

Sensor principle		MH-C2
Electrical data		
Measuring range	°	0 ... 360
Indep. linearity (typ.)	% of meas. range	±0.3
Max. hysteresis	°	0.1
Resolution	bit	16
Max. repeatability	°	0.1
Sample rate	kHz	0.5
Max. temperature coefficient of the output signal	ppm/K	25
MTTFd / MTBF	years	135 / 135
Power supply voltage	VDC	8 ... 35
Current consumption without bus load (typ.), per channel	mA	30
Reverse polarity protection of power supply		yes
Electrical connection (s = shielded)		Round cable, s
Cross section of single wires	mm^2	0.34 (AWG22)
Bus interface		ISO/DIS 11898-2
CANopen communication according to CiA		Standard DS-301 Rev. 4.02
Device profile		DS-406, Rev. 3.1, Encoder class C2
Default Node-ID's		16 & 17 (programmable 1 ... 127)
Default bitrate	kBit/s	125
Mechanical data		
Mechanical range	°	360 (continuous)
Protection class		IP68 / IP69K
Min. life	movements	no limitation
Operating & storage temperature	°C	-40 ... +85
EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5…2000Hz)	g	50
EN 60068-2-27 Shock	g	200
Standards		
EN 55022 class B, Emission radiated (30...230MHz)	dB(µV/m)	max. 30
EN 55022 class B, Emission radiated (230...1000MHz)	dB(µV/m)	max. 37
EN 55022 class B, Emission conducted (0.15...0.5MHz)	dB(µV)	max. 56 ... 46
EN 55022 class B, Emission conducted (0.5...5MHz)	dB(µV)	max. 46
EN 55022 class B, Emission conducted (5...30MHz)	dB(µV)	max. 50
EN 61000-4-2, ESD (contact discharge / air discharge)	kV	±4 / ±8
EN 61000-4-3, Immission HF radiated (80...1000MHz/1.4...2.7GHz)	V/m	30
EN 61000-4-4, Burst (on all lines)	kV	±1
EN 61000-4-5, Surge (lines to ground)	kV	±1
EN 61000-4-6, Immission HF conducted (0.15...80MHz)	Vemk	12
EN 61000-4-8, Immission magnetic field (50Hz)	A/m	300
EN 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20
EN 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)	kV	1
CANopen conformance certified by CiA	Certificate-#: CiA201003-301V402/20-0116	

Vert-X 48E - 24V / CANopen, redundant

Applications

- Mining machine
- Agricultural machine
- Container side loader

Features

- CiA approved CANopen certified CiA201003-301V402/20-0116
- High protection class IP68 / IP69K
- Very robust design
- Non-contacting measuring method
- Very long life
- High accuracy of measurement
- Applications under adverse ambient conditions possible (humidity, dampness, oil dust, vibrations etc.)
- Detection of magnetic loss (with safety flag)

Errors and omissions excepted. Subject to change without notice. / State: 29.04.16

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Vert-X 48E - 24V / CANopen, redundant

Ordering code

CAN characteristics

Redundant 1-Bus / CAN-High-In ; CAN-High-Out ; CAN-Low-In ; CAN-Low-Out	Optional	A
Redundant 1-Bus / CAN-High ; CAN-Low ; RCAN	Optional	B
Redundant 1-Bus / CAN-High ; CAN-Low	Standard	C
Special version	Optional	9

Electrical connection

6	Optional	Round cable 6pole
8	Standard	Round cable 4pole
9	Optional	Special cable

Output signal

CANopen Encoder Profile 406 (C2)	Standard	3

Length of cable

02	Standard	1.0m
06	Optional	3.0m
10	Optional	5.0m
99	Optional	Special length

Power supply voltage

24VDC	Standard	1

Vert-X	4	8	E	8		8	3	6		1	3	C		8	0	2

Electrical angle

36	Standard	Electrical angle 360°

Sensor principle

8	MH-C2

Mechanical version

48E5	Optional	Magnetic actuator type 5
48E6	Optional	Magnetic actuator type 6
48E7	Optional	Magnetic actuator type 7
48E8	Standard	Magnetic actuator type 8
48E9	Optional	Special housing ; special magnetic actuator

