

Signal converter

Frequency divider	FT 1D-1D	HTL / RS422
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The frequency divider FT is intended for the error-free division of frequencies or pulses from conventional encoders, sensors or other incremental measuring systems. Four readily accessible DIL switches allow programming division ratios from 1:1 up to 1:4096 and the desired representation of the direction of rotation. A separately adjustable divider is available for the zero pulse.

The module can be easily and conveniently mounted in a cabinet on a standard DIN rail.



Power supply



Limit frequency



DIN-rail mounting

Characteristics

- Level conversion from TTL / RS422 into HTL 10 ... 30 V DC and vice-versa.
- Adjustable division ratio for error-free and division of the position given by encoder pulses with direction (A, B, 90°).
- Limit frequency 300 kHz.
- Separately adjustable divider for the zero pulse.
- Push-pull outputs for direct PLC control.

Benefit

- Frequency reduction for slow controls.
- External scaling for controls.
- Active signal adaptation for High/Low level.
- Adjustable zero pulse for specific applications

Order no.	
Frequency divider	8.FT.1D-1D <i>Scope of delivery</i> - Frequency divider - Manual

Connection technology	Order no.	
Cordset, pre-assembled	Sub-D female contacts, 9-pin, with cable outlet 70° single-ended 2 m [6.56'] PVC cable ¹⁾	8.0000.6V00.0002.0086
	Sub-D male contacts, 9-pin, with cable outlet 70° single-ended 2 m [6.56'] PVC cable ¹⁾	8.0000.6V00.0002.0082
Connector, self-assembly	Sub-D female contacts, 9-pin, with cable outlet 70°	8.0000.514B.0000
	Sub-D male contacts, 9-pin, with cable outlet 70°	8.0000.514A.0000

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.
You will find an overview of our systems and components for Functional Safety and the corresponding software in the safety technology section or under www.kuebler.com/safety.

1) Other lengths available.

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Technical data

Electrical characteristics		
Power supply	18 ... 30 V DC (residual ripple \leq 10 % at 24 V DC)	
Power consumption	at 18 V (encoder supply without load)	at 30 V
	approx. 250 mA	approx. 150 mA
Type of connection	screw terminal, 1.5 mm ²	
Encoder supply	output voltage	+5.5 V DC / \pm 5 %
	output current	max. 130 mA
	type of connection	Sub-D male contacts, 9-pin
Conformity and standards		
	EMC guideline 2014/30/EU	EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	RoHS guideline 2011/65/EU	EN 50581

Mechanical characteristics		
Material	housing	plastic
Mounting	35 mm DIN rail (acc. to EN 60715)	
Dimensions (W x H x D)	40 x 79 x 91 mm [1.57 x 3.11 x 3.58"]	
Protection	IP20	
Weight	approx. 200 g [7.05 oz]	
Working temperature	0°C ... +45°C [+32°F ... +113°F] non condensing	
Storage temperature	-25°C ... +70°C [-13°F ... +158°F] non condensing	
Failure rate (MTBF in years)	55.4 a continuous operation at 60°C [140°F]	

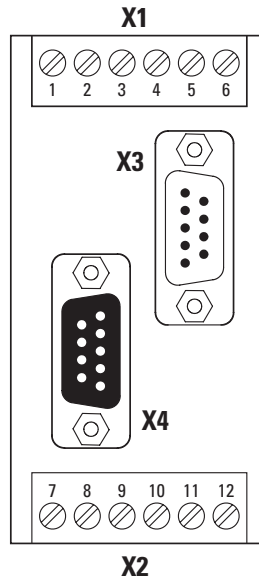
Incremental input		
Signal level	TTL / RS422 HTL	differential voltage $>$ 1 V LOW: 0 ... 4 V / HIGH: 10 ... 30 V
HTL internal resistance	$R_i \approx$ 4.7 kOhm	
Tracks	TTL / RS422, symmetrical HTL, asymmetrical	A, /A, B, /B, 0, /0 A, B, 0
Frequency	300 kHz	
Type of connection	TTL / RS422 HTL	Sub-D male contacts, 9-pin screw terminals, 1.5 mm ²

Incremental output		
Level	17 ... 29 V at HTL (depending on the supply voltage)	
Tracks	TTL / RS422, symmetrical HTL, asymmetrical	A, /A, B, /B, 0, /0 (5 V DC) A, B, 0
Output current	max. 20 mA / Push-Pull	
Type of connection	screw terminals, 1.5 mm ² Sub-D female contacts, 9-pin	

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Terminal assignment



Interface	Function	Screw terminals, 2 x 6-pin												
Connection X1, X2		Signal:	A	B	0	A	B	0	\bar{A}	\bar{B}	$\bar{0}$	0 V	+V	\perp
	Power supply	Pin:	-	-	-	-	-	-	-	-	-	10	11	12
	input HTL	Pin:	-	-	-	4	5	6	-	-	-	-	-	-
	Output HTL	Pin:	1	2	3	-	-	-	7	8	9	-	-	-

Interface	function	Sub-D male contacts, 9-pin									
Connection X3	Input TTL / RS422	Signal:	0 V	+V	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	-
		Pin:	5	4	3	2	1	9	7	6	8

Interface	Function	Sub-D female contacts, 9-pin									
Connection X4	Output TTL / RS422	Signal:	0 V	-	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	-
		Pin:	5	4	3	2	1	9	7	6	8

- +V: Power supply
- 0 V: Encoder power supply ground GND (0 V)
- A, \bar{A} : Incremental output channel A (Cosine)
- B, \bar{B} : Incremental output channel B (Sine)
- 0, $\bar{0}$: Reference signal

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Dimensions

Dimensions in mm [inch]

