



Oden Control AB



**ODEN ACTUATORS FOR GRAMMAGE CONTROL
WITH LOCAL CONTROL BOX (OPTIONAL)**



1.	Table of Contents.....	1
2.	General.....	2
3.	Technical information.....	3-4
4.	OVP-V.23A program.....	5-6
5.	Electric installation.....	7
6.	Cable Selection and Lubricant Recommendations.....	8
7.	Dimensions of the actuators and weights.....	9
8.	CE Certificate.....	10
9.	Warranty and error code info	11

Oden V-BW actuators for grammage control

with Oden local control box (optional).

The Oden V-BW actuators from Oden Control AB are:

Developed for high accuracy grammage control.

All components and mechanical parts of these actuators are calibrated and measured check for the best quality for your process system.

FEATURES

Oden V-BW actuators are powered by high-quality stepper motors and high-resolution control electronics.

Easy installation and start-up. High precision.

The resolution is 5000 steps at 90°, when 3-point setpoint source is selected.

The resolution is 1500 steps/90° when 4-20mA setpoint source is selected.

Stepless speed adjustment from 0.10°/sec to 22°/sec. Depending on the actuator type.

The torque of BW actuators ranges from 30 Nm to 400 Nm.

Operating temperature -40 to +80°C (depending on ambient temperature)

Closing and control torque can be adjusted separately.

Can be controlled with 4-20mA, Modbus, 3-point control or 0-10V (or 2-10V).

ISO-F mounting flanges for easier connection to valves.

Easy programming of Oden OVP free software.

Light weight and small size. Low energy consumption

Energy efficient.

Duty cycle up to 100%, IP rating IP67

Multi-turn rotation, up to 15,000 rev.

Stepless adjustable settings as closing torque, control torque, holding torque and acceleration etc.

Manual operation, Allen key or handwheel (option)

External Oden local control box that allows manual control of the actuator locally (optional)

Oden local control box has a display to show position in %.

Local control box also has 230V AC / 24V DC or 48V DC (3 -13A) power supply for the actuator.

Oden V-BW-actuator

Oden actuators have only a few parts. There is a stepper-motor, gear, control board, actuator body, mounting flange, control board and connection board. It is very easy to maintain. It takes 30 min to replace all parts and make necessary adjustments for best function.

Technical description:

Turning actuator	V30	V65	V180	V250	V400
Torque (Nm)	6–30	10–80	30–120	60–300	60–600
Speed (Max. ° / s)	25*	22*	20*	9*	9*
Precision (°)	± 0.5	± 0.1	± 0.1	± 0.1	± 0.1

Available speed depends on the selected torque. *

If you have any questions, please contact Oden Control AB or your local supplier.

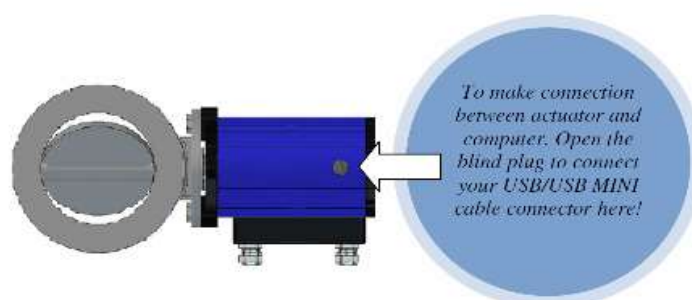
When the actuator is fed with 48V DC, it is possible to get about 50-100% higher-speed with V-models V30, V65, V180, V250 and V400!

Electrical data:	V30	V65	V180	V250	V400	
Voltage (V DC):	24 / 48	24 / 48	24 / 48	24 / 48	24 / 48	
Current (A) Top!	5 ¹	5 ¹	7 ¹	10 ¹	13 ¹	
Analog control (mA):	4-20	4-20	4-20	4-20	4-20	
Digital control:	✓	✓	✓	✓	✓	
0-10 (2-10V) (V DC) control:	✓	✓	✓	✓	✓	
Modbus 485 control:	✓	✓	✓	✓	✓	
3-point control:	✓	✓	✓	✓	✓	
On-Off control:	✓	✓	✓	✓	✓	

* Current rating (A) when maximum torque for specific actuator is selected.

Control signals are galvanic isolated Low voltage for safe handling.

