Encoders

Magnetic Encoders

Features:
64 to 512 Pulses per revolution
2 Channels
Digital output

Series IE2 – 512

		IE2 – 64	IE2 – 128	IE2 – 256	IE2 – 512	
Pulses per revolution	N	64	128	256	512	
Signal output (quadrature)		2				channels
Supply voltage	V_{DD}	4.5 to 5.5				V DC
Current consumption, typical (V_{DD} = 5 V DC)	I_{DD}	typ. 6, max. 12				mA
Output current, max. [1]	I_{OUT}	5				mA
Pulse width	P	180 ± 45				°e
Phase shift, channel A to B	Φ	90 ± 40				°e
Signal rise/fall time, max. (C_{LOAD} = 50 pF)	tr/tf	0.1 / 0.1				µs
Frequency range [2], up to	f	20	40	80	160	kHz
Inertia of code disc	J	$1.275 \cdot 10^{-6}$				oz-in-sec^2
Operating temperature range		– 25 to +85 (– 13 to +185)				°C (°F)

[1] V_{DD} = 5 V DC: Low logic level < 0.5 V, high logic level > 4.5 V: CMOS and TTL compatible
[2] Velocity (rpm) = f (Hz) x 60/N

Ordering information

Encoder	number of channels	pulses per revolution	in combination with
IE2 – 64	2	64	DC Micromotors series
IE2 – 64	2	64	1336...C,
IE2 – 64	2	64	1516...SR, 1524...SR,
			1717...SR, 1724...SR, 1727...C
IE2 – 128	2	128	2224...SR, 2342...CR,
IE2 – 128	2	128	2642...CR, 2657...CR,
IE2 – 128	2	128	3242...CR, 3257...CR, 3863...C
IE2 – 256	2	256	Brushless DC-Servomotors series
IE2 – 256	2	256	1628...B, 2036...B, 2444...B
IE2 – 256	2	256	
IE2 – 512	2	512	
IE2 – 512	2	512	
IE2 – 512	2	512	

Features

These incremental shaft encoders in combination with the FAULHABER DC-Micromotors and brushless DC-Servomotors are used for indication and control of both, shaft velocity and direction of rotation as well as for positioning.

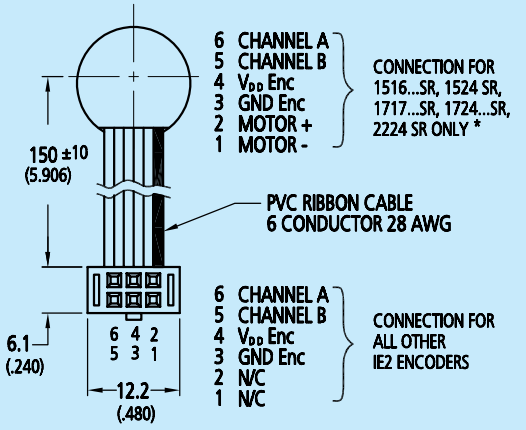
The encoder is integrated in the DC-Micromotors SR-Series and extends the overall length by only 1.4 mm (0.06 in.) and built-up option for DC-Micromotors and brushless DC-Servomotors.

Hybrid circuits with sensors and a low inertia magnetic disc provide two channels with 90° phase shift.

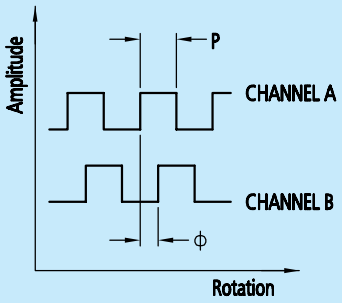
The supply voltage for the encoder and the DC-Micromotor as well as the two channel output signals are interfaced through a ribbon cable with connector.

Details for the DC-Micromotors and suitable reduction gearheads are on separate catalog pages.

Output signals / Circuit diagram / Connector information



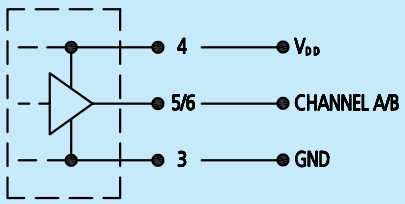
IDC Connector
DIN-41651
grid 2.54 (.100)



Admissible deviation of phase shift:

$$\Delta\Phi = \left|90^\circ - \frac{\Phi}{P} * 180^\circ\right| \leq 45^\circ$$

