




## Vert-X 88 - 24V / CANopen, redundant

### Applications

- Agricultural machines
- Construction machines
- Forest machines
- Special purpose vehicles

### Features

- CiA approved  CIA201003-301V402/20-0116
- Very robust design
- Contactless measuring method
- Long life
- High accuracy of measurement
- Applications under adverse ambient conditions possible (humidity, dampness, dust, vibrations etc.)

Sensor principle		MH-C2
<b>Electrical data</b>		
Measuring range	°	0 ... 360
Indep. linearity	% of meas. range	±0.1
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 <sup>2</sup>	0.56 (AWG20)
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
<b>Mechanical data</b>		
Mechanical range	°	360 (continuous)
Protection class		IP68 & IP69K
Max. starting torque at specified protection class	Ncm	0.5 / 6
Max. rotating speed	rpm	3000
Min. life	movements	360 Mio.
Max. permitted axial shaft load	N	300
Max. permitted radial shaft load	N	400
Operating & storage temperature	°C	-40 ... +85
IEC 68-2-6 Vibration (Amax = 0.75mm, f = 5 ... 2000 Hz)	g	20
IEC 68-2-27 Shock	g	50
<b>Standards</b>		
EN 55022 classe B, Emission radiated (30...230 MHz)	dB(µV/m)	max. 30
EN 55022 classe B, Emission radiated (230...1000MHz)	dB(µV/m)	max. 37
EN 61000-4-2, ESD (contact discharge / air discharge)	kV	±4 / ±8
EN 61000-4-3, Immission HF radiated (80...1000 MHz)	V/m	30
EN 61000-4-3, Immission HF radiated (1.4...2 GHz)	V/m	3
EN 61000-4-3, Immission HF radiated (2...2.7 GHz)	V/m	1
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	10
EN 61000-4-8, Immission magnetic field (50Hz)	A/m	300
IEC 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20
IEC 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)	kV	1
CANopen conformance certified by CiA	Certificate-#:	CiA201003-301V402/20-0116

Errors and omissions excepted. Subject to change without notice. / State: 22.09.14

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**CONTELEC**  
 A company of the Siedle-Group



**Vert-X 88 - 24V / CANopen, redundant**

**Ordering code**

		<b>CAN characteristics</b>				<b>Electrical connection</b>							
Redundant 1-Bus / CAN-High-In; CAN-High-Out; CAN-Low-In; CAN-Low-Out		Optional	A	6	Optional	Round cable 6pole							
Redundant 1-Bus / CAN-High; CAN-Low; R <sub>CAN</sub>		Optional	B	8	Standard	Round cable 4pole							
Redundant 1-Bus / CAN-High; CAN-Low Special version		Standard	C	9	Optional	Special cable							
		<b>Output signal</b>				<b>Length of cable</b>							
CANopen Encoder Profile 406 (C2)		Standard	3	02	Standard	1.0m							
		<b>Power supply voltage</b>		06	Optional	3.0m							
24VDC		Standard	1	10	Optional	5.0m							
				99	Optional	Special length							
<b>Vert-X</b>	<b>8</b>	<b>8</b>	<b>7</b>	<b>2</b>	<b>8</b>	<b>3</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>C</b>	<b>8</b>	<b>0</b>	<b>2</b>
		<b>Electrical angle</b>				<b>Sensor principle</b>							
		36	Standard	Electrical angle 360°		8		MH-C2					
		<b>Mechanical version</b>											
8872	Standard	Housing ø88mm with flange ; 10mm shaft with hexagon socket ; IP68 & IP69K											
8873	Standard	Housing ø88mm with flange ; 12mm shaft D-shape & cross-hole ; IP68 & IP69K											
8899	Optional	Special housing ; Special shaft											

	MH-C2
Custom shaft design	X
Custom modification of the housing	X
Custom cable	X
CAN integrated bus termination resistor (120Ω) / R <sub>CAN</sub>	X
Custom bitrate (10 ; 20 ; 50 ; 100 ; 250 ; 500 ; 800 ; 1000 kBit/s)	X

