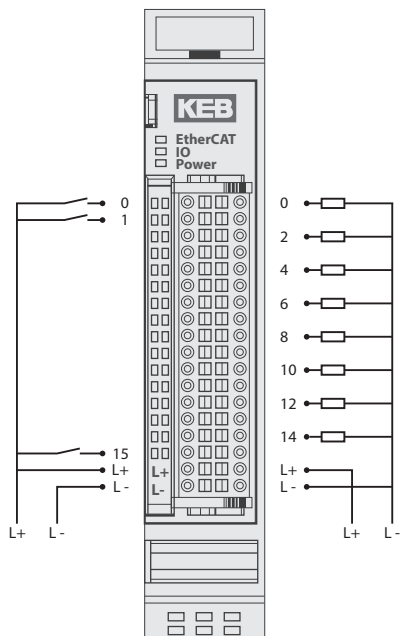
DI16 / DO16 LS

Digital inputs	16
Input delay	1 ms
Signal level (EN 61131-3, Type 1)	Off 15...30 V On -3...5 V
Digital outputs	16
Max. current	0.5 A per output
Total current	max. 8 A
E-Bus load	135 mA



DI16 / DO16

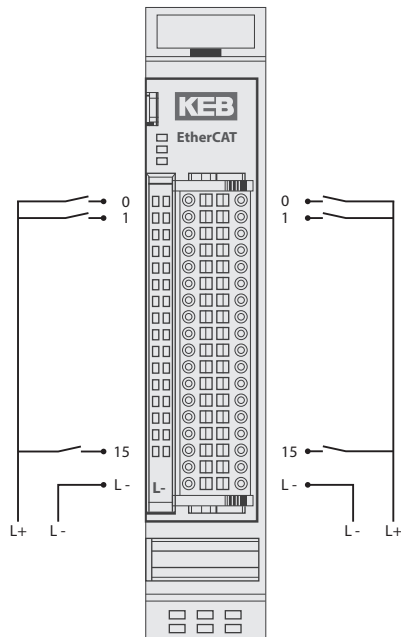
Digital inputs	16
Input delay	1 ms
Signal level (EN 61131-3, Type 1)	Off -3...5 V On 15...30 V
Digital outputs	16
Max. current	0.5 A per output
Total current	max. 8 A
E-Bus load	135 mA



DI16/DO8 1A

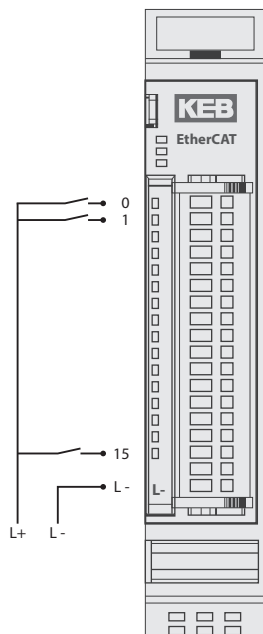
Digital inputs	16
Input delay	1 ms
Signal level (EN 61131-3, Type 1)	Off -3...5 V On 15...30 V
Digital outputs	8
Max. current	1 A per output
Total current	max. 8 A
E-Bus load	135 mA

C6 REMOTE I/O ETHERCAT DIGITAL INPUTS



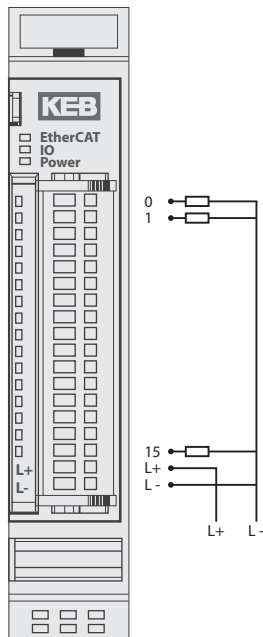
DI32

Digital inputs	32
Input delay	1 ms
Signal level (EN 61131-3, Type 1)	Off -3...5 V On 15...30 V
Digital outputs	-
Max. current	-
Total current	-
E-Bus load	85 mA



