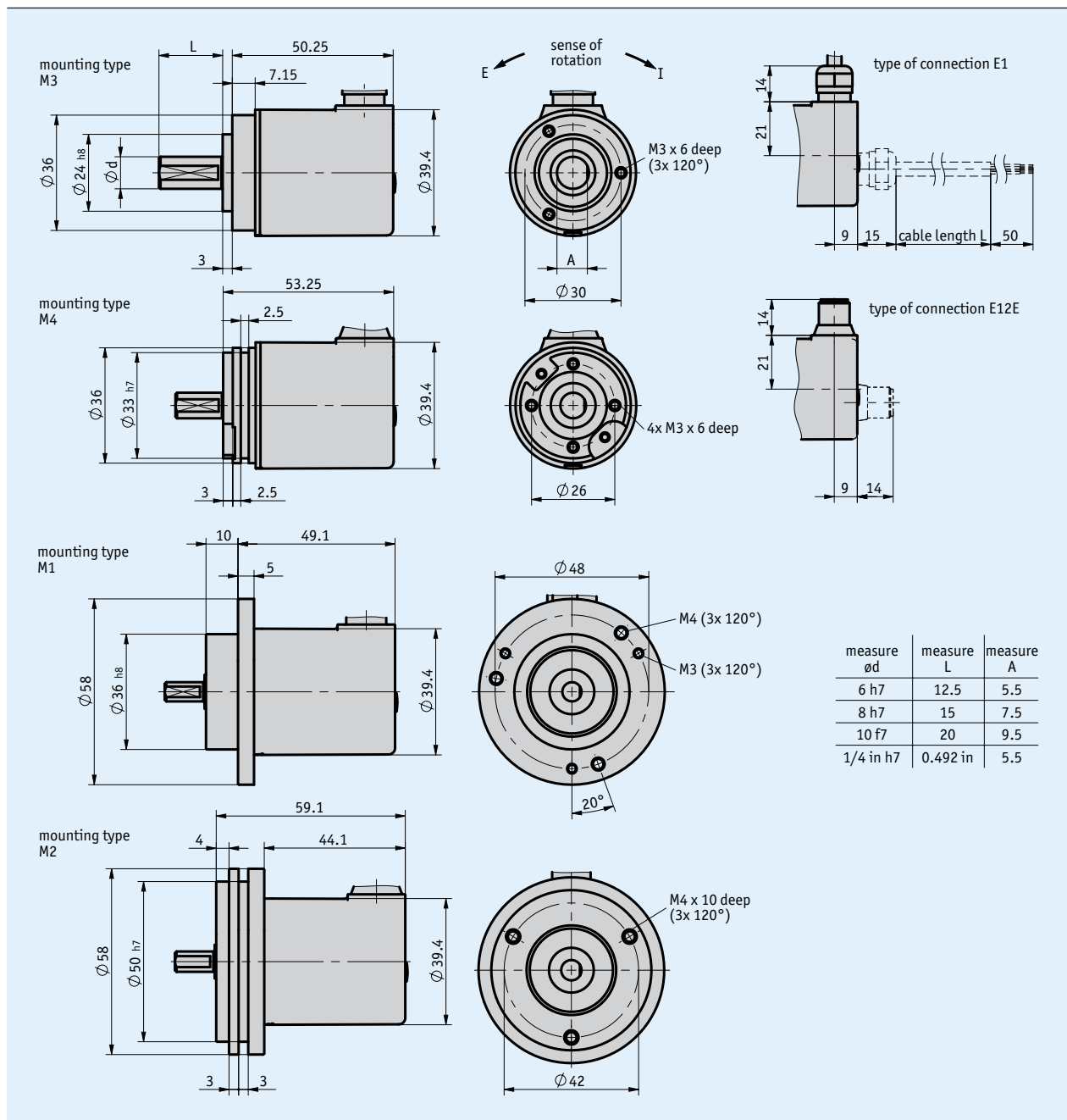


Absolute encoder AV3650M

Compact rotary encoder with solid shaft and analog interface

Profile

- Absolute wear-free magnetic encoder
- Multiturn without gearbox and without battery
- Current or voltage output interfaces
- Extremely compact and very robust design
- IP67 protection class
- Extensive temperature range -40 ... 85° C
- Optimal price-performance ratio



Mechanical data

Feature	Technical data	Additional information
Shaft	rustproof stainless steel	
Flange	aluminum	
Housing	zinc die-casting	
Speed	6000 rpm	at protection class IP65 with mounting type M3, M4, transient for ≤10 min
	3000 rpm	at protection class IP65 with mounting type M3, M4, continuous operation
	4000 rpm	at protection class IP67 or mounting type M1, M2, transient for ≤10 min
	2000 rpm	at protection class IP67 or mounting type M1, M2, continuous operation
Starting torque	<0.007 Nm at 20 °C	at protection class IP65 with mounting type M3, M4
	<0.01 Nm at 20 °C	at protection class IP67 with mounting type M3, M4
	<0.01 Nm at 20 °C	at mounting type M1, M2
Shaft load rating	40 N	radial, mounting type M3, M4
	20 N	axial, mounting type M3, M4
	80 N	radial, mounting type M1, M2
	40 N	axial, mounting type M1, M2
Cable sheath	PVC	ø6.2 ±0.2 mm
Cable bending radius	60 mm	static
	130 mm	dynamic
Mounting type	clamping flange joint ø58 mm	mounting type M1
	servo flange ø58 mm	mounting type M2
	clamping flange joint ø36 mm	mounting type M3
	servo flange ø36 mm	mounting type M4
Weight	~0.2 kg	

Electrical data

Feature	Technical data	Additional information
Operating voltage	10 ... 30 V DC	at output 0 ... 5 V, reverse polarity protected, power supply unit corresponds to Class 2 (UL 1310)
	15 ... 30 V DC	at output 0 ... 10 V, reverse polarity protected, power supply unit corresponds to Class 2 (UL 1310)
	10 ... 30 V DC	at output 4 ... 20 mA, but UB > Uload +2.0 V, reverse polarity protected, power supply unit corresponds to Class 2 (UL 1310)
Current consumption	≤30 mA	without load
Parameter storage	10 ⁴ cycles	also applies to calibration operations
Inputs	2	limit inputs, high active
Input signal level high	+UB	≥1 s
Status display	two-color LED (red/green)	device status
Output voltage	0 ... 5 V	load ≥500 Ω
	0 ... 10 V	load ≥1000 Ω
Output current	4 ... 20 mA	load ≤900 Ω, at 24 V DC
Temperature drift	<100 ppm/K	
Cycle time	1 ms	
Starting time	<1 s	
Settling time	<1 ms	at output 0 ... 5 V and 0 ... 10 V, load = 1000 Ω, 25° C
	<1 ms	at output 4 ... 20 mA, load = 900 Ω, 25° C
Type of connection	1x M12 connector (A-coded)	5-pole, 1x pin, E12E connection type
	open cable end	E1 connection type

System data

Feature	Technical data	Additional information
Scanning	magnetic	
Resolution	11 bit	at 0 ... 5 V, analog output FS
	12 bit	at 0 ... 10 V, 4 ... 20 mA, analog output FS
System accuracy	±1°	
Repeat accuracy	±0.2°	
Measuring range	≥22.5°	
	65536 revolution(s)	16 bit, factory setting 16 rotation(s)
Approval	UL	UL 61010-1, File No. E503367

Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-40 ... 85 °C	
Storage temperature	-40 ... 85 °C	
Relative humidity	93 %	condensation inadmissible
EMC	DIN EN 61326-1	immunity requirement of industry
	DIN EN 61000-4-2, -3, -6, -8	interference resistance / immission
	DIN EN 61000-4-4, -5	burst / surge
	DIN EN 61000-6-4	emitted interference / emission
	DIN EN 55011 Class B	radiation emission / radio interference suppression
Safety regulations	UL 61010-1	Indoor use, outdoor use possible, not intended for use involving direct exposure to UV light. Environment dry / wet. Protection class III as per EN 61140. Pollution degree 2 as per EN 61010. Maximum humidity 93% at 40 °C.
Protection category	IP65	EN 60529 (protection type not yet reviewed by UL)
	IP67	EN 60529 (protection type not yet reviewed by UL)
Shock resistance	2500 m/s ² , 6 ms	EN 60068-2-27
Vibration resistance	300 m/s ² , 10 ... 2000 Hz	EN 60068-2-6

Pin assignment

■ E12E

Signal	PIN
Iout/Uout	1
+UB	2
GND	3
Limit 2	4
Limit 1	5

■ E1

Signal	Color
Iout/Uout	green
+UB	brown
GND	white
Limit 2	pink
Limit 1	gray

Order

Ordering table

Feature	Ordering data	Specification	Additional information	
Interface	0/5V	A	0 ... 5 V voltage output	
	0/10V		0 ... 10 V voltage output	
	4/20mA		4 ... 20 mA current output	
Shaft diameter x length	6x12.5	B	ø6 mm x 12.5 mm	
	8x15		ø8 mm x 15 mm	
	10x20		ø10 mm x 20 mm	
	1/4x0.492		ø1/4 in x 0.492 in	
Mounting type	M1	C	clamping flange joint ø58 mm	
	M2		servo flange ø58 mm	
	M3		clamping flange joint ø36 mm	
	M4		servo flange ø36 mm	
Protection category	IP65	D	IP65	
	IP67		IP67	
Position of electrical connection	A	E	axial	
	R		radial	
Type of connection	E1	F	open cable end	
	E12E		plug	
Cable length	...	G	01.0, 02.0, 03.0, 05.0, 10.0 in m	only with connection type E1
	OK		without cable	only with connection type E12E

Order key

AV3650M - - 65536 - - - - - - - -

A B C D E F G

Scope of delivery: Quick Start Guide, AV3650M

Accessories:

Cable extension KV0550

Mating Connector Overview

Mating connector, 5-pole, socket

Mating connector, 5-pole, angle socket

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Order key 84109

Order key 83006