

Угловые энкодеры MRP 2010, 2030, 2080

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: hia@nt-rt.ru || сайт: <https://heidenhain.nt-rt.ru/>

MRP 2000 series

- Angle encoder modules with built-in encoder and bearing
- Particularly compact dimensions
 - High measuring and bearing accuracy
 - Hollow shaft diameter: 10 mm

Encoder characteristics	Incremental MRP 2080	Absolute MRP 2010	MRP 2030
Measuring standard	DIADUR circular scale		
Signal periods	2048		
System accuracy	±7"		
Position error per signal period	±1.5"		
Repeatability	From both directions: 3"		
RMS position noise	Typically 0.07"	Typically 0.10"	
Interface	~ 1 V _{pp}	EnDat 2.2	EnDat 3
Ordering designation	–	EnDat22	E30-RB
Position values per revolution	–	25 bits	
Clock frequency Calculation time t _{cal}	–	≤ 16 MHz ≤ 7 μs	
Reference marks	1	–	
Cutoff frequency –3 dB	≥ 210 kHz	–	
Bus operation (daisy chain)	–	–	✓
Data rate	–	–	12.5 Mbit/s (25 Mbit/s)
Cycle time	–	–	Typically > 25 μs
Electrical connection	14-pin PCB connector; adapter cable plus quick connector as an accessory	16-pin PCB connector (12+4 for additional sensor)	
Cable length ¹⁾	≤ 30 m (with HEIDENHAIN cable)		25 Mbit/s; up to 3 bus participants: ≤ 40 m 12.5 Mbit/s; up to 6 bus participants: ≤ 100 m 12.5 Mbit/s; up to 8 bus participants: ≤ 10 m
Supply voltage	DC 5 V ±0.25 V	DC 3.6 V to 14 V	
Power consumption (maximum)	5.25 V: ≤ 0.7 W	3.6 V: ≤ 0.6 W 14 V: ≤ 0.7 W	3.6 V: ≤ 0.45 W 14 V: ≤ 0.65 W
Current consumption (typical)	Without load: I _p = 60 mA; max. 120 mA With load: max. 130 mA	5 V: 85 mA (without load)	12 V: 25 mA (without load)

¹⁾ The cable length refers to the entire transmission distance.

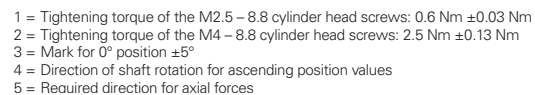
Bearing properties	Incremental MRP 2080	Absolute MRP 2010	MRP 2030
Shaft	Hollow through shaft D = 10 mm		
Max. permissible axial load ³⁾	50 N (centered load)		
Max. permissible radial load ³⁾	45 N		
Max. permissible tilting torque ³⁾	0.8 Nm		
Contact stiffness	Axial: 25 N/μm Radial: 77 N/μm (calculated values)		
Resistance to tilt	2.16 Nm/mrad (calculated value)		
Mech. permissible speed	2000 rpm		
Moment of friction	≤ 0.020 Nm		
Starting torque	≤ 0.010 Nm		
Max. transferable shaft torque ³⁾	0.3 Nm		
Moment of inertia of rotor	3.5 · 10 ^{–6} kgm ²		
Radial guideway accuracy	Measured at a distance of h = 20 mm from the rotor mating surface: ≤ 0.60 μm		
Non-reproducible radial guideway accuracy	Measured at a distance of h = 20 mm from the rotor mating surface: ≤ 0.70 μm		
Axial guideway accuracy	≤ ±0.3 μm		
Axial runout of the surface	≤ 8 μm		
Wobble of the axis	2.5"		
Vibration 55 Hz to 2000 Hz Shock 6 ms	≤ 200 m/s ² (EN 60068-2-6) ≤ 1000 m/s ² (EN 60068-2-27) (without load)		
Protection EN 60529 ²⁾	IP00 ¹⁾		
Operating temperature Storage temperature	0 °C to 50 °C 0 °C to 50 °C		
Relative air humidity	≤ 75% without condensation		
Mass	0.12 kg (without cable or connector)		

¹⁾ The electromagnetic compatibility of the complete system must be ensured through appropriate measures taken during installation.
²⁾ When mounted
³⁾ Purely static load, without additional vibrations or shock loads



MRP 2080/
MRP 2010/
MRP 2030

MRP 2010, MRP 2030, MRP 2080



Technical drawing of a mechanical assembly, showing three views: front view, side view, and top view. The drawing includes dimensions, tolerances, and surface finish requirements.

Front View (Top):

- Overall width: $\varnothing 19 \dots \varnothing 34$ (3)
- Inner diameter: $\varnothing 13.5$ (3)
- Inner diameter: $\varnothing 8$ (3)
- Inner diameter: $\varnothing 10f7$ (E) (4)
- Inner diameter: $\varnothing 2.8$ (6x60°) (3)
- Surface finish: $Rz 16$, $Rz 10$ (3)
- Surface finish: 0.005 (3)

Side View (Middle):

- Overall width: $\geq \varnothing 57$ (3)
- Inner diameter: $\varnothing 4.5$ (4x90°) (3)
- Inner diameter: $\varnothing 35_{-0}^0$ (3)
- Inner diameter: $\varnothing 44$ (3)
- Inner diameter: $\varnothing 54H7$ (E) (4)
- Surface finish: $Rz 16$, $Rz 10$ (3)
- Surface finish: 0.005 (3)

Top View (Bottom):

- Overall width: $\varnothing 19 \dots \varnothing 26$ (3)
- Inner diameter: $\varnothing 13.5$ (3)
- Inner diameter: $\varnothing 8$ (3)
- Inner diameter: $\varnothing 10f7$ (E) (4)
- Inner diameter: $\varnothing 2.8$ (6x60°) (3)
- Surface finish: $Rz 16$, $Rz 10$ (3)
- Surface finish: 0.005 (3)

- 1 = Rotor
- 2 = Stator (do not use as rotor)
- 3 = Required mating dimensions for the transfer of the maximum permissible loads as per the specifications
- 4 = Optional: recommended mating dimensions
- 5 = Screw: ISO 4762 – M2.5 – 8.8; materially bonding threadlocker required; washer: ISO 7092 – 2.5 – 200HV; tightening torque: 0.6 Nm $\pm$ 0.03 Nm
- 6 = Screw: ISO 4762 – M4 – 8.8; materially bonding threadlocker required; washer: ISO 7092 – 3 – 200HV; tightening torque: 2.5 Nm $\pm$ 0.13 Nm
- 7 = The customer is responsible for electrical shielding and for connecting cables

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: hia@nt-rt.ru || сайт: <https://heidenhain.nt-rt.ru/>