

BRAVO 4.0

MANUAL / LTC (LUBRICATE TIME CONTROL)



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ADVANCED DESIGN AND SOLUTIONS

The BRAVO 4.0 electric pump is a robust and compact piston pump, designed for progressive grease and oil lubrication of machinery used in various sectors.

This pump was developed to meet multiple spare-related requirements, therefore it can be equipped with tanks of different capacities, as required. The tank is made of plastic (PET), and it has fixing holes that reduce the possibility of lubricant leakage to zero, and other features that make it easy to install.

The pump is available in 2 macro-versions, which can be used with Grease, Oil and Wind Turbine Follower Plate Disc:

- **MANUAL:** It can be managed by PLC and external connectors; as it is not equipped with an internal control unit, this version is a cost-effective solution for lubricating your equipment.
- **LTC:** With programmable PCB and DIP Switch; this version is equipped with run/error LED signals.

APPLICATIONS

- Wind turbines
- Glass or woodworking, earthmoving and agriculture machinery
- Mining or construction industry, chains and gears

ADVANTAGES

- It is designed to operate with up to three pumps, for an overall higher flow rate.
- A remote reset button for LTC versions can be supplied as optional.
- The main body of the pump is made from high performance robust plastic and is compact in size designed to withstand tough environments.



CHARACTERISTICS

NEW TANK DESIGN

VOLTAGE:
12V AC/DC-24V AC/DC
110V/230V 50/60 HZ

FLOW RATE:
4 CM³ / MIN (0.24 IN³ / MIN)
0,6 ÷ 4 CM³ / MIN
(0.04 ÷ 0.24 IN³/MIN)
ADJUSTABLE

TANK CAPACITY
GREASE VERSIONS
W/FOLLOWER PLATE:
2 - 4 - 8 - 12 LT (0.53 – 1.05
2.11 – 3.17 US GALLONS)

BRACKET FOR MOUNTING ON
WIND TURBINES

IOT MONITORING OF
LUBRICANT LEVEL

TECHNICAL SPECIFICATIONS						
POWER SUPPLY VOLTAGE	DC		AC-50HZ		AC-60HZ	
	12 V	24 V	110 V	230 V	110 V	230 V
CURRENT (NOMINAL)	1.5A	0.7A	0.3A	0.2A	0.3A	0.2A
NUMBER OF OUTPUTS (PUMPING UNITS)	1 (3 MAX.)					
OUTLET THREAD	G1/4"					
NOMINAL OUTPUT PER PUMP ELEMENT (20 RMP)*	4 CM ³ /MIN (0.24 IN ³ /MIN) 0.6–4 CM ³ /MIN (0.04–0.24 IN ³ /MIN) - ADJUSTABLE					
WORKING PRESSURE	350 BAR (4061 PSI)					
TANK CAPACITY OIL/GREASE VERSIONS	2 - 4 - 6 - 10 - 14 LT (0.53 - 1.05 - 1.58 - 2.64 - 3.7 US GALLONS)					
TANK CAPACITY GREASE VERSIONS W/ FOLLOWER PLATE	2 - 4 - 8 - 12 LT (0.53 - 1.05 - 2.11 - 3.17 US GALLONS)					
MAX GREASE CONSISTENCY	NLGI 2					
OIL VISCOSITY MIN.	46 CST					
OPERATING TEMPERATURE	-25°C TO +80°C					
STORAGE TEMPERATURE	-30°C TO +90°C					
HUMIDITY	90%					
DEGREE OF PROTECTION	IP69K (VERS. DIN 72585/UTS) IP67 (VERS.M12) IP64 (EXTRA-CYCLE KEY)					
NOISE	< 70 DB (A)					

DESIGN AND NEW PERFORMANCE COMPARED TO THE BRAVO VERSION



BRAVO 4.0



BