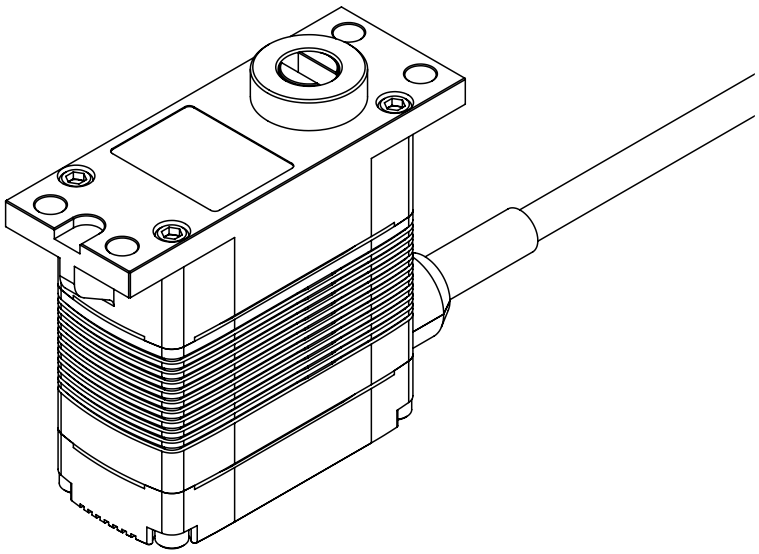
DA 15-T
Technical Specification



DA 15-T-06-BLDC-1000
DA 15-T-12-BLDC-1000

Content

1. General Description

The DA 15-T is our smallest and lightest fly-by-wire actuator for direct installation onto the throttle valve shaft of a combustion engine. This eliminates the need for linkage rods or bowden cables, shortens the installation time and minimizes the installation space and overall weight!

Its brushless motor and contactless, wear free position detection make the DA 15-T immune to vibrations. Designed for use at high temperatures, only components with extended temperature range were put to use. The connection cable is shielded and aviation specified.

The servo is fully programmable. Our PC programming tool permits teaching of the idle and full throttle positions. These are assigned to configurable position feedback voltages. Teaching the idle and full throttle position makes it possible to replace a throttle valve servo or a throttle-servo unit without the need to reconfigure the engine control unit.

Advantages of the throttle valve actuator:

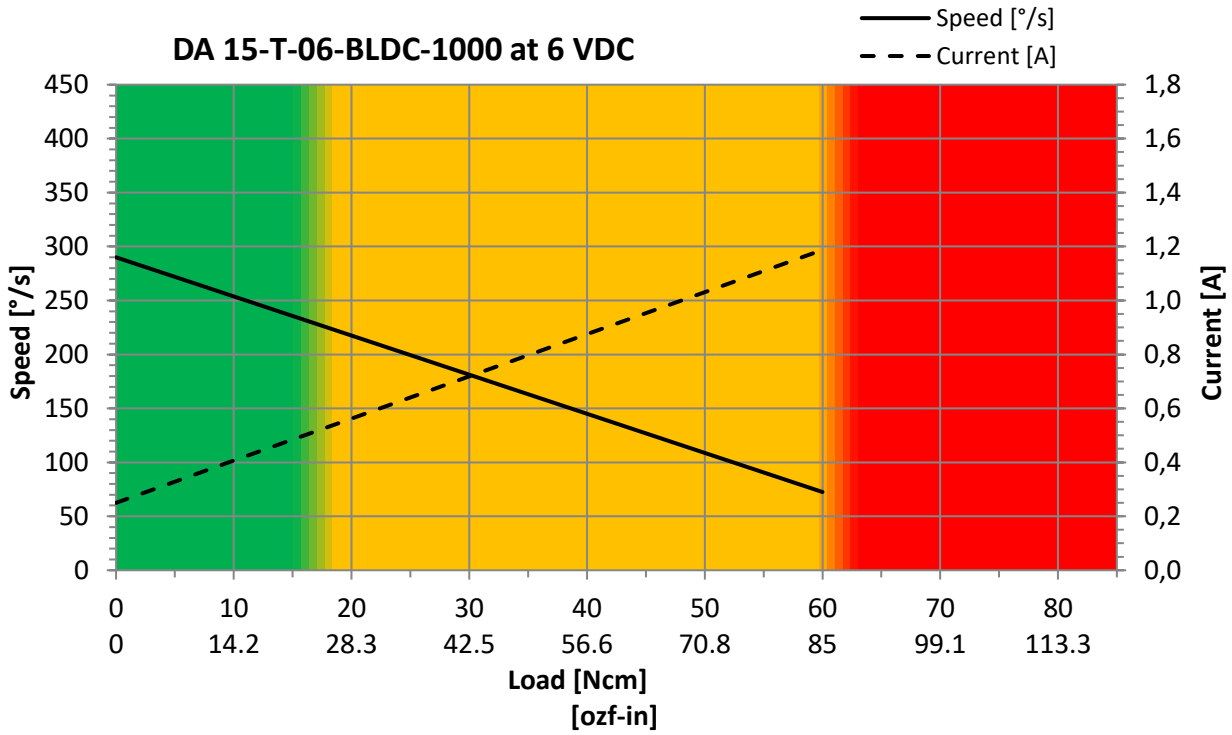
- Maximized service life through vibration-resistant, brushless DC motor
- Brushless technology eliminates the typical electromagnetic noise of brush-type motors
- Contactless, wear free position detection
- Aluminum housing with minimal weight and size in functional design with integrated adapter bracket for directly flanging to the throttle valve shaft
- The saltwater-resistant, HART-coat treated aluminum housing withstands at least 100 hours of saltwater spray without damage and meets the IP-67 standard for water and dust protection
- Good resistance to electromagnetic interference achieved with aluminum housing, low interference emission through brushless motor
- Several programming possibilities, e.g. overload protection for the internal electric motor, which enables powering down the current consumption in the blocked state.