	MH-C2
Custom magnetic actuator	X
Custom modification of the housing	X
Custom cable	X
CAN integrated bus termination resistor (120Ω) / RCAN	X
Custom bitrate (10 ; 20 ; 50 ; 100 ; 250 ; 500 ; 800 ; 1000 kBit/s)	X
Extended operating range, axial (without safety flag)	X

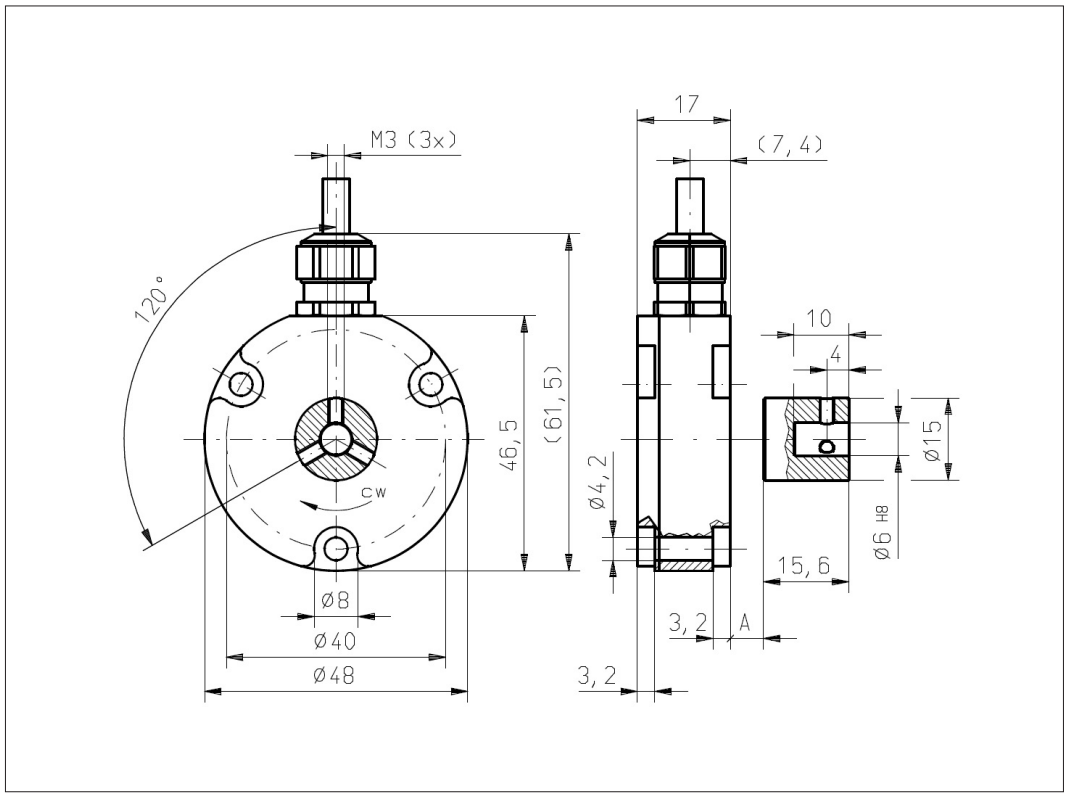
Options (on request)