Output signal
with clockwise rotation as seen from the shaft end

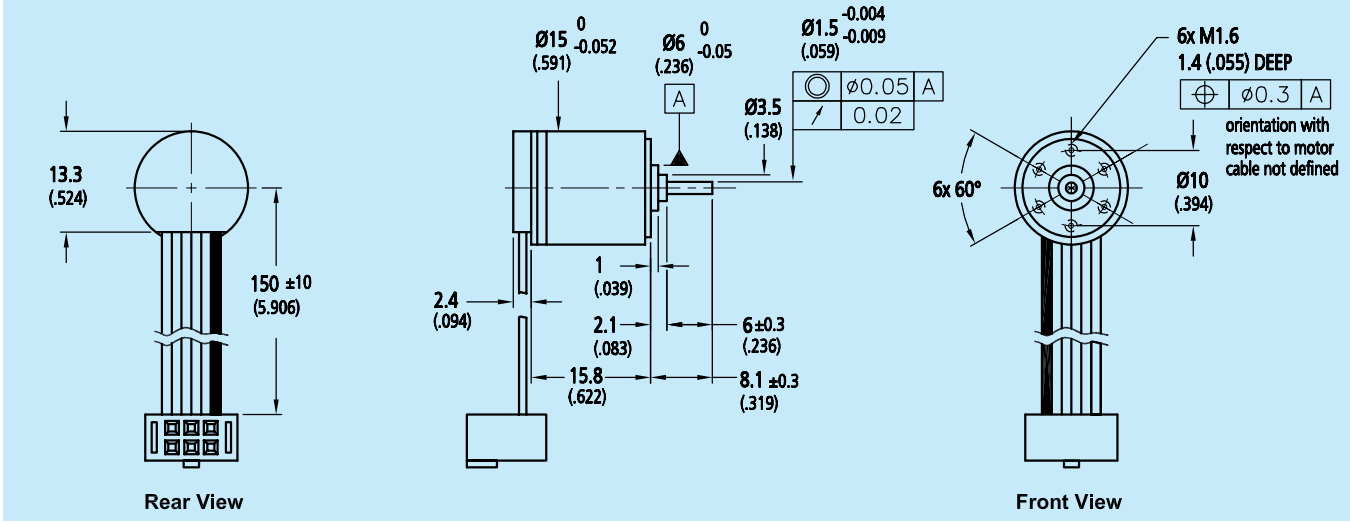


***Output circuit**
Note: motor terminals resistance increases by approx. 0.4 Ω

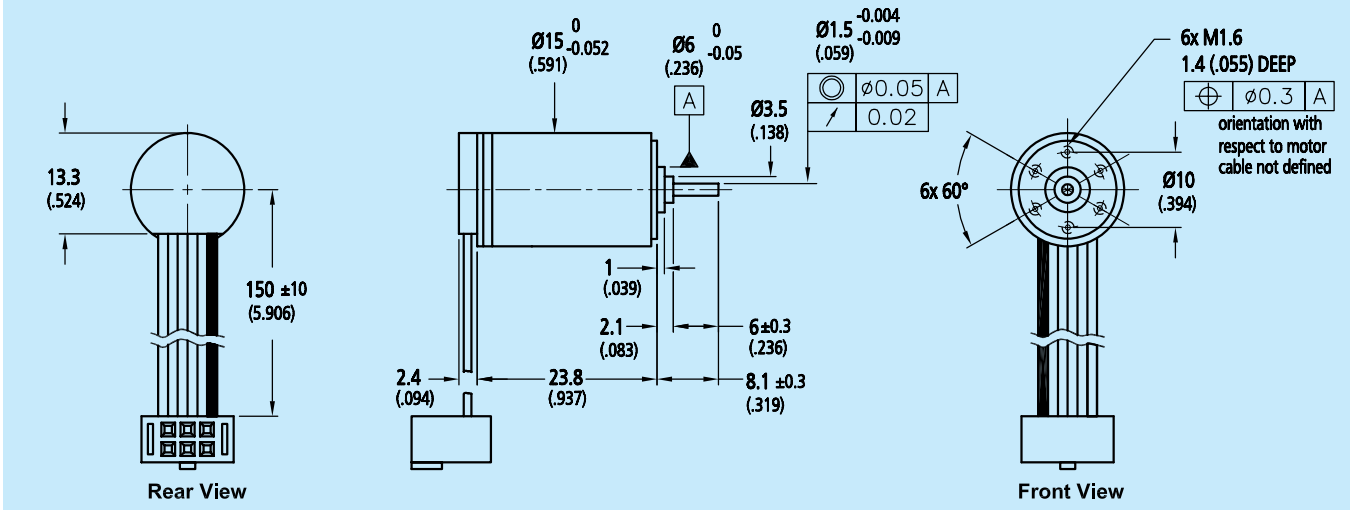
For notes on technical data refer to "Technical Information". Specifications subject to change without notice. MME0404

Series IE2 – 512

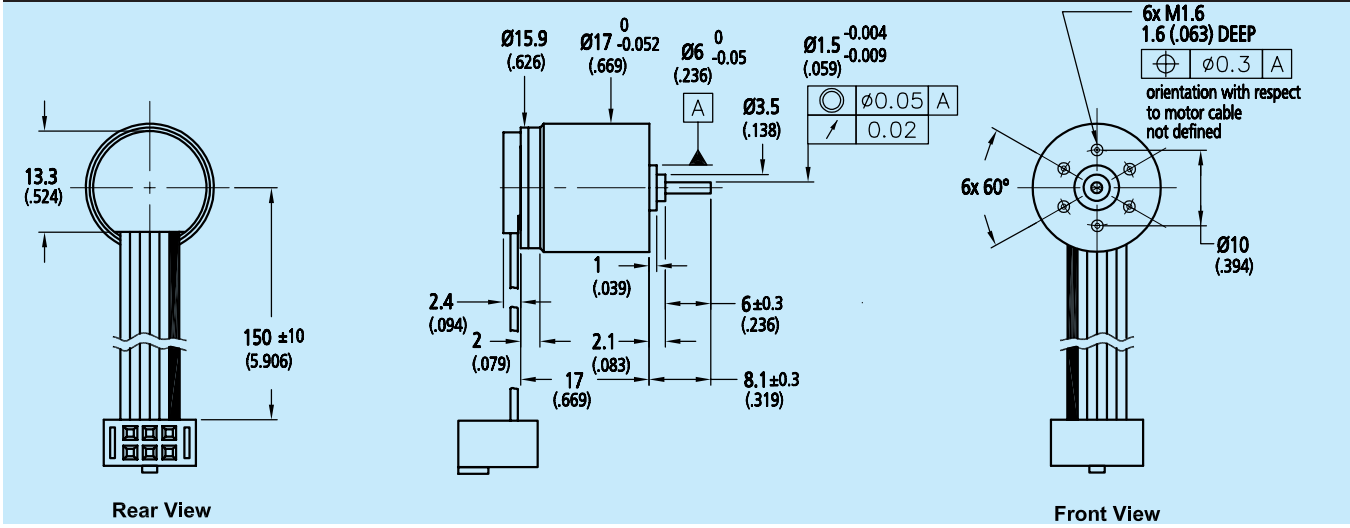
DC-Micromotor 1516 T ... SR with Encoder IE2 – 16 ... 512