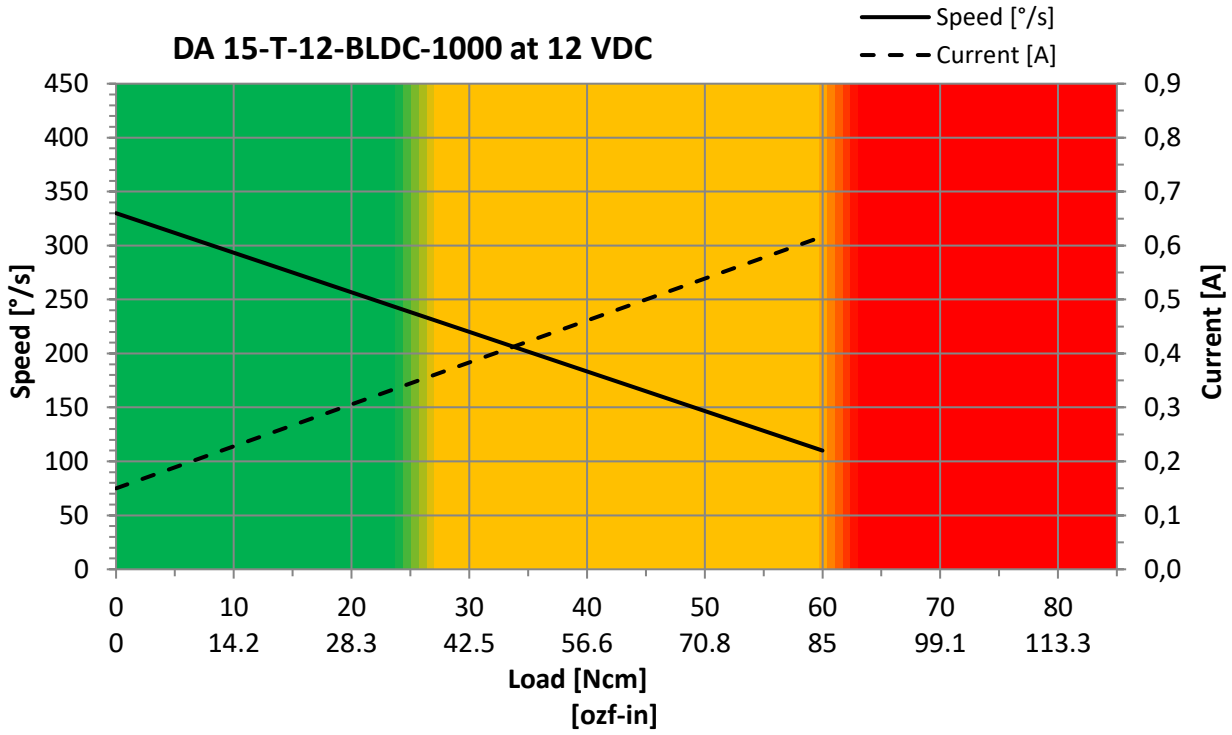
2. Operating Data

		DA 15-T-06-...	DA 15-T-12-...
Supply Voltage (rated)		6 VDC	12 VDC
Supply Voltage Range		5 ... 9 VDC	10 ... 16 VDC
Standby Current [1]	at rated voltage	50 mA	50 mA
Rated Current [1]	at rated voltage	0.5 A	0.35 A
Peak Current [1]	at rated voltage	1.5 A	0.85 A
Rated Torque [1]	at rated speed	16 Ncm (22.7 ozf-in)	25 Ncm (35.4 ozf-in)
Peak Torque [1]	at rated voltage	60 Ncm (85 ozf-in)	60 Ncm (85 ozf-in)
No Load Speed [1]	at rated voltage	290 °/s	330 °/s
Rated Speed [1]	at rated torque	235 °/s	240 °/s
Default Travel Angle		±45° = 90° total travel	
Max. Travel Angle [2]		±50° = 100° total travel	
Backlash (mechanical)		≤ 0.9°	
Position Error under Temperature [3]		≤ ±1.0°	
Operating Temperature Range [4]		-30°C ... +70°C (-22°F ... +158°F)	
Storage Temperature Range		-40°C ... +80°C (-31°F ... +176°F)	