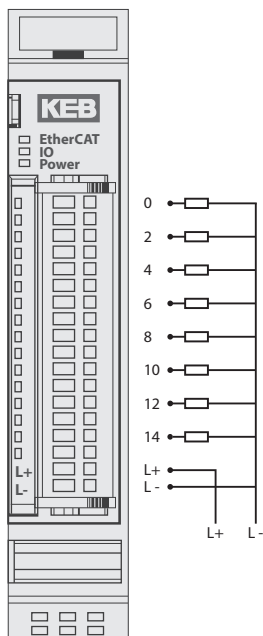
DI16

Digital inputs	16
Input delay	1 ms
Signal level (EN 61131-3, Type 1)	Off -3...5 V On 15...30 V
Digital outputs	-
Max. current	-
Total current	-
E-Bus load	100 mA



D016 0,5A

Digital inputs	-
Input delay	-
Signal level (EN 61131-3, Type 1)	-
Digital outputs	16
Max. current	0.5 A per output
Total current	max. 8 A
E-Bus load	130 mA



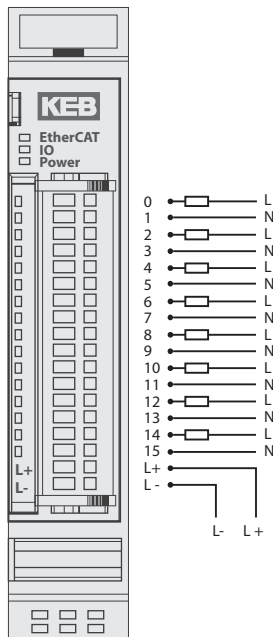
D08 1A

Digital inputs	-
Input delay	-
Signal level (EN 61131-3, Type 1)	-
Digital outputs	8
Max. current	1 A per output
Total current	max. 8 A
E-Bus load	130 mA

D08 2A

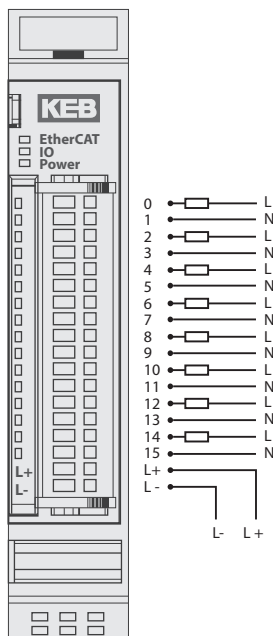
Digital inputs	-
Input delay	-
Signal level (EN 61131-3, Type 1)	-
Digital outputs	8
Max. current	2 A per output
Total current	max. 10 A
E-Bus load	130 mA

C6 REMOTE I/O ETHERCAT RELAY OUTPUTS



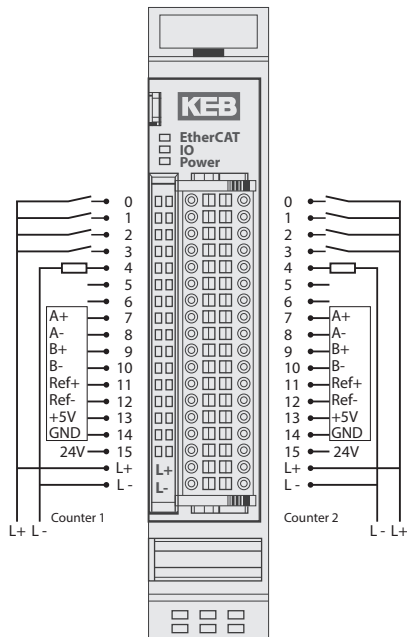
D08 RELAY NO 230 V

Digital inputs	-
Input delay	-
Signal level (EN 61131-3, Type 1)	-
Digital outputs	8
Max. current	5 A (resistive) / 2 A (inductiv)
Switching voltage	max. 24 V DC / 230 V AC
Switching cycles mech. (min.)	2×10^7
Switching cycles elec. (min.)	3×10^5 (2 A / 30 V DC)
E-Bus load	130 mA