DC-Micromotor 1524 T ... SR with Encoder IE2 – 16 ... 512



DC-Micromotor 1717 T ... SR with Encoder IE2 – 16 ... 512



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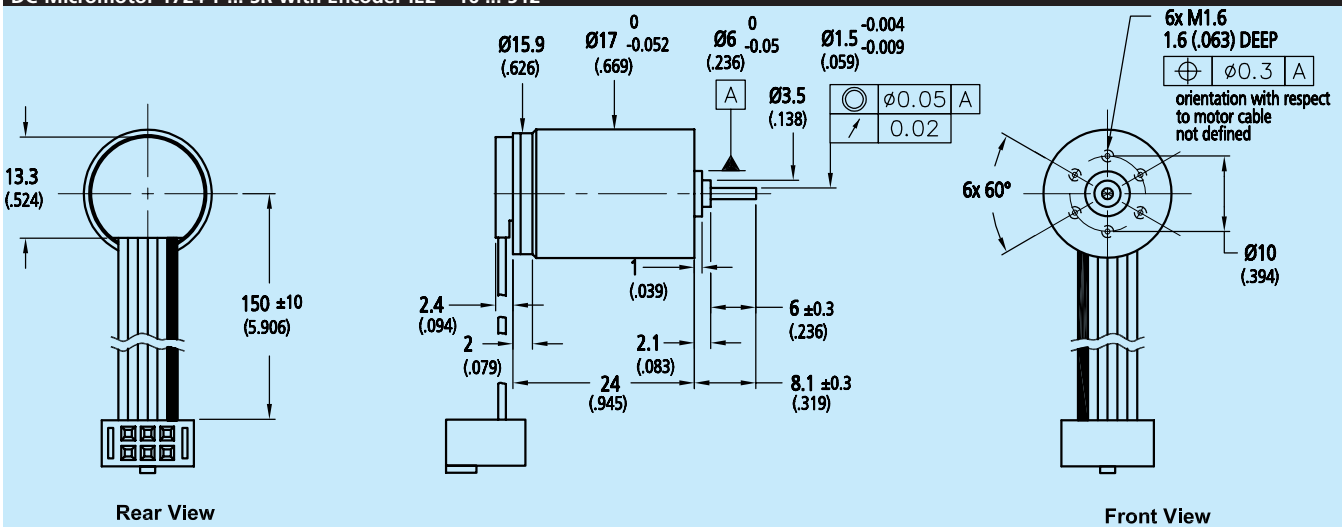
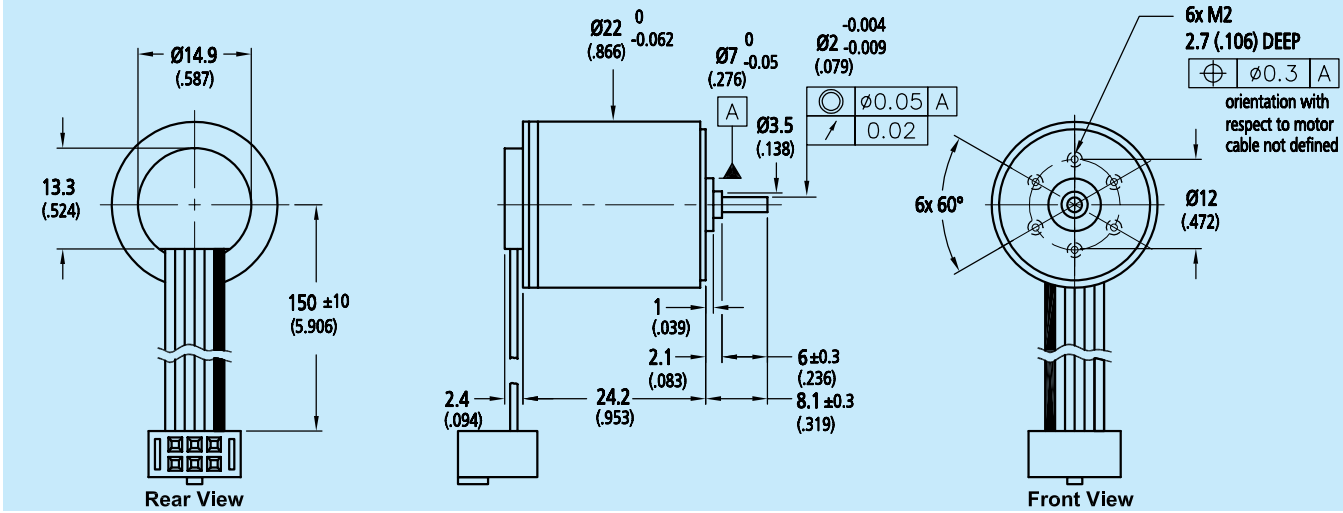
Series IE2 – 512