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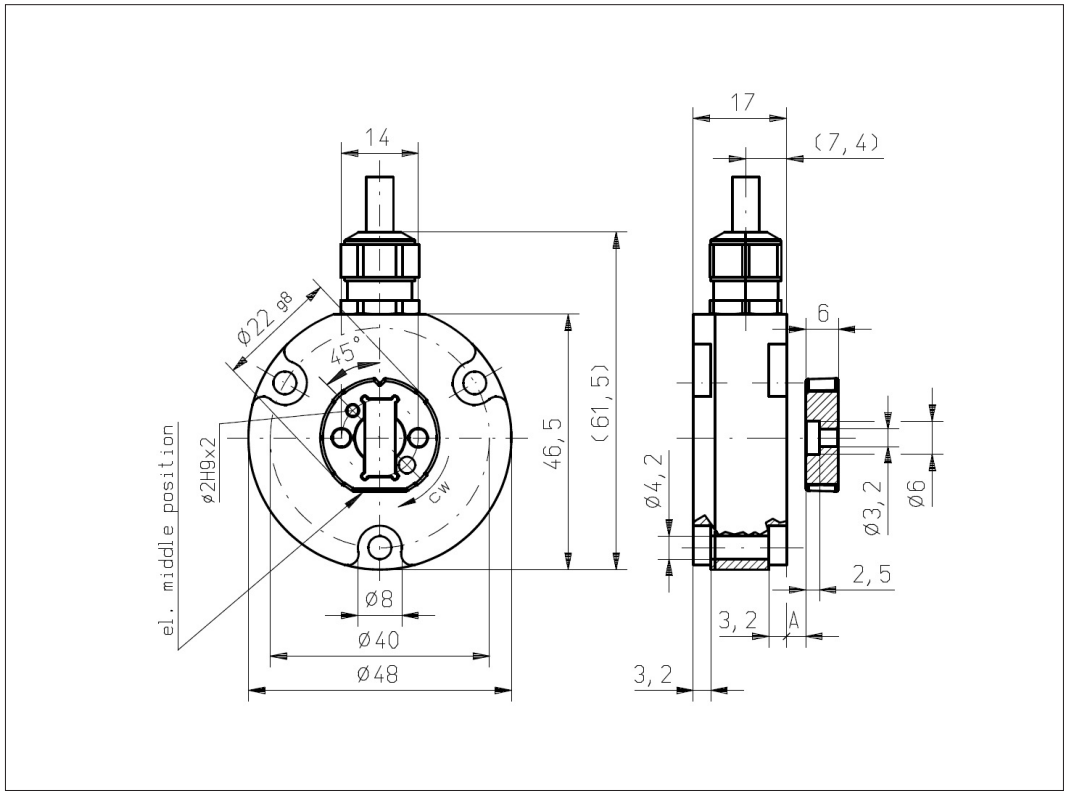
Vert-X 48E5

Accessories (incl.)
None

Operating range/Air gap (A)
Standard with safety flag
Redundant 0 ... 6.2mm

Extended without safety flag (Optional)
Redundant 0 ... 10.0mm

Features Safety Flag
- Detection of magnetic loss
- System shut-down in case of magnetic actuator out of valid operating range
- Recommended for safety relevant applications



Vert-X 48E6

Accessories (incl.)
- None

Operating range/Air gap (A)
Standard with safety flag
Redundant 0 ... 5.0mm

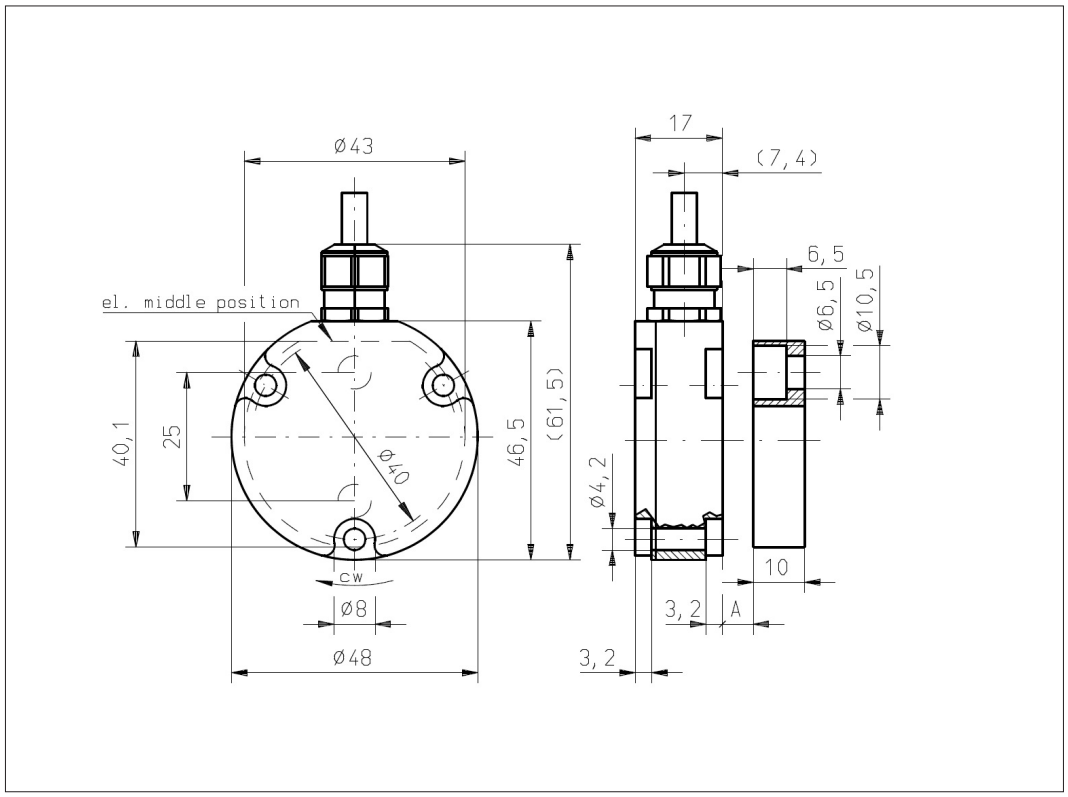
Extended without safety flag (Optional)
Redundant 0 ... 8.4mm