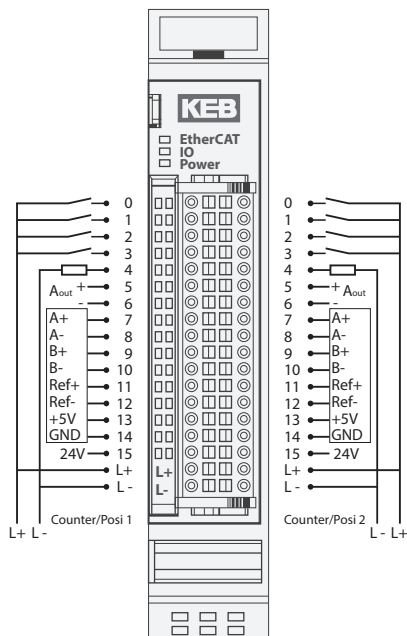
D08 RELAY NO 24 V

Digital inputs	-
Input delay	-
Signal level (EN 61131-3, Type 1)	-
Digital outputs	8
Max. current	5 A (resistive) / 2 A (inductiv)
Switching voltage	max. 24 V DC / 24 V AC
Switching cycles mech. (min.)	2×10^7
Switching cycles elec. (min.)	3×10^5 (2 A / 30 V DC)
E-Bus load	130 mA



DOUBLE COUNTER

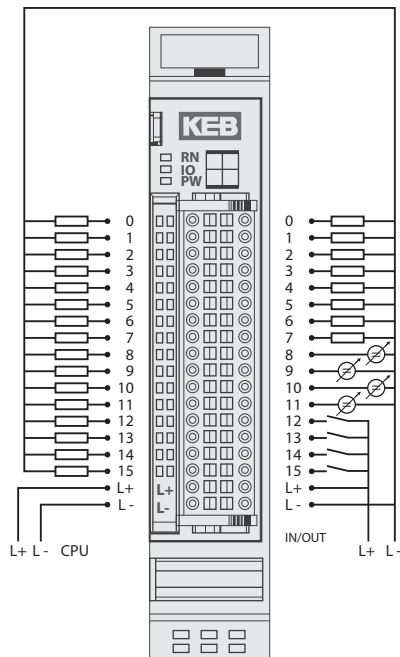
Encoder	2 A, B, Ref
Encoder type	5 V (RS422)
Count frequency	max. 400kHz
Digital inputs	8
Input delay	1ms
Signal level (EN 61131-3, Type 1)	Off -3...5 V On 15...30 V
Digital outputs	2
Max. current	2 A per output
Analog outputs	-
Resolution	-
E-Bus load	300 mA



DOUBLE COUNTER/POSI

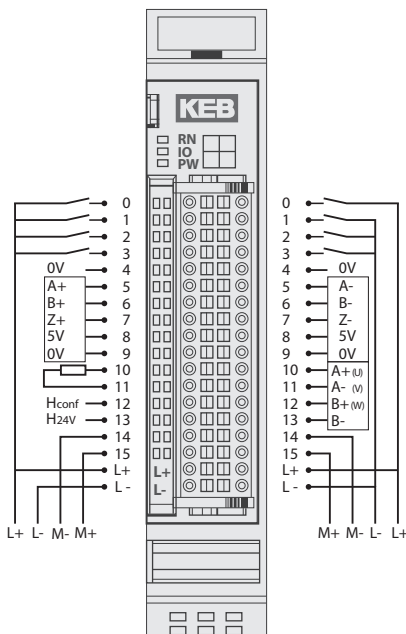
Encoder	2 A, B, Ref
Encoder type	5 V (RS422)
Count frequency	max. 400kHz
Digital inputs	8
Input delay	1ms
Signal level (EN 61131-3, Type 1)	Off -3...5 V On 15...30 V
Digital outputs	2
Max. current	2 A per output
Analog outputs	2
Resolution	12 BIT
E-Bus load	300 mA