DC-Micromotor 1724 T ... SR with Encoder IE2 – 16 ... 512



DC-Micromotor 2224 U ... SR with Encoder IE2 – 16 ... 512



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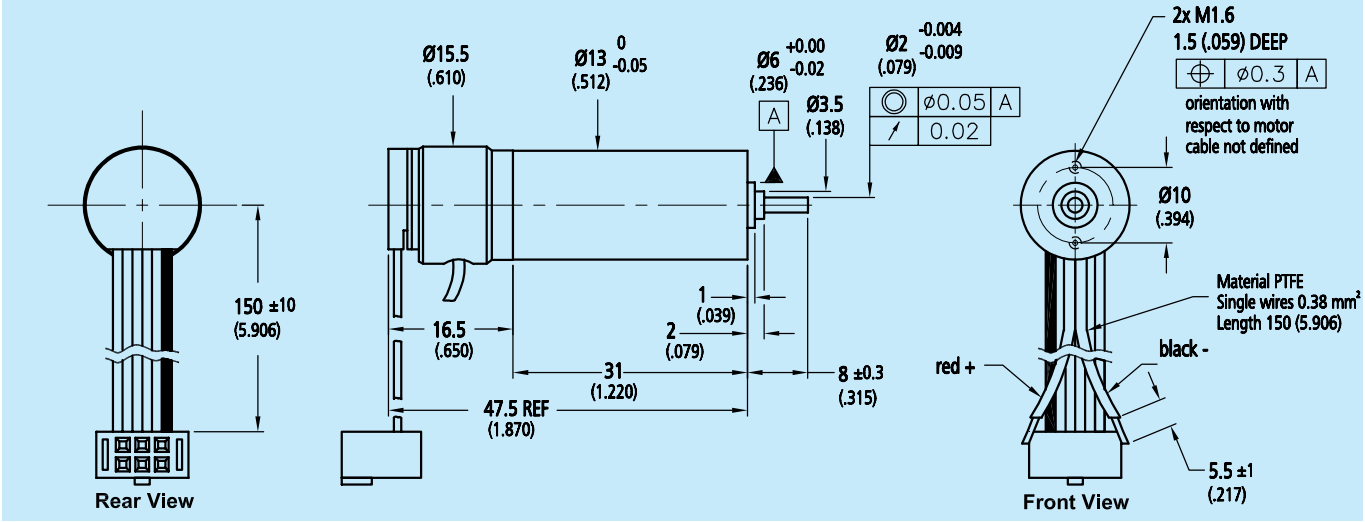
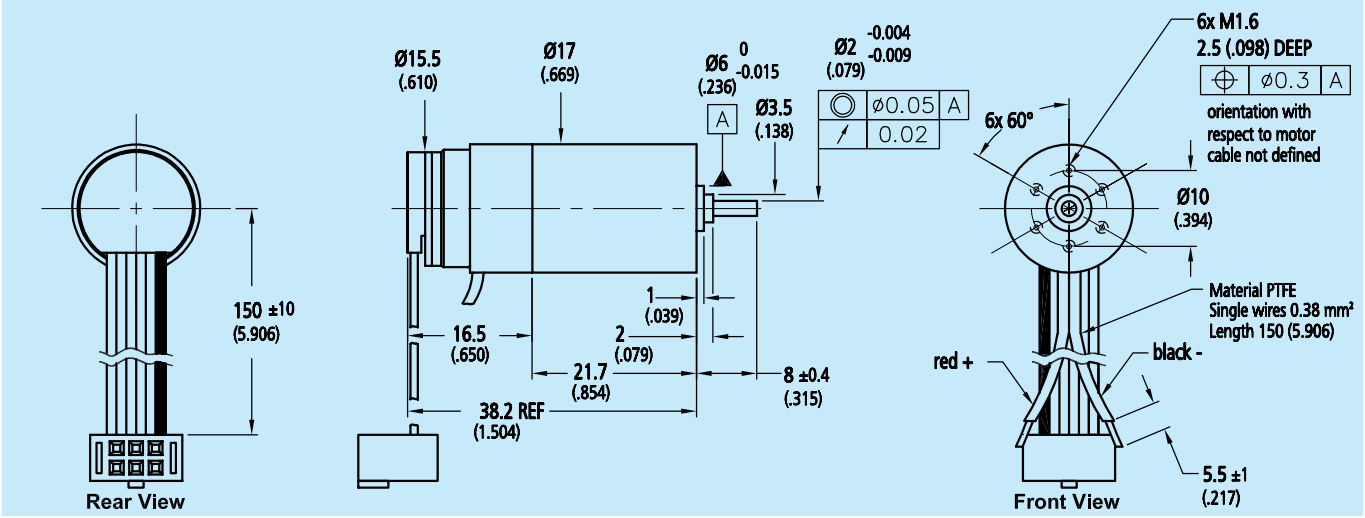
Series IE2 – 512