Galvanic isolated feedback signal 4-20mA (active)



Machining of the turning module for the valve shaft.

Model:	A max (mm)	A min (mm)	B max shaft size Size (mm)
V30	37	15	16
V65	52	20	25
V180 and V250	79	30	30
V400	114	50	50



Check that the spindle length above the valve flange adapter is within A max and A min,

See the table above.

Also check that the thickness of the valve shaft is suitable for the rotary module. B max axle size (if possible, to have standard flat wedge and keyway)

Ask for information for clamping sleeves, for mounting without keyways.

General

The Oden V-series modular system consists of:

Base unit

Swivel module

Valve adapter / mounting kit.

Connection card



Checking of delivered items

Check that the delivery is complete according to the delivery specification:

Base unit (V30, V65, V180, V250 or V400)

Swivel module

Product Certificate

Manual

CD including software OVP (Oden Valve Program + manual)

Options:

Computer cable USB/USB MINI to connect between actuator/computer.

Oden Local Control Box.

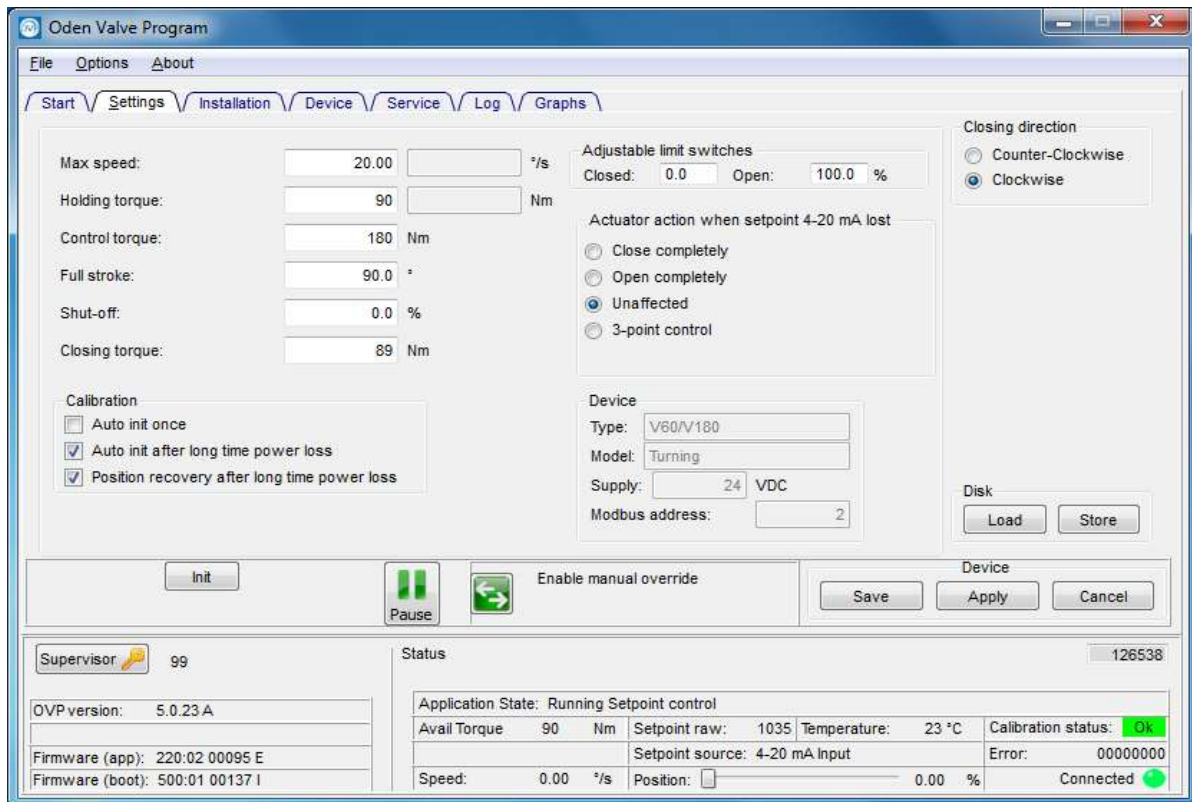
Local control with handwheel: actuators is normally supplied as standard with manual operation with hex key!

Voltage supply for the actuator: 24V DC or 48V DC for the actuator.