1) Tolerance ±10%
2) Programming Tool # 985.7 required
3) -20°C ... +50°C , Δt = 70°C (-4°F ... +122°F , Δt = 126°F)
4) Low Temperature Modification on request

3. Performance





Operation Mode:

Continuous

Short Time
< 10s (+60s cool down)

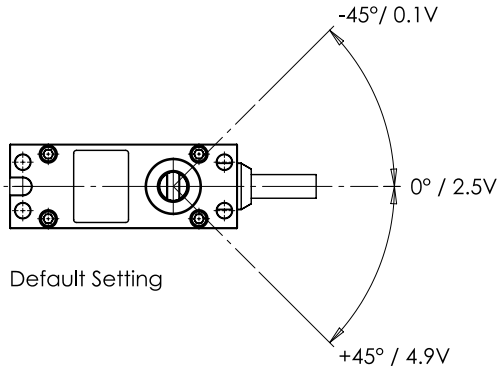
Overload
< 1s (+60s cool down)

4. Command Signal

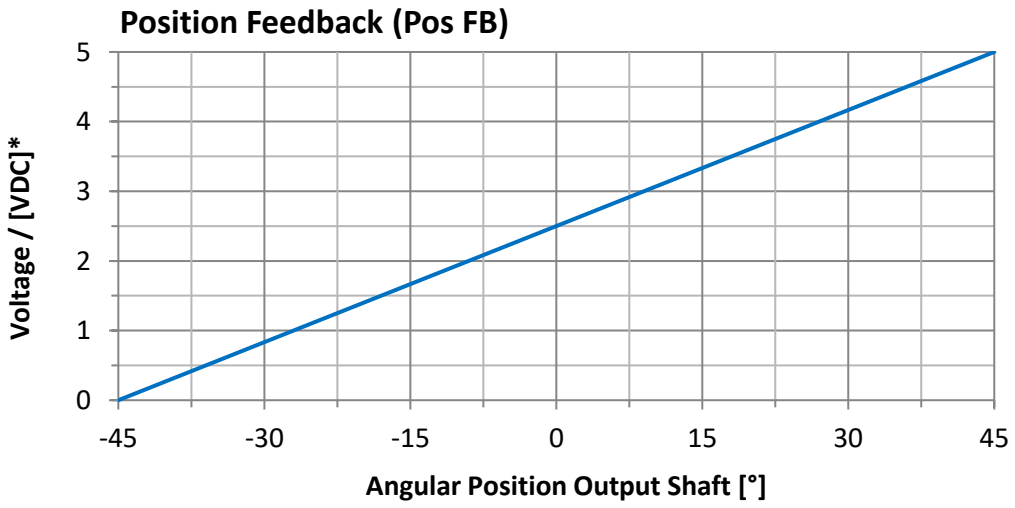
PWM Signal Voltage	TTL-Level HIGH: min. 3.5 V, max. 5.5 V TTL-Level LOW: min. 0.0 V, max. 1.5 V
Frame Rate	2.6 … 2000 ms
Valid Pulse Lengths	0.9 … 2.1 ms
Pulse Length for Position Left / Center / Right	1.0 / 1.5 / 2.0 ms
Resolution	≤ 1 µs

4.1. Position Feedback Signal

The Position Feedback signal (Pos FB) is an analog output signal providing a voltage value which is directly related to the output shaft's angular position. Reference is Supply Ground / Signal Ground (GND).