C6 REMOTE I/O ETHERCAT MIX | DRIVE



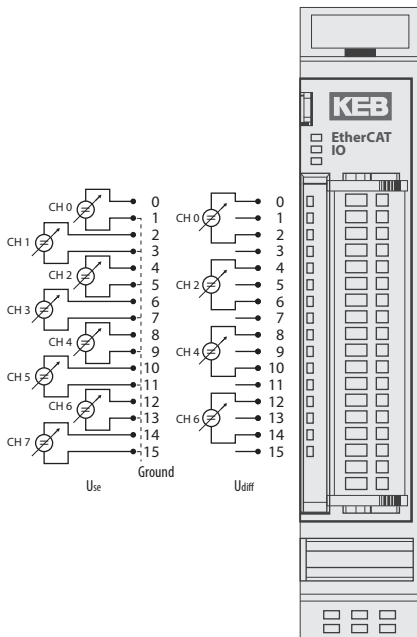
MIX02

Digital inputs	4 (8)
DI0..3	1ms
DI4	0.1ms
DI5..7	0.001ms
Counter (DI5)	500kHz (up to 1 MHz)
Digital outputs	24
D00..7:	0.5A
D08..23:	0.1A
Analog inputs 12 Bit	4 x 0..10V (also usable as DI, DI0..3)
Sampling rate	1ms
RS485	potential-separated
Baud rate	2.4...921.6 kBit/s
E-Bus load	90 mA



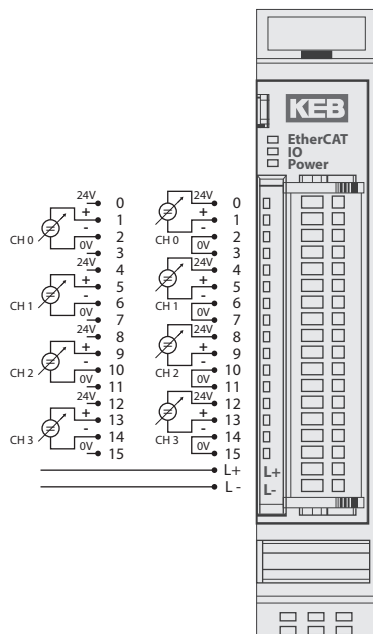
DRIVE MODULE

Motor connection	2-phase stepper motor or brushless DC motor
Motor voltage	12 V .. 72 VDC / cULus: 12 V .. 42 VDC
Motor current nominal	5 A
Peak current	Stepper motor: 10 A / brushless DC Motor: 15 A
Incremental emitter	5 V / 24 V (A, /A, B, /B, Z, /Z)
Hall emitter	5 V / 24 V (H1, H2, H3) or 3 extra zero-switching digital inputs
Digital inputs	5 x 1 ms configurable, e.g. reference switch, limit switch, release
Digital outputs	1 x 0.5 A (brake output or standard output)
Trigger	CIA402
E-Bus load	100 mA



AI4/8-U (CoE)

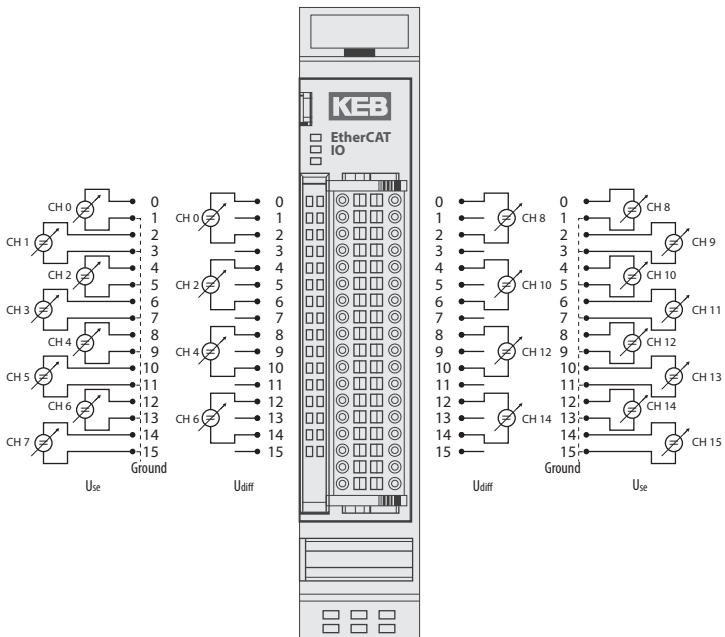
Analog inputs	8 single-ended or 4 differential
Resolution	13 Bit (1.221 μ V unipolar/ 2.422 μ V bipolar)
Measurement range	0...10 V, \pm 10 V
Conversion time	464 μ s (if all channels are active)
Output rate	-
E-Bus load	190 mA