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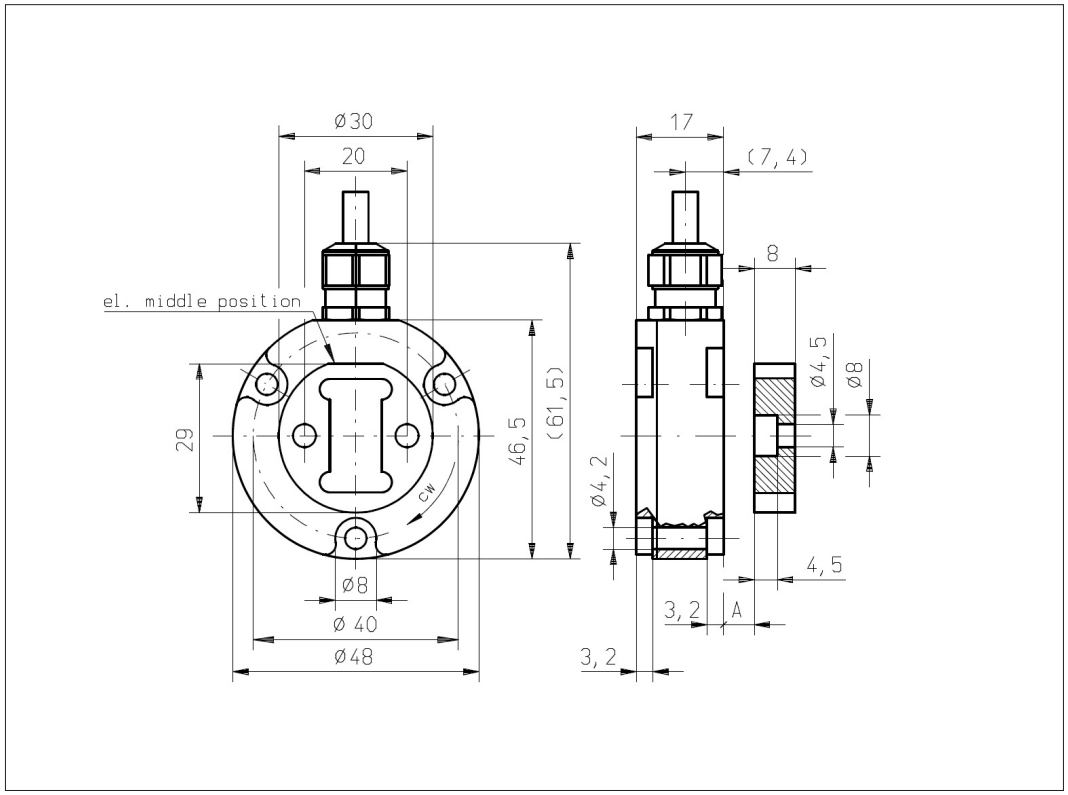
Vert-X 48E7