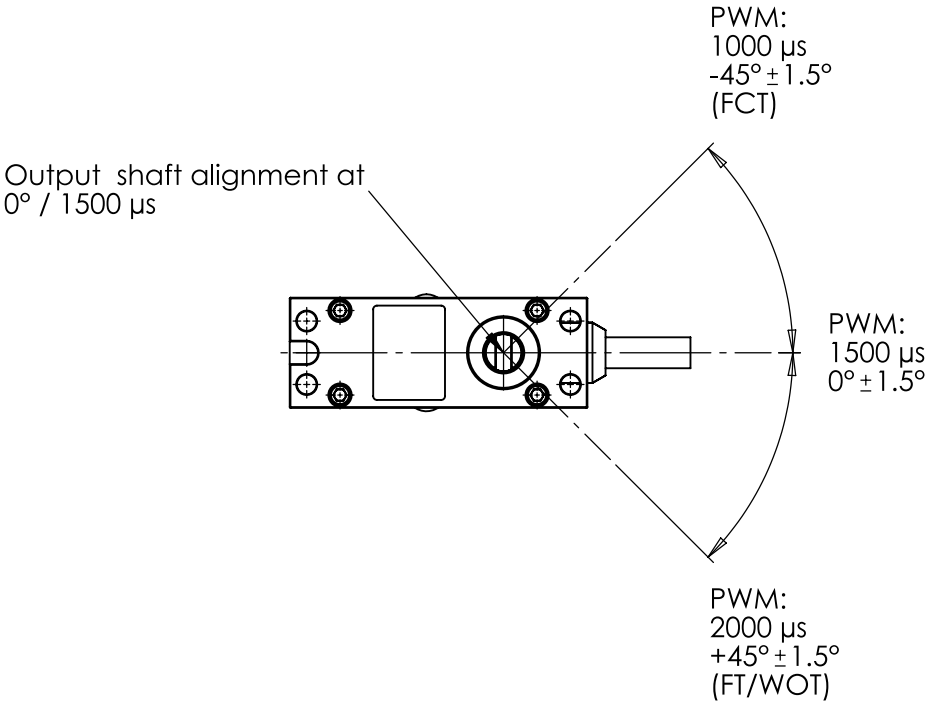


Voltages at end points are configurable.



* Tolerance ±5%

4.2. Default Teach-In



Throttle Parameters:

