

Угловые энкодеры MRS 2280, 2230

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/>

MRS 2200 series

Angle encoder module with integrated encoder and bearing

- Compact dimensions
- High measuring and bearing accuracy
- Hollow shaft diameter: 10 mm
- High resistance to tilt

Encoder characteristics	Incremental MRS 2280	Absolute MRS 2230	Incremental MRS 2281	Absolute MRS 2231
Measuring standard	DIADUR circular scale			
Signal periods	2048			
System accuracy	±10"			
Position error per signal period	±1.5"			
Repeatability	From both directions: 3"			
RMS position noise	Typically 0.07"	Typically 0.10"	Typically 0.07"	Typically 0.10"
Interface	~ 1 V _{PP}	EnDat 3	~ 1 V _{PP}	EnDat 3
Ordering designation	–	E30-RB	–	E30-RB
Positions/revolution	–	25 bits	–	25 bits
Reference marks	One	–	One	–
Cutoff frequency –3 dB	≥ 210 kHz	–	≥ 210 kHz	–
Bus operation (daisy chain)	–	✓	–	✓
Data rate	–	12.5 Mbit/s (25 Mbit/s)	–	12.5 Mbit/s (25 Mbit/s)
Cycle time	–	Typically > 25 µs	–	Typically > 25 µs
Electrical connection	14-pin PCB connector; accessory: adapter cable with quick connector	16-pin PCB connector (12+4 for additional sensor)	14-pin PCB connector; accessory: adapter cable with quick connector	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	≤ 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	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: ≤ 0.45 W 14 V: ≤ 0.65 W	5.25 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	12 V: 25 mA (without load)	Without load: I _p = 60 mA; max. 120 mA With load: max. 130 mA	12 V: 25 mA (without load)

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

Bearing properties	Incremental MRS 2280	Absolute MRS 2230	Incremental MRS 2281	Absolute MRS 2231
Shaft	Hollow through shaft D = 10 mm			
Max. permissible axial load ¹⁾	100 N (centered load)		50 N (centered load)	
Max. permissible radial load ¹⁾	45 N			
Max. permissible tilting torque ¹⁾	5 Nm		2.5 Nm	
Contact stiffness	Axial: 54 N/μm Radial: 153 N/μm (calculated values)		Axial: 27 N/μm Radial: 77 N/μm (calculated values)	
Resistance to tilt	52 Nm/mrad (calculated value)		24 Nm/mrad (calculated value)	
Mech. permissible speed	1000 rpm			
Moment of friction	≤ 20 mNm		≤ 15 mNm	
Starting torque	≤ 30 mNm		≤ 20 mNm	
Max. transferable shaft torque ¹⁾	1 Nm			
Moment of inertia of rotor	1.5 · 10 ⁻⁵ kgm ²		0.9 · 10 ⁻⁵ kgm ²	
Radial guideway accuracy	≤ 0.8 μm ²⁾		≤ 2.4 μm ²⁾	
Non-reproducible radial guideway accuracy	≤ 0.5 μm ²⁾		≤ 1.6 μm ²⁾	
Axial runout of the surface	≤ 20 μm		≤ 30 μm	
Radial runout	≤ 30 μm		≤ 50 μm	
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	IP00 ³⁾			
Operating temperature Storage temperature	0 °C to 50 °C 0 °C to 50 °C			
Relative air humidity	≤ 75% without condensation			
Mass	0.34 kg (without cable or connector)		0.23 kg (without cable or connector)	

¹⁾ Purely static load, without additional vibrations or shock load. The overlapping of individual loads is not taken into account.

²⁾ Measured at distance of h = 20 mm from the rotor mating surface; see *Measuring and bearing accuracy*

³⁾ The electromagnetic compatibility of the complete system must be ensured through appropriate measures during installation.