**Options (on request)**

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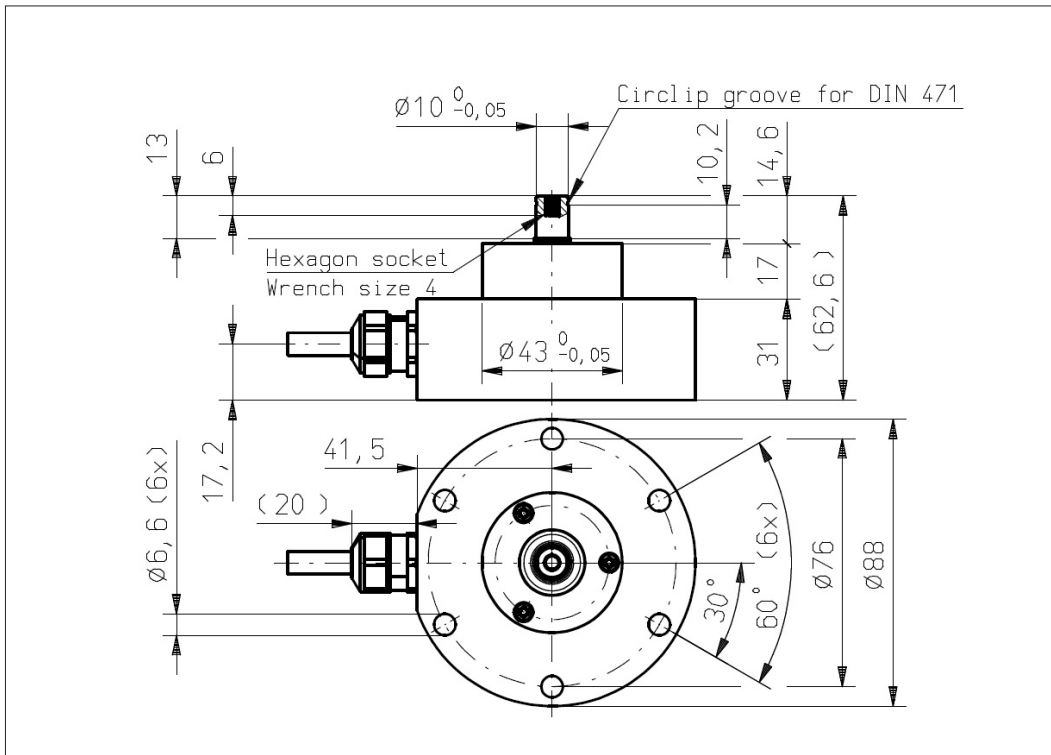
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### Vert-X 8872

#### Accessoires (incl.)

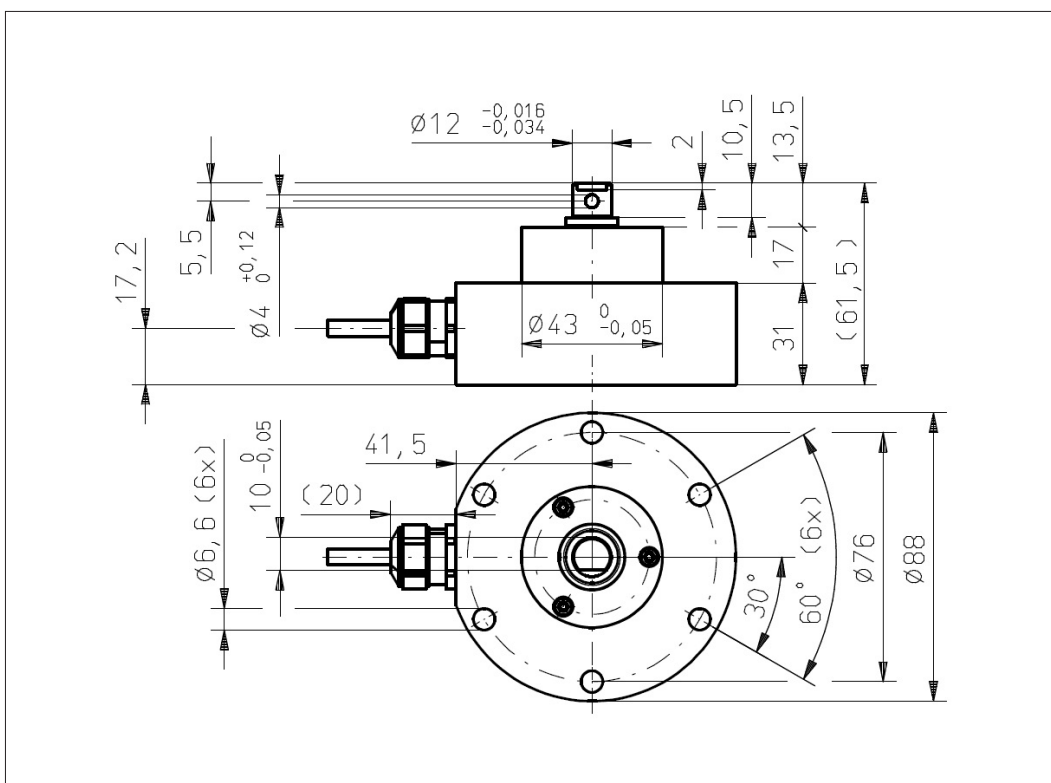
- 3x Hexagon screw M6x45
- 3x Washer
- 1x Circlip



### Vert-X 8873

#### Accessoires (incl.)

- 3x Hexagon screw M6x45
- 3x Washer



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Vert-X 88 - 24V / CANopen,  
Certificates



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: C000 C0A1h  
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

*Signature of Technical Manager*  
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