AI4-I (CoE)

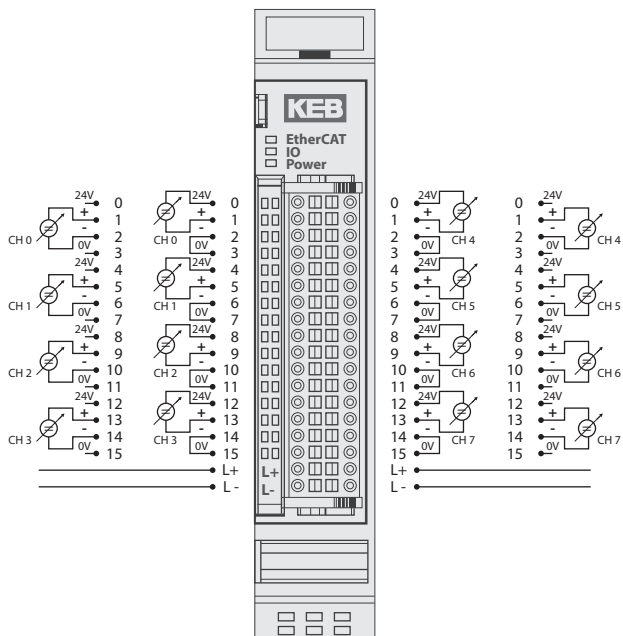
Analog inputs	4
Resolution	12 Bit (5.2 μ A)
Measurement range	0...20 mA, 4...20 mA (end value 20 mA)
Conversion time	235 μ s (if all channels are active)
Output rate	-
E-Bus load	190 mA

C6 REMOTE I/O ETHERCAT ANALOG INPUTS



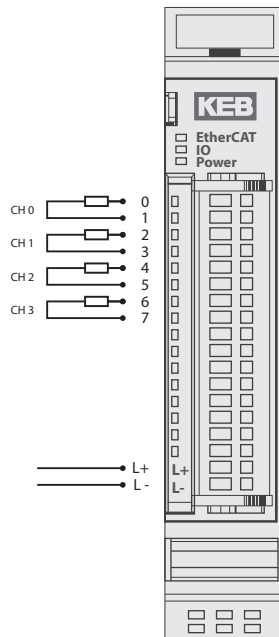
AI8/16-U (CoE)

Analog inputs	16 single-ended or 8 differential
Resolution	13 Bit (1,221 μ V unipolar/ 2,422 μ V bipolar)
Measurement range	0...10 V, \pm 10 V
Conversion time	580 μ s (if all channels are active)
Output rate	-
E-Bus load	190 mA



AI8-I (CoE)

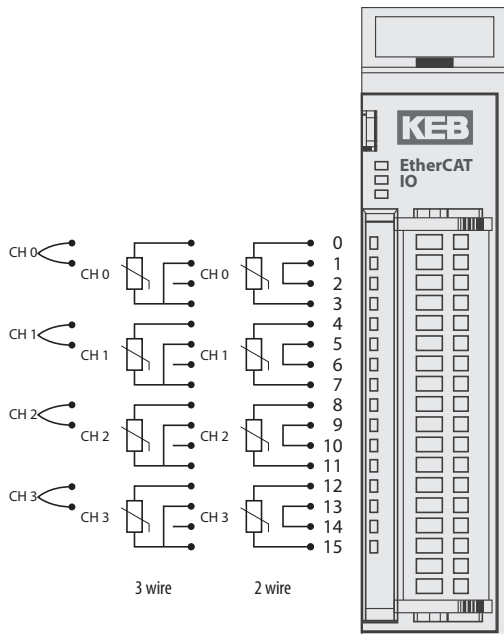
Analog inputs	8
Resolution	12 Bit (5.2 μ A)
Measurement range	0...20 mA, 4...20 mA (end value 20 mA)
Conversion Time	290 μ s (if all channels are active)
Output rate	-
E-Bus load	190 mA



A04-U/I (CoE)