Ask for a quote for a 230V AC / 24V DC or 48V DC power supply unit for your actuator.

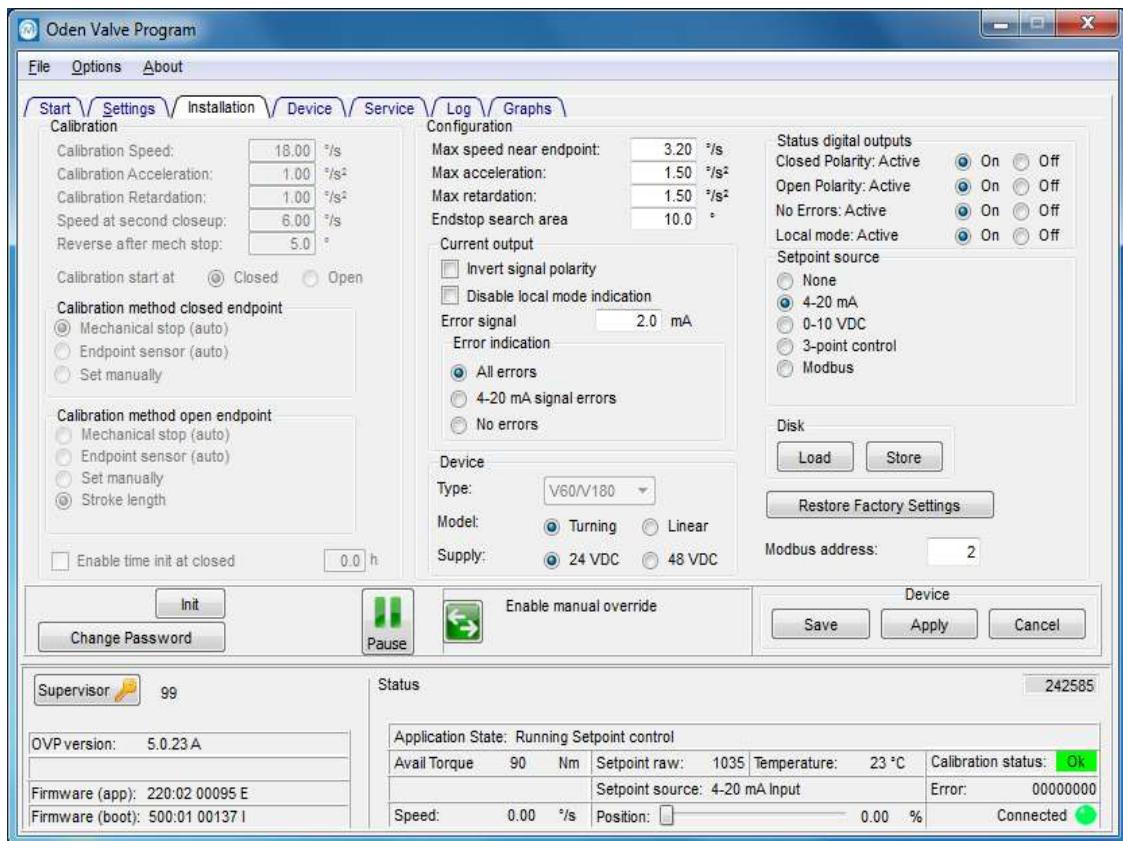
Technical description.

You can control these actuators with 4-20mA or digitally (works as 3-point control) These actuators are not ordinary V-series actuators. The type is Oden V XX * BW (* XX depending on the type of actuator). We use the best gears in these actuators with extra accuracy. Control boards are specially tuned and tested for grammage control. Mounting kits and shaft couplings are specially made for play-free operation. Connections 4 and 5 (increase and decrease) on the connection board are for 3-point control and digital control 24 V DC control. If the actuator could be driven by pulses, each pulse would be able to touch 0.018 degrees/pulse. But our actuators work as 3-point control. Customers usually adjust the timing settings in their own control system. The digital inputs (increase and decrease) are not pulsed, but the motor runs as long as inputs are activated. It is read every millisecond; there is a filter function that removes noise and that means the signal must be stable at ~35 mS to be detected



NOTE! You can choose English or Swedish language for the OVP program.

Here is the settings menu from the OVP valve program. Here you can change settings and store settings in your computer as well. You can load your settings from computer to actuator. The OVP valve program is free of charge and accompanies each actuator delivered. OVP program is available to download from the Oden Control website.



