DALMATIC

MULTI AND SINGLE TURN   HIGH RESOLUTION   COMPACT DESIGN   RS485

MTM-E-V.0 MULTITURN MAGNETIC ABSOLUTE ENCODER

Remembers the position when power is away with a built in special long-life lithium battery. Waterproof.

Dimensions 73x45x36 mm, magnetic absolute multi turn encoder with high resolution 720 steps per turn (0,5 angle degree). Data communication RS485 serial bidirectional master and slave 19.2k Baud (encoder = slave). Power supply 10-30 Vdc and 30 mA power consumption. Long battery life time up to 10 years depending on usage. Moulded electronic circuit for humidity and vibration protect.
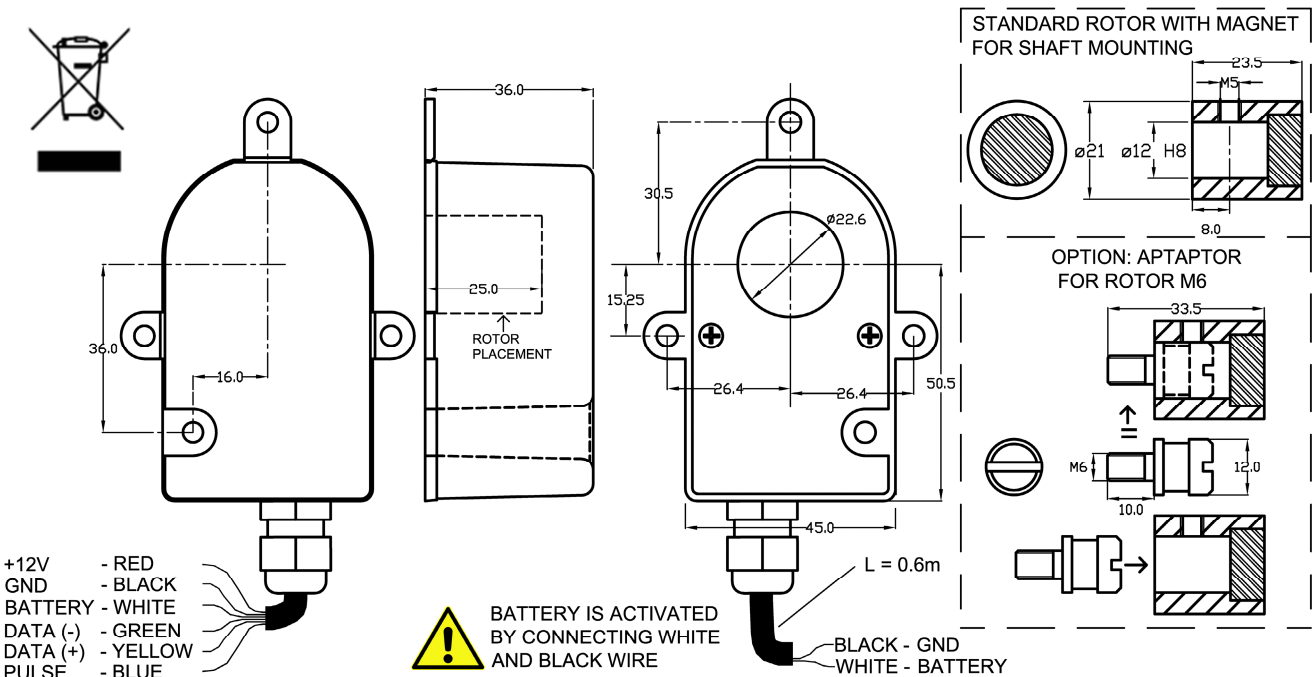

Patent pending

Specifications	Multiturn	Singleturn
Max speed motor shaft (RPM)	6000	500
Max acc. Of shaft from one RPM without supply	100 Rad/s^2	100 Rad/s^2
Max turns	65536	-
Pulse output	4 pulses/rev open collector	-
Temperature	-25 - + 70 C^0	-25 - + 70 C^0

Startup/reset: Encoder internal battery is connected when black and white wire is short-circuit to each other. Reset of encoder can be done by separating black and white wire for a few seconds.

By option cable solution with connector, battery will be automatic connected.

⚠️ **Do not** short-circuit white wire from encoder to other encoder wires, when encoder is placed on stock to prevent discharging the battery.

STANDARD ROTOR WITH MAGNET FOR SHAFT MOUNTING

OPTION: APTAPTOR FOR ROTOR M6

+12V   - RED
GND   - BLACK
BATTERY - WHITE
DATA (-) - GREEN
DATA (+) - YELLOW
PULSE   - BLUE

ROTOR PLACEMENT

⚠️ BATTERY IS ACTIVATED BY CONNECTING WHITE AND BLACK WIRE

L = 0.6m

BLACK - GND
WHITE - BATTERY

PROTOCOL DESCRIPTION (RS485)

Encoder waits for a request and will answer directly if the request is identified correct. (Encoder is slave). The encoder will only respond if supply 10-30 Vdc is connected. Baud-rate is 19200, 8 data bit, 1 stop bit, no parity bit.

Minimum request time (between 2 requests) is 6.4 mSec. RS485 bus line must be released 40 to 90 uSec. after last stop bit.RS485 bus line must first be taken over minimum 50 uSec. after last stop bit.RS485 bus line sending must first take place after 50 uSec. after the bus is taken over.

Request telegrams

Mode	Description	Word	Comment
Byte 0	Position request	A0hex	Respond 5 bytes: 4 bytes position + 1 byte checksum (Xor) *
Byte 0	Actual encoder battery voltage	A5hex	Respond 5 bytes: 4 bytes + 1 byte checksum (Xor) *
Byte 0	Lowest measured battery voltage	A6hex	Respond 5 bytes: 4 bytes + 1 byte checksum (Xor) *
Byte 0	Request about battery alarm	A7hex	Respond 5 bytes: 4 bytes + checksum, Alarm = 1, OK = 0
Byte 0	Reset of battery alarm	A8hex	Respond 5 bytes: 4 bytes + checksum, Responds = 0

Respons telegram – position

Mode	Description	Word	Comment
Byte 0	Position least significant byte	??hex	Position (unsigned int32) 0 – 4.294.967.296 dec.
Byte 1	Position	??hex	By maximum roll over, the position will start from 0 again
Byte 2	Position	??hex	
Byte 3	Position most significant byte	??hex	
Byte 4	Checksum	??hex	* Xor checksum of byte 0 , byte 1, byte 2, byte 3.

Respons telegram – battery voltage

Mode	Description	Word	Comment
Byte 0	Units - least significant byte	??hex	4.6mV/units.
Byte 1	Units – most significant byte	??hex	Example: 3.6 V = 784. (minimum value is 630 = 2.9 V)
Byte 2	-	00hex	
Byte 3	-	00hex	
Byte 4	Checksum	??hex	* Xor checksum of byte 0 , byte 1, byte 2, byte 3.

! if battery is low by powerup the encoder will not respond a request

EXAMPLES OF USE OF ABSOLUTE ENCODER

Door operator with electronic limits

High speed door drives with electronic limits

CABLE OPTIONS

Part Number 60000901

Standard encoder
Cable length 0.6m

Part Number 60000902

Option: Special encoder with M12 plug-in IP65 panel male connector and extention cable with IP65 female connector. Female M12 connector is with build-in jumper for automatic battery connection.

Extention cables with M12 female
5m - Part Number 60000915
7m - Part Number 60000916
10m - Part Number 60000917