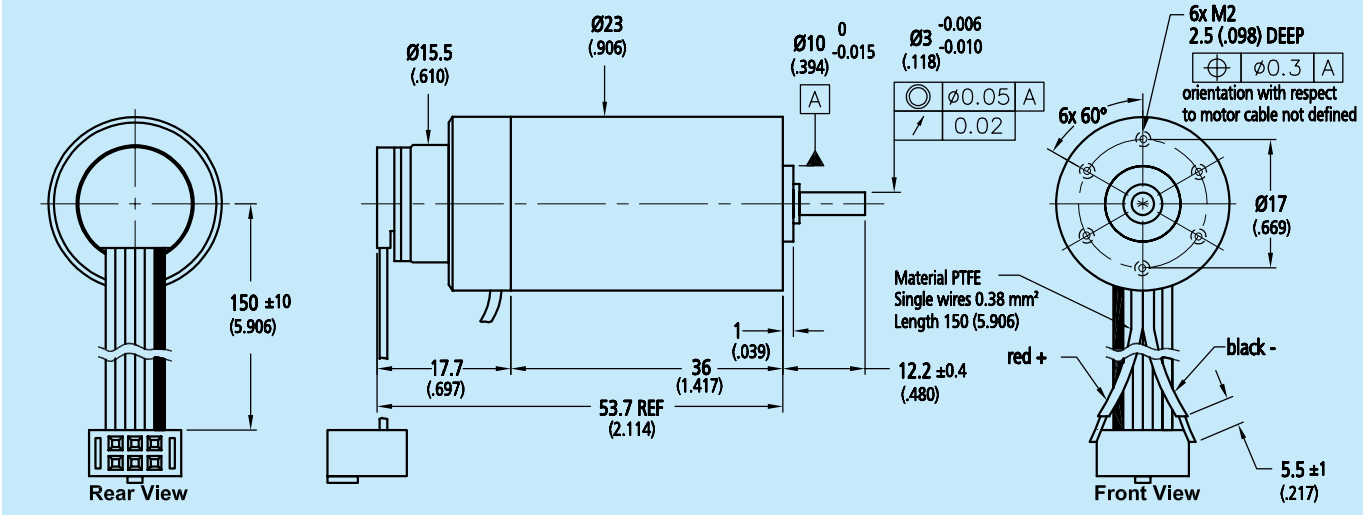
DC-Micromotor 1336 U ... C - 123 with Encoder IE2 – 64 ... 512



DC-Micromotor 1727 U ... C - 123 with Encoder IE2 – 64 ... 512



DC-Micromotor 2342 S ... CR with Encoder IE2 – 64 ... 512



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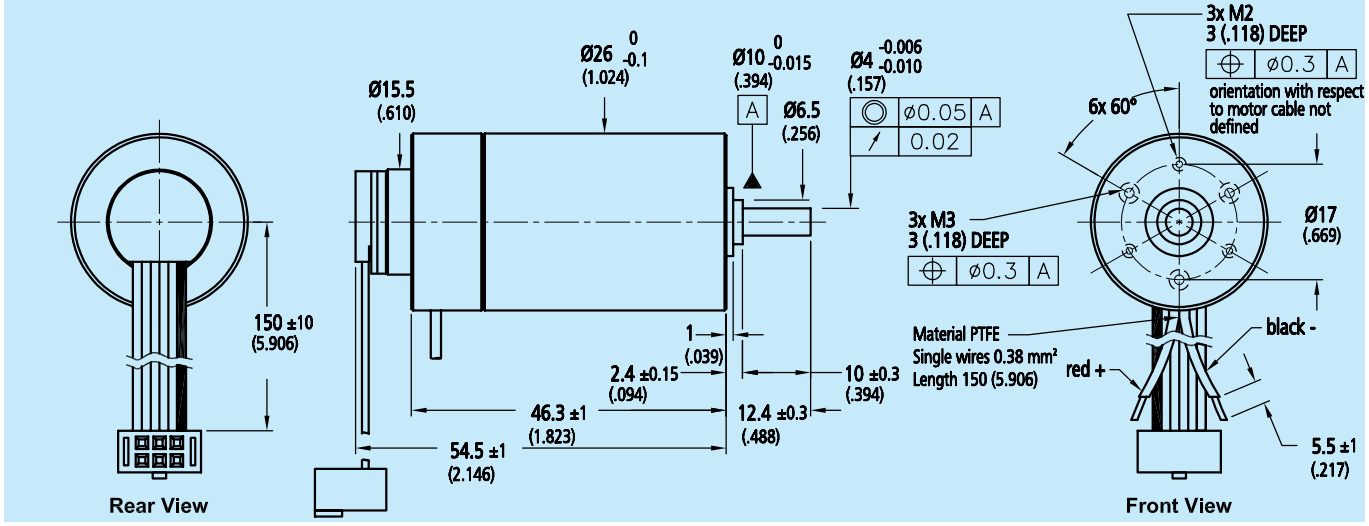
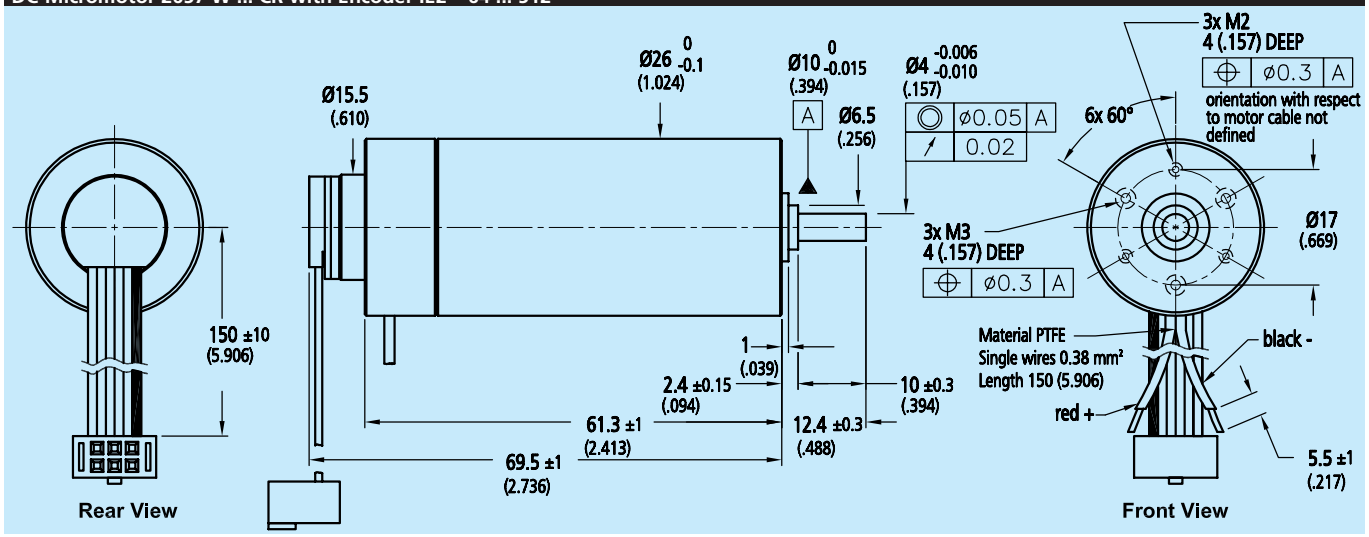
Series IE2 – 512