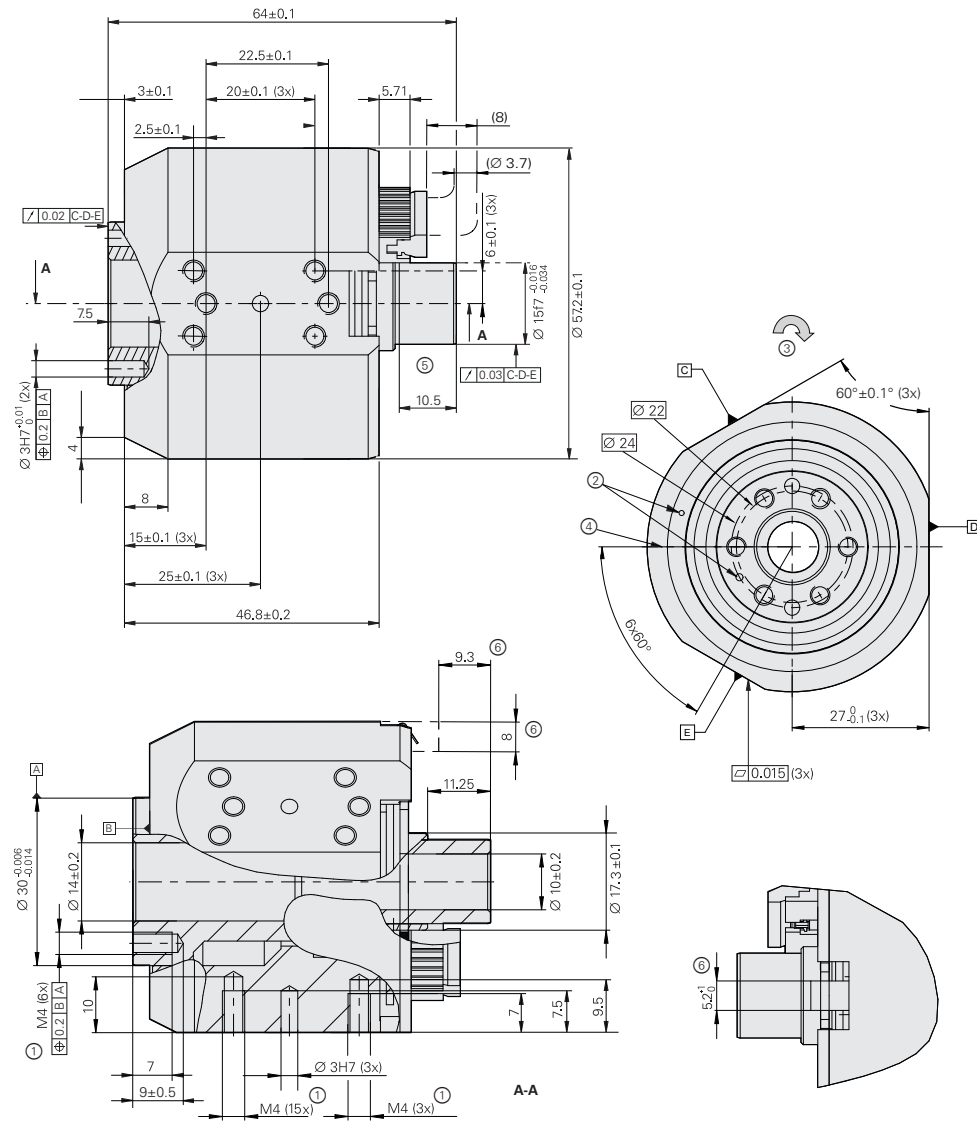
MRS 2280/
MRS 2230



MRS 2281/
MRS 2231

MRS 2200 series

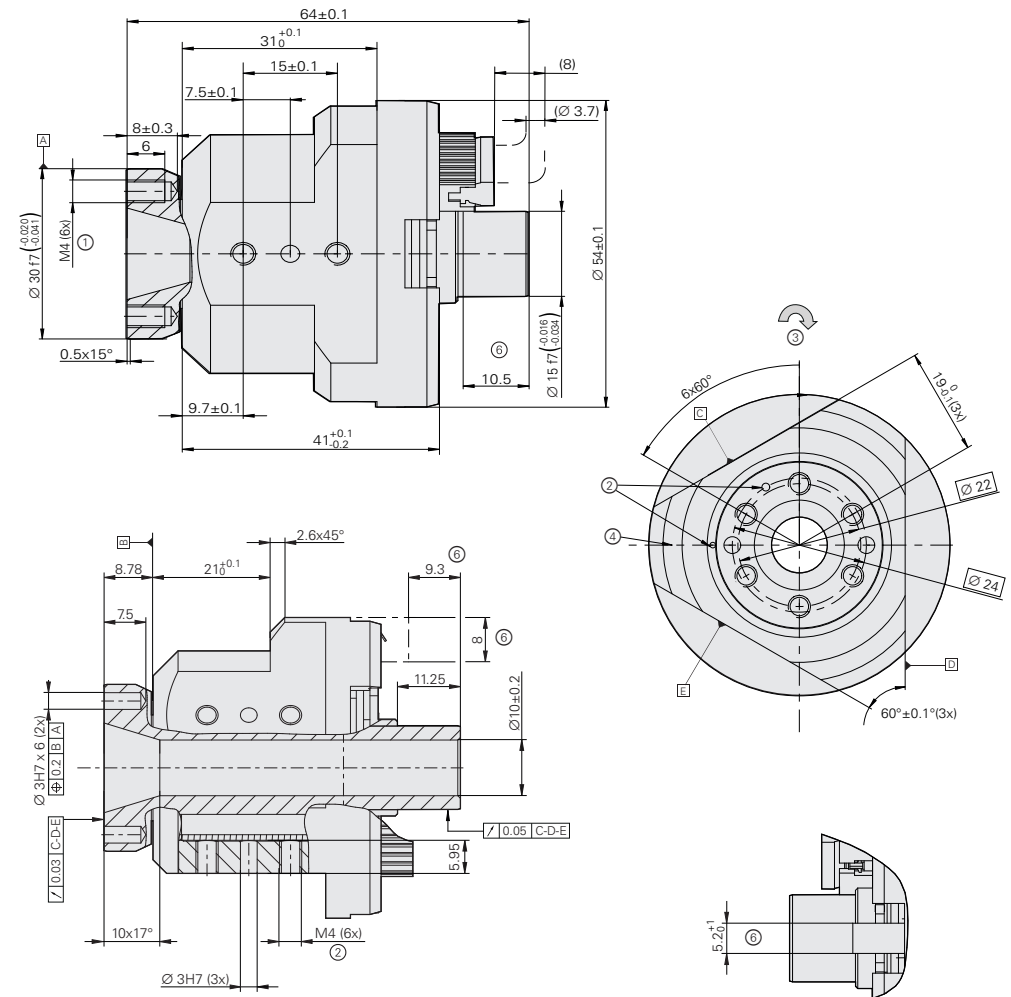
MRS 2280, MRS 2230



- 1 = Tightening torque of the M4 – 8.8 cylinder head screw: 2.5 Nm ±0.13 Nm
 2 = Mark for 0° position ±5°
 3 = Direction of shaft rotation for ascending position values
 4 = LED position
 5 = Permitted for shaft clamping
 6 = Area available for flex PCB

mm
 Tolerancing ISO 8015
 ISO 2768:1989-mH
 ≤ 6 mm: ±0.2 mm

MRS 2281, MRS 2231



- 1 = Tightening torque of the M4 – 8.8 cylinder head screw: 2.5 Nm ±0.13 Nm
 2 = Mark for 0° position ±5°
 3 = Direction of shaft rotation for ascending position values
 4 = LED position
 5 = Permitted for shaft clamping
 6 = Area available for flex PCB

mm
 Tolerancing ISO 8015
 ISO 2768:1989-mH
 ≤ 6 mm: ±0.2 mm

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
Нижегород (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/>