Accessories (incl.)
- None

Operating range/Air gap (A)
Standard with safety flag
Redundant 0 ... 13.3mm

Extended without safety flag (Optional)
Redundant 0 ... 19.7mm

Features Safety Flag
- Detection of magnetic loss
- System shut-down in case of magnetic actuator out of valid operating range
- Recommended for safety relevant applications



Vert-X 48E8

Accessories (incl.)
- None

Operating range/Air gap (A)
Standard with safety flag
Redundant 0 ... 12.8mm

Extended without safety flag (Optional)
Redundant 0 ... 18.7mm

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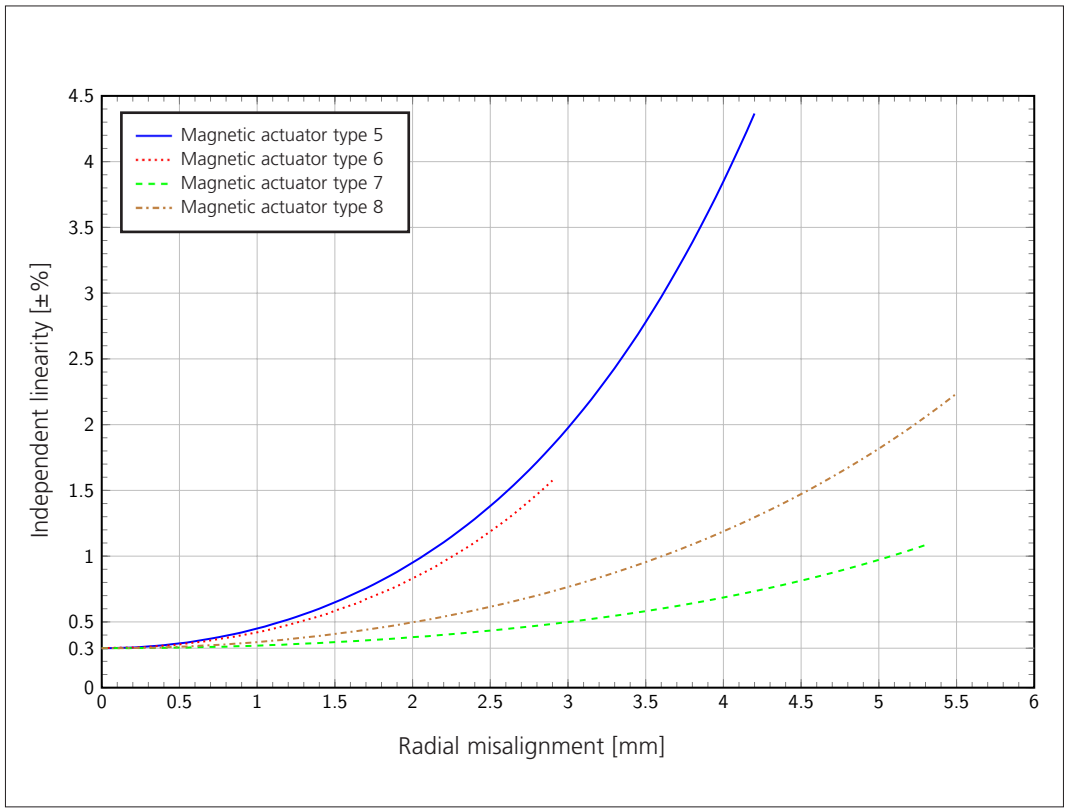
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Vert-X 48E

Indep. linearity with radial misalignment (@360°)



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Vert-X 48E - 24V / CANopen, Certificates

CANopen certified by CiA

Certificate # **CiA201003-301V402/20-0116**

Vendor ID **00 00 00 80**

Manufacturer Contelec AG

Device Vert-X MH-C2 CAN

Product code: 0001 8774h
Object 1018h/02h

Revision number: 0000 00A1h
Object 1018h/03h

Hardware version: HV30781B
Object 1009h

Software version: SV_1.2.3
Object 100Ah

EDS MH-C2_CAN.eds

File version: 1

File revision: 0

EDS version: 4.02

Nuremberg, 26.03.2010

Technical Manager

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