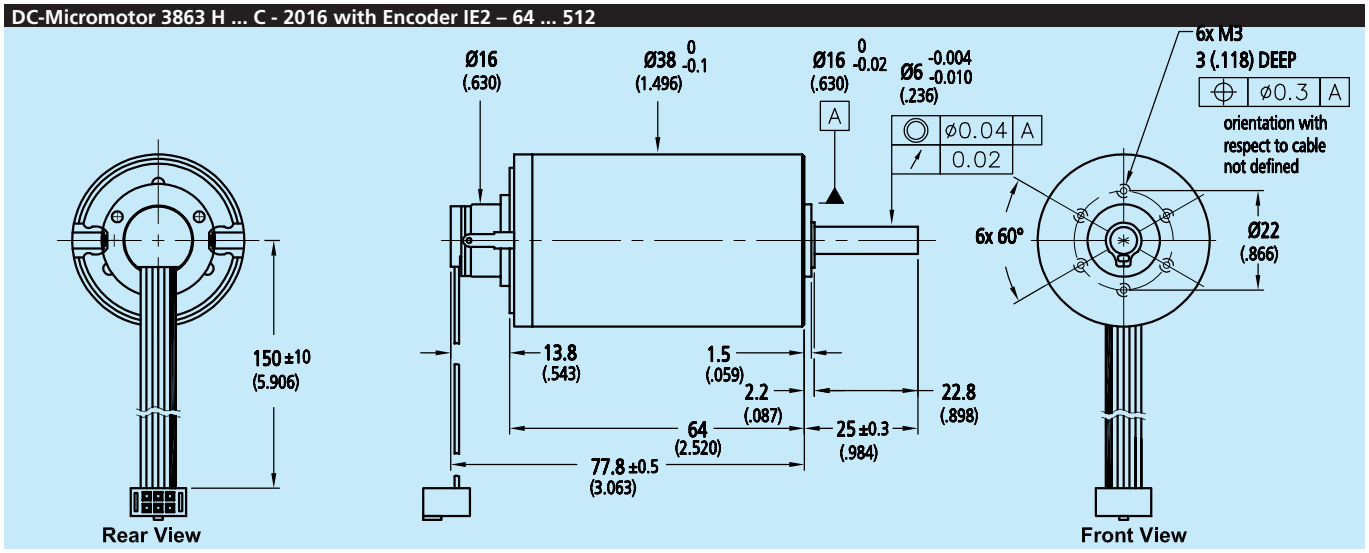
DC-Micromotor 2642 W ... CR with Encoder IE2 – 64 ... 512