This is **INSTALLATION** menu, here you can select: **SETPOINT SOURCE**, **CALIBRATION METHODS**, **ERROR INDICATIONS**, **TURNING** or **LINEAR** mode and select power supply and many more settings.

Information about input and output limitations: see separate manual.

Information about electrical connections and descriptions: Read Oden BW manual.

How to change settings in Oden BW actuators

Do an installation of the Oden OVP.23A program on your computer.

Open the blind plug in the upper part of the actuator housing. You can see USB Mini connector inside.

Insert your USB MINI cable connector into the actuator first, and then the other end of the USB cable into your computer's USB port. Start the OVP program by clicking on the OVP icon. Click: **CONNECT**. Go to the menu. To see all menus, type **SUPERVISOR** password: AsabOden4.

SETTINGS: IF YOU HAVE 24 V DC POWER SUPPLY ON to your actuator you should see the green **PAUSE** button in the OVP window. Click: **PAUSE** button (**RUN** button will become visible) Now you can change the necessary settings, such as speed, power and etc. Click **APPLY** and then **SAVE**, to save settings Click the green **RUN** button to enter normal control mode Green **PAUSE** button must be visible, when exiting the OVP program. Leave no yellow **APPLY** and **SAVE** buttons in the program. External control signal does not work when the **RUN** button is visible.

Electrical Connections for Oden Local Control Box (Optional)

Connections between Oden Local Control Box and Oden actuators.

If 4-20mA control signal is used! From 24 V DC power supply. From PLC and reversal

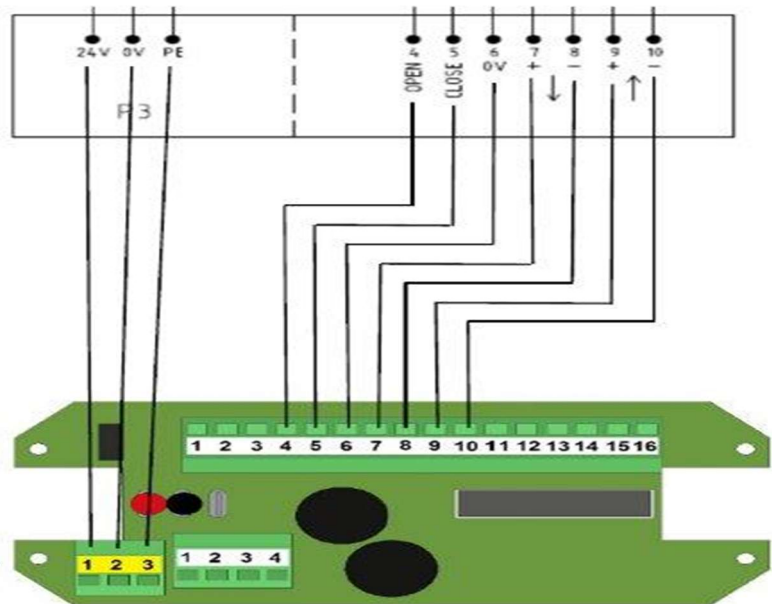
Oden local control box

Cable between control box and actuators are options!

Oden Connection Card

located inside the connection board lid.

on the side of the actuator housing



Explanations of inputs and outputs in the Oden Local Control Box:

24 VDC, 0V and PE are from 24 VDC power supply to remote control box.

4: OPEN (you open your valve with the push button in the remote-control box)

5: CLOSE (you close the valve with the push button in the remote-control box)

6:0V

7: 4-20mA control signal + IN

8: 4-20mA control signal - IN

9: 4-20mA analogue feedback signal from actuator + UT Active

10: 4-20mA analogue feedback signal from actuator - UT Active

Customers can purchase the cable between the remote-control box and actuator.

See local requirements for a specific website!

Use multi-conductor cable. NOTE! Recommend the length of the cable is max. 10m

between local control box and actuator!

NOTE! If the Oden Local Control Box is not selected, connect all power supply and PLC system connections directly to the Oden connection board (inside the lid).

Cable selection

Cable for 24V DC/48V DC power supply should have 1.5mm² conductor. Actuator types V400, V65Q and V65QL, conductors must be 1.5 - up to 2.5 mm², the maximum cable length between the supply and actuator is 15 m. The terminal block of the connection board can take max. 2.5 mm² conductor. Ask your actuator supplier for more information.