Analog outputs	4
Resolution	16 Bit
Measurement range	0...10 V, ± 10 V, 0...20 mA
Output rate	220 ms
E-Bus load	150 mA

C6 REMOTE I/O ETHERCAT TEMPERATURE INPUTS



AI4-PT/NI/ THERMO

Analog inputs	4
Resolution	16 Bit
Conversion time	50ms (adjustable)
E-Bus load	170 mA

Thermoelement

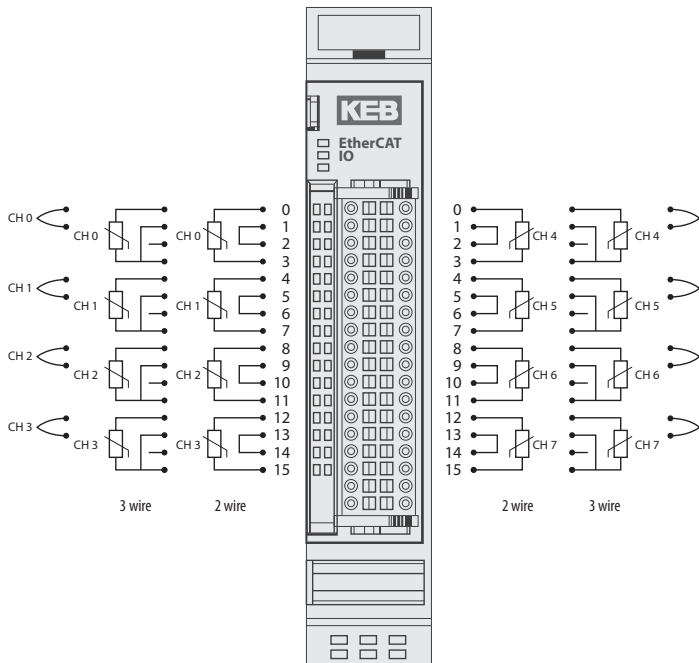
Sensor types	J,K, mV (internal)
Cold point compensation	yes
Measuring range Typ K	-200 °C...+1372 °C
Measuring range Typ J	-50 °C...+760 °C
Measuring range mV	-40 ... +65 mV

Pt100 / Ni100

Measuring range Pt	-75 °C...+670 °C
Measuring range Ni	-60 °C...+250 °C
Input resistance	70...320 Ω
Measuring current	1 mA (typical)

Pt1000 / Ni1000

Measuring range Pt	-75 °C...+670 °C
Measuring range Ni	-60 °C...+250 °C
Input resistance	700...3200 Ω
Measuring current	0.1 mA (typical)



A18-PT/NI/THERMO

Analog inputs	8
Resolution	16 Bit
Conversion time	50ms (adjustable)
E-Bus load	170 mA

Thermocouple

Sensor types	J,K, mV (internal)
Cold point compensation	yes
Measuring range Typ K	-200 °C...+1372 °C
Measuring range Typ J	-50 °C...+760 °C
Measuring range mV	-40 ... +65 mV

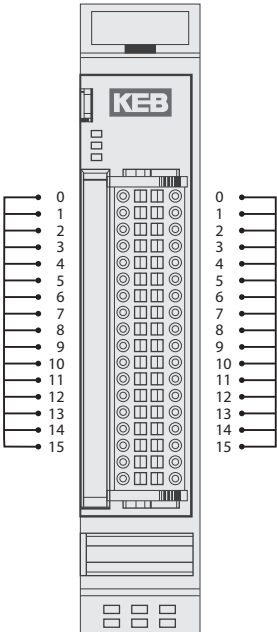
Pt100 / Ni100

Measuring range Pt	-75 °C...+670 °C
Measuring range Ni	-60 °C...+250 °C
Input resistance	70...320 Ω
Measuring current	1 mA (typical)

Pt1000 / Ni1000

Measuring range Pt	-75 °C...+670 °C
Measuring range Ni	-60 °C...+250 °C
Input resistance	700...3200 Ω
Measuring current	0.1 mA (typical)

C6 REMOTE I/O POTENTIAL DISTRIBUTOR



POTENTIAL DISTRIBUTOR

Connections	2x 16
	The module has 2 separate potential lines
E-Bus load	0 mA