FT point: 2000 µs

Idle point: 1000 µs

Cut Off (FCT) point: 1000 µs

FT: Full throttle

WOT: Wide open throttle

FCT: Fully closed throttle

5. Materials and Features

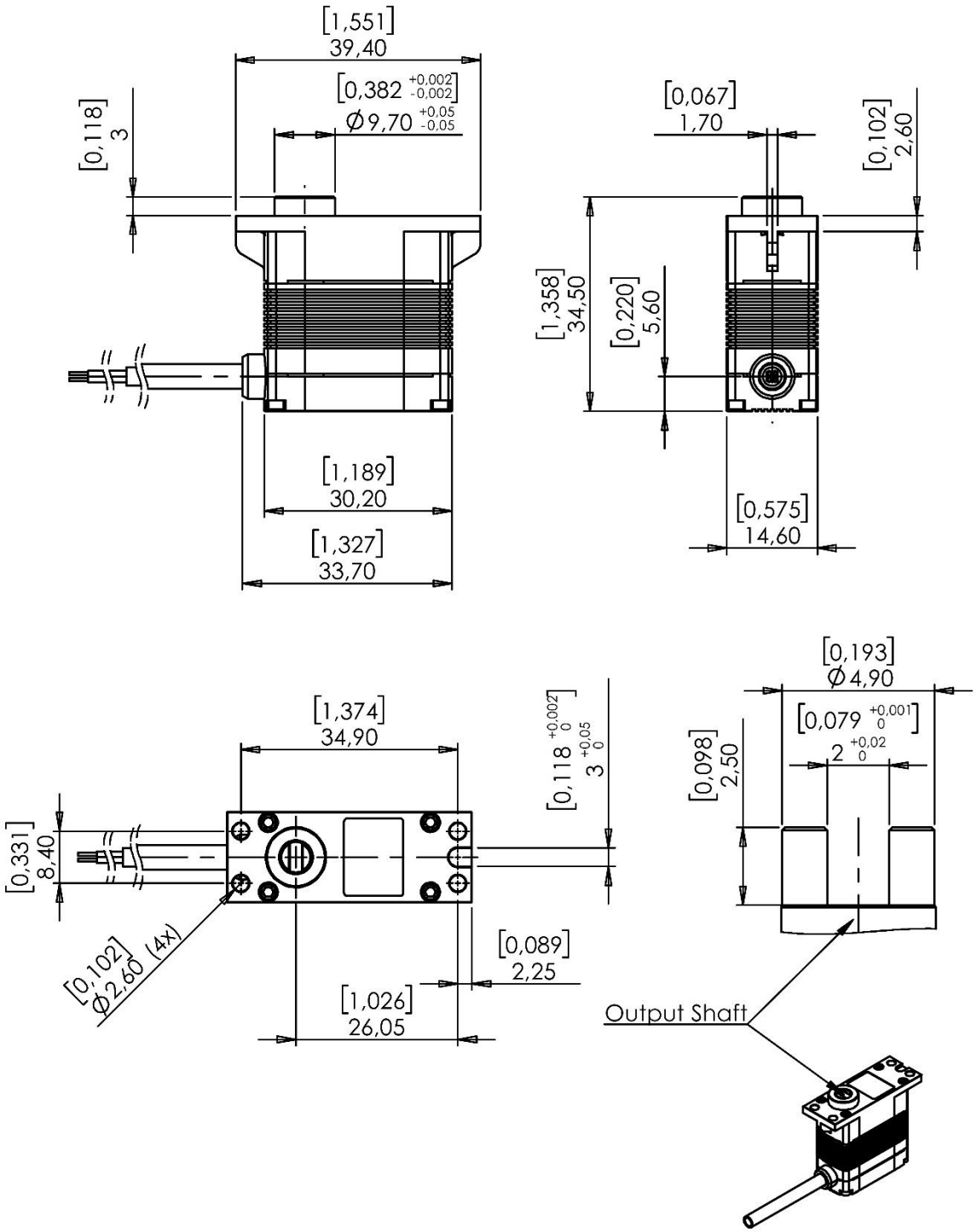
Case Material	Saltwater Resistant Aluminum Alloy
Case Surface Treatment	HART® -Coat
Splash Water Resistance	IP 67, waterproof to 1m depth
Salt Water Resistance	> 100 hrs. Salt Water Spray
EMI / RFI Shielding	Case Shielding
Motor Type	Brushless DC Motor
Gear Set Material	Hardened Steel
Position Sensor	Contactless
Position Feedback	Standard
Shielded Connecting Cable	Standard

6. Dimensions

Case Dimensions	31.5 mm x 39.4 mm x 14.6 mm (1.240 in x 1.551 in x 0.575 in)
Weight	30g (1.06oz) ±10%

Standard Tolerances	Unless otherwise specified according to DIN ISO 2768 - m

6.1. Installation Dimensions

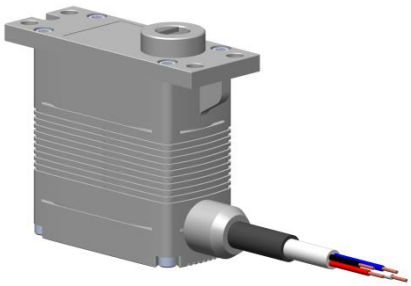


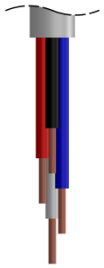
Not to scale

Dimensions [in] , mm

Content is subject to change without notice

7. Electrical Connection





Shielded Cable	
Manufacturer	TE Connectivity
Type	44A1141-26-0/2/6/9-9
Wire Gauge	4x AWG 26 (4x 0.14 mm^2)

Pin Assignment			
1	Red	**+VDC**	Supply Voltage
2	Black	**GND**	Supply Ground, Signal Ground
3	White	**SIG**	PWM Command Signal
4	Blue	**Pos FB**	Position Feedback

8. Accessories

Item	Item-No.
Programming Tool	985.7

All accessories to be purchased separately.

9. Item Number System

DA 15 . T . 12 . BLDC . 1000

Servo Class
15 mm Class

Throttle
T

Supply Voltage
6 V DC **06**
12 V DC **12**

Motor Type
BLDC brushless

Electrical Connection
1000 shielded cable, open leads, length 1000mm (40in)

Volz Servos GmbH & Co. KG
Heinrich-Krumm-Straße 5
63073 Offenbach Germany
Germany
Tel. +49-69-985580-0
Fax +49-69-985580-40

e-Mail **mail@volz-servos.com**
Website **www.volz-servos.com**