Lubricant instructions for Oden V-Series actuators.

Use only recommended grease products for best function.

For Oden actuator gearboxes, the manufacturer recommends using **KLÜBER, ISOFLEX TOPAS NB 52**.

KLÜBER, ISOFLEX TOPAS NB 52 is grease with a wide service temperature range for smooth and roller bearings. It consists of synthetic hydrocarbon oil and barium composite soap. It is resistant to water, ambient media, oxidation aging and it reliably protects against corrosion. **Isoflex Topas NB 52** grease is designed for long-term lubrication of roller bearings and plain bearings. **Isoflex Topaz NB 52** has a wide service temperature range, resists water, contamination, oxidation and oxidation and corrosion. Temperature range: -50 / +150 °C Drop point: 240 °C.

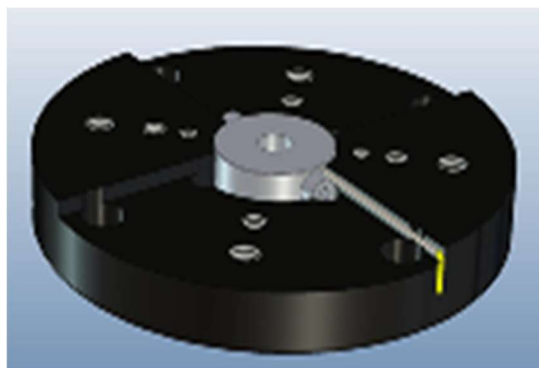
When servicing or lubricating Oden linear assemblies, OILKEY, GT-500XT should be used.

Description OILKEY GT-500XT (Red) is a lithium complex grease based on mineral oil, containing EP and anti-corrosion inhibitors and corrosion-resistant additives. The grease has exceptionally good mechanical stability, extremely good adhesion, and good anti-corrosion properties.

The OilKey GT-500 XT is designed for lubricating plain and roller bearings. The grease is designed to withstand high temperatures. **The OilKey GT-500 XT** is used for lubricating ball screws, ball screw nuts, chassis on both light and heavy vehicles. Suitable for lubricating machines in construction, forestry, agriculture. Extremely suitable for marine equipment as well as industrial applications where water resistance and anti-corrosion properties are required. Temperature range: -25 / + 180 °C Drop point: 260 °C Safety data sheet can be downloaded from [www.odencontrol.com / download /](http://www.odencontrol.com/download/)

Select: KLÜBER, ISOFLEX TOPAS NB 52 or OILKEY, JET-GREASE GT-500XT

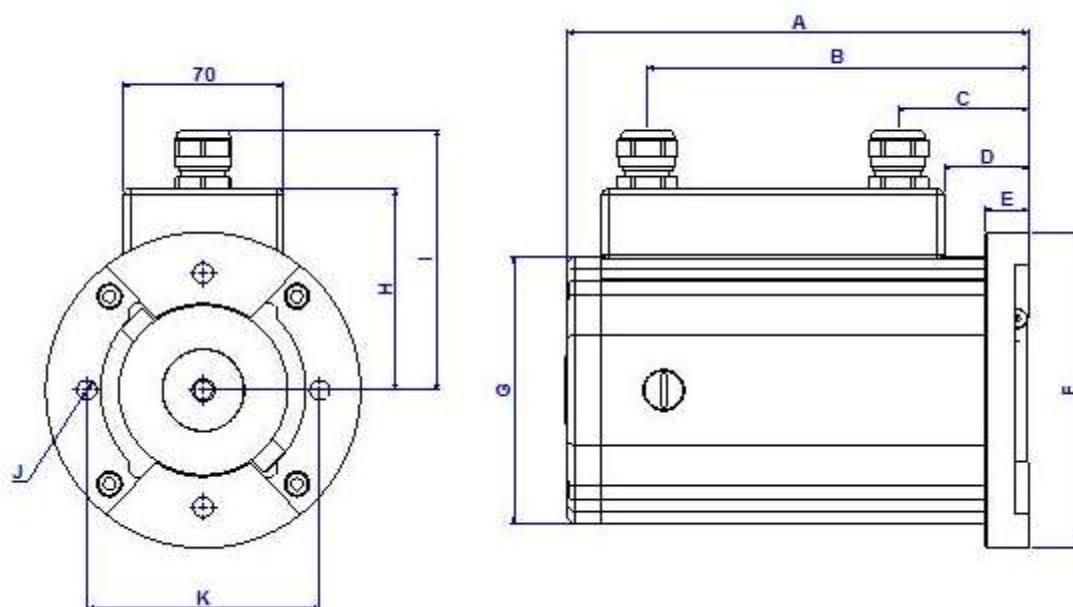
Position indicator pins.