DC-Micromotor 2657 W ... CR with Encoder IE2 – 64 ... 512



DC-Micromotor 3863 H ... C - 2016 with Encoder IE2 – 64 ... 512



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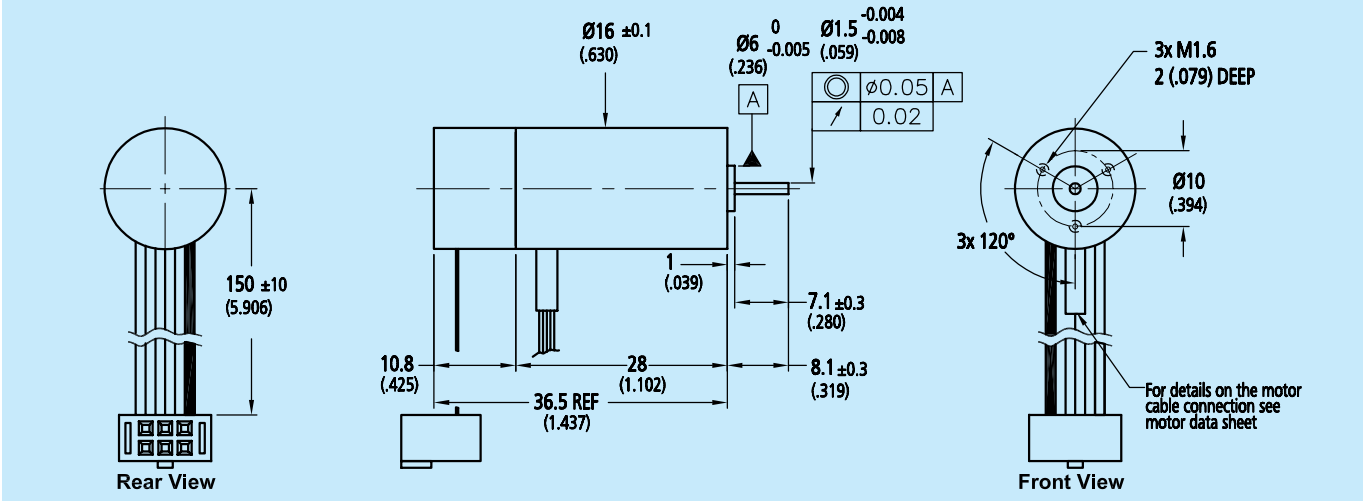
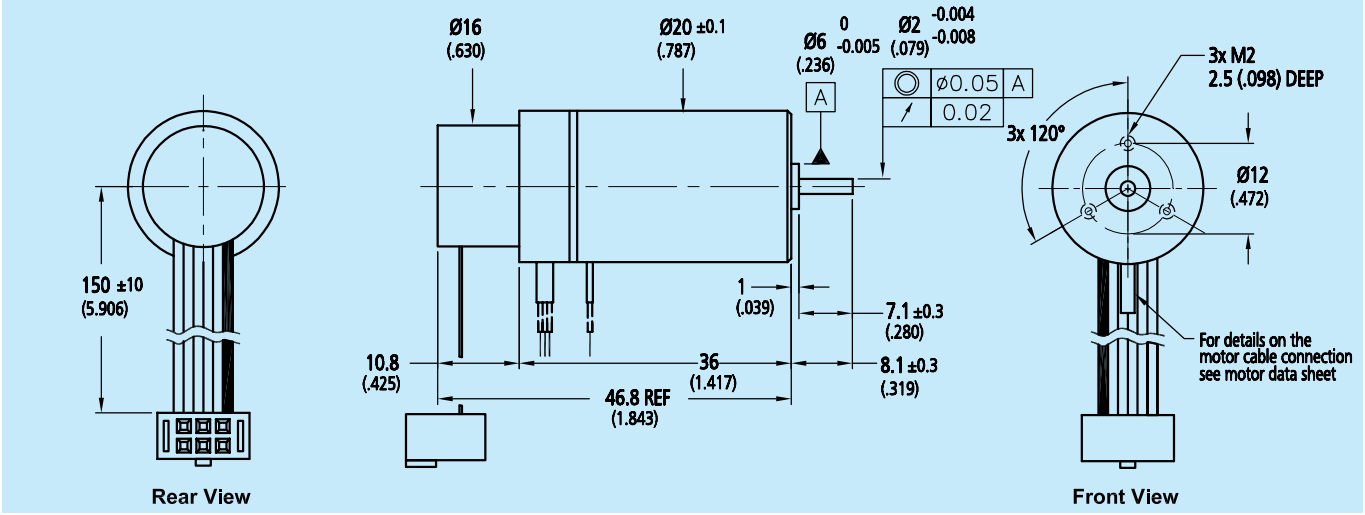
Series IE2 – 512

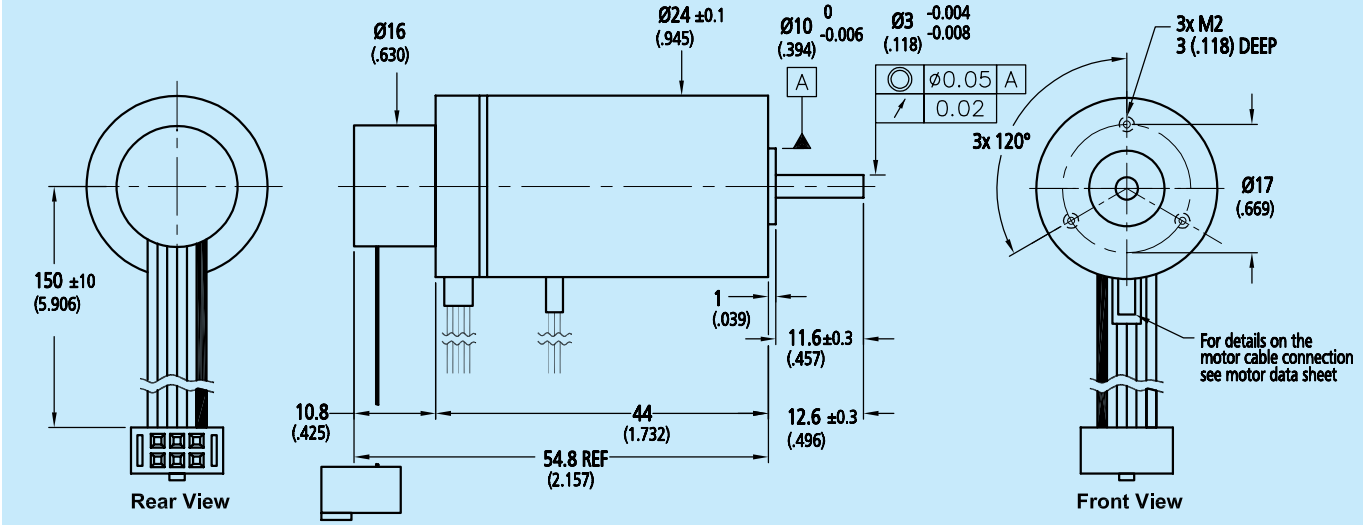
Brushless DC-Servomotor 1628 T ... B K313 with Encoder IE2 – 64 ... 512



Brushless DC-Servomotor 2036 U ... B K313 with Encoder IE2 – 64 ... 512



Brushless DC-Servomotor 2444 S ... B K313 with Encoder IE2 – 64 ... 512



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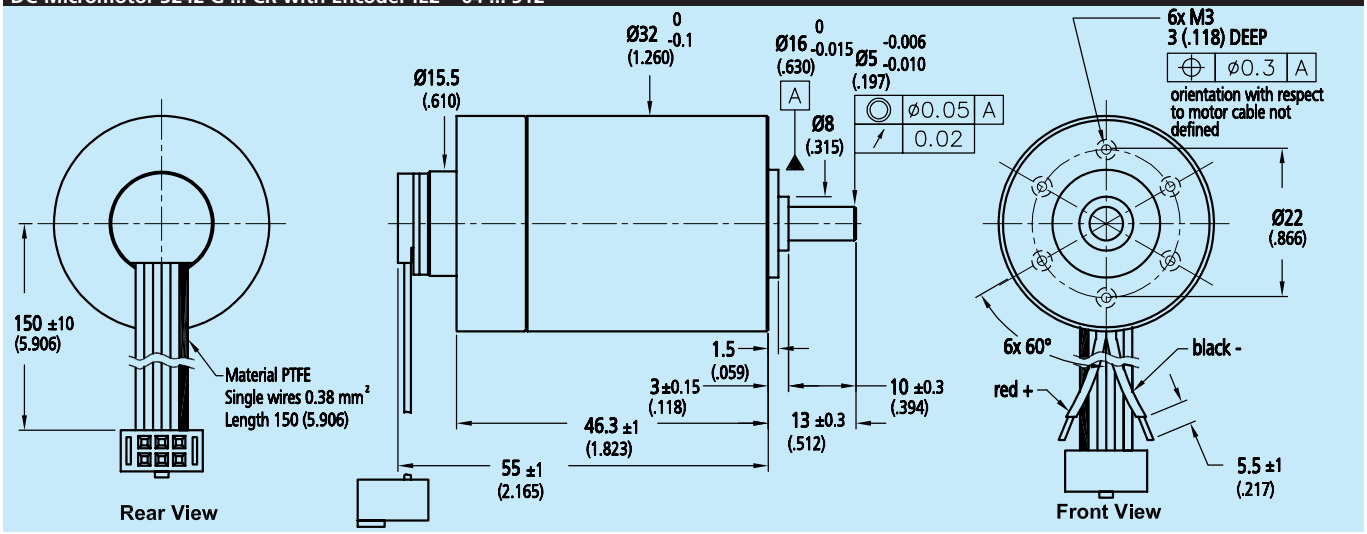
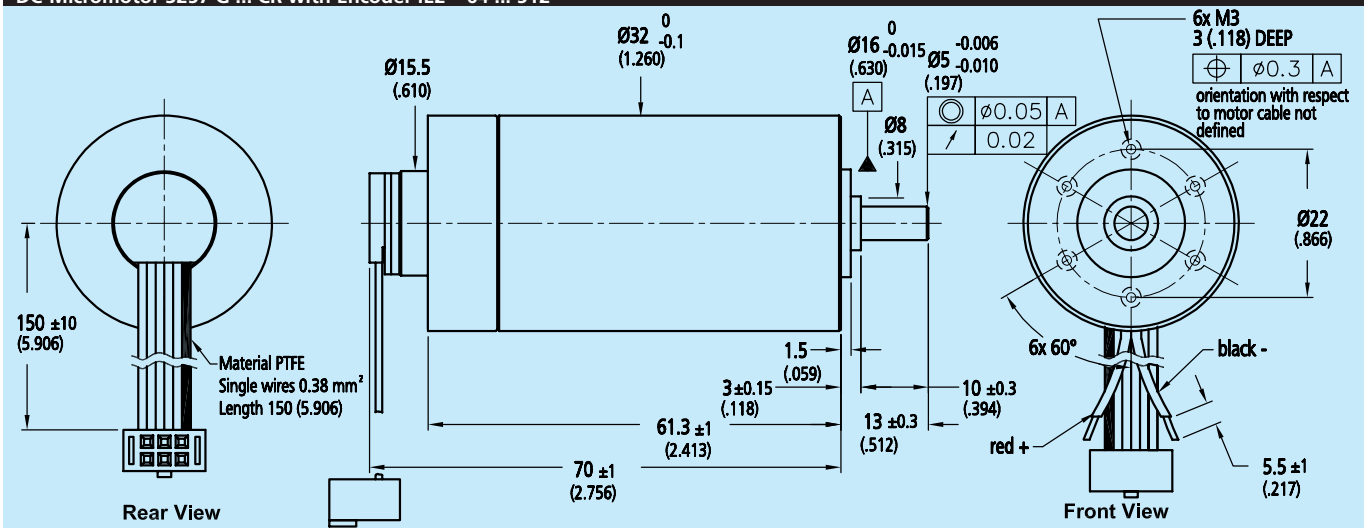
Series IE2 – 512

DC-Micromotor 3242 G ... CR with Encoder IE2 – 64 ... 512



DC-Micromotor 3257 G ... CR with Encoder IE2 – 64 ... 512



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