Actuators can be supplied with position indicator pins (1 or 2) that are visible outside the actuator. (Optional)

Actuator models:

Actuator	Sizes:								
Step	A	B	C	D	E	F	G	H	I
V30	185	150	40	20	20	Ø138	116	93	119
V65	202	167	57	37	19	Ø138	116	93	119
V180	273	238	128	108	28	Ø138	116	93	119
V250	307	272	162	142	28	Ø175	152	111	137
V400	331	296	188	166	50	Ø175	152	111	137
Servo									
V30Q	251	216	106	86	20	Ø138	116	93	119
V65Q	268	233	123	103	19	Ø138	116	93	119
*V120Q	296	261	151	131	28	Ø175	152	111	137
*V120Q is not available yet !									
Actuator	Connection								Weight:
Step	J				K				(kg)
V30	M8 (2x),M8 (4x),M10 (4x)				50 (iso F5),70 (isoF 7),102 (iso F 10)				4,4
V65	M10 (4x)				102 (iso F 10)				5,1
V180	M10 (4x)				102 (iso F 10)				7,7
V250	M10 (4x),M12 (4x)				102 (iso F 10),125 (iso F 12)				13,3
V400	M12 (2x),M16 (2x)				125 (iso F 12),140 (iso F 14)				17
Servo									
V30Q	M8 (2x),M8 (4x),M10 (4x)				50 (iso F5),70 (isoF 7),102 (iso F 10)				5,8
V65Q	M10 (4x)				102 (iso F 10)				6,5
*V120Q	M10 (4x),M12 (4x)				102 (iso F 10),125 (iso F 12)				12,5



DECLARATION OF CONFORMITY

Herewith declares that the product(s):

Oden Control AB: V30, V65, V180, V250, V400, V30Q, V65Q, V30QL, and V65QL, electric actuators

are CE-marked 2023 under full technical responsibility of:

Oden Control AB
Norra Bruksgatan 2
155 33 Nykvarn
Sweden

and in conformity with the provisions of the following EU directive(s):

- Electromagnetic Compatibility (EMC) Directive: 2014/30/EU
- Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) 2011/65/EU

and conforming to the EMC standard(s)

- EN 61000-6-2:2005 + AC:2005 Electromagnetic compatibility (EMC)-Part 6-2: Generic standards-immunity for industrial environments IEC 61000-6-2:2005
- EN 61000-6-3_2007 + EN 61000-6-3:2007/A1:2011 + AC:2012 Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial, and light-industrial environments IEC 61000-6-3:2006

and RoHS standard:

- EN 50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Is hereby declared under our sole responsibility:

Nykvarn, Sweden 2025-06-11
Place and date of authorization



Harri Porttila
Managing Director
Oden Control AB

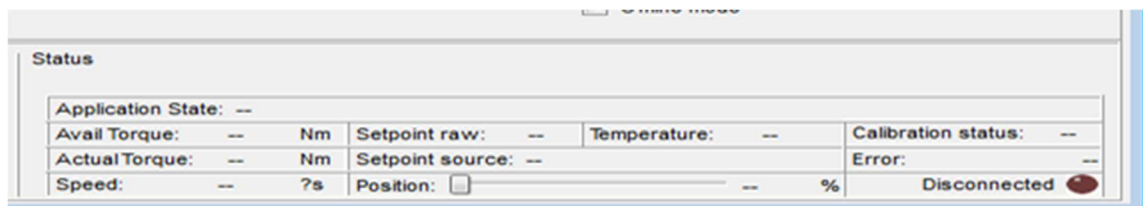
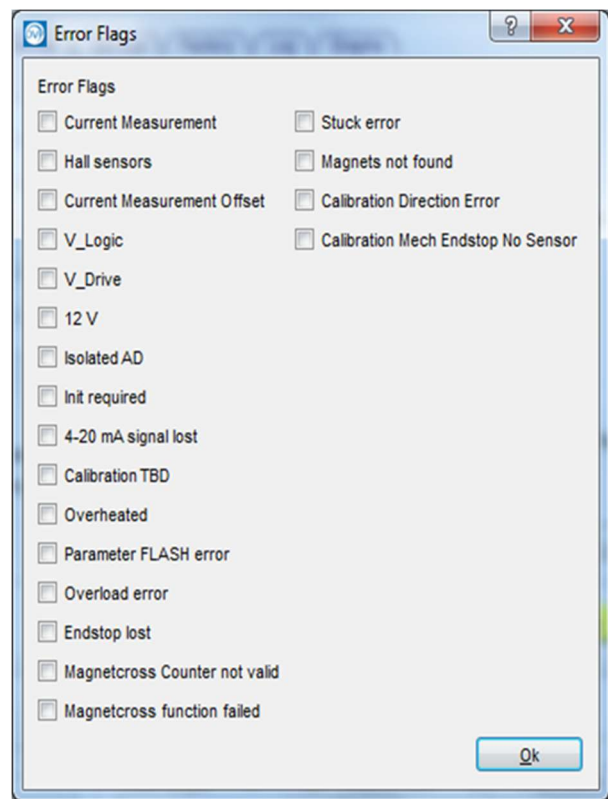
Warranty.

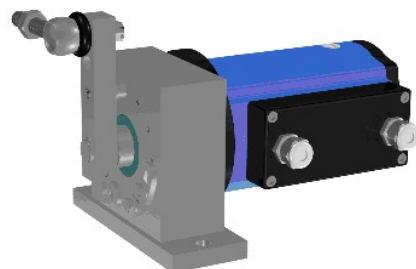
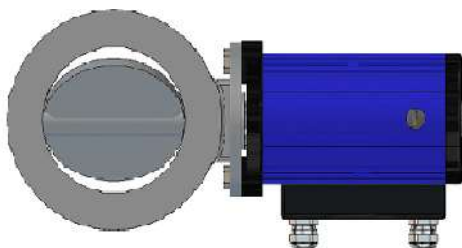
The Oden V-series actuators have an IP67 rating. Therefore, it is important that the condition of the seals is checked and replaced if necessary, during the maintenance of the actuator. All screws must be tightened securely. The actuator contains sensitive electronics, which can be damaged if water or other liquids get into the actuator. Junction box cable glands have an IP68 rating. For the warranty conditions to apply, the customer, dealer and electrician who will install the cables to the actuator must follow the rules to ensure that the enclosure is safe and meets at least IP67 requirements. If the cables used are thinner than the rubber seals on the cable glands allow, the rubber seals must be replaced with suitable ones. Cable glands or cable glands are replaced with such a cable that ensures tightness of the selected cable. If the customer changes cable glands to a model that does not guarantee at least IP67 encapsulation or tries to seal the cable entry with diverse types of sealants for this type of cable transit, the warranty does not apply. If original parts are replaced with non-original parts, one must discuss the warranty terms with the supplier or Oden Control AB. If only one or the other cable gland is used, the unused cable opening must be sealed with the supplied rubber stopper and tightened securely. Cable glands can also be supplied with the model and size required by the customer, provided that at least IP67 encapsulation class is maintained and that the cable gland also meets the requirements in terms of heat resistance. In some cases, such a measure may increase the price of the actuator. Talk to your actuator supplier or contact Oden Control AB for support. The actuator must not be opened if there is a risk of water entering the actuator. On the side of the actuator there are holes for USB cable for programming. The hole is sealed with a metal blanking plug with an O-ring. This blanking plug has an IP68 rating. The blanking plug must be tightened properly after use.

Error explanations. Right-click on the STATUS field in the OVP program to see error codes written.

Error code number code and explanation written:

1	Current Measurement
2	Hall sensors
4	Current Measurement Offset
8	V_Logic
10	V_Drive
20	12 V
40	Isolated AD
80	Init required
100	4-20 mA signal lost
200	Calibration TBD
400	Overheated
800	Parameter FLASH error
1000	Overload error
2000	Endstop lost
4000	Magnetcross Counter not valid
8000	Magnetcross function failed
10000	Stuck error
20000	Magnets not found
40000	Calibration Direction Error
80000	Calibration Mech Endstop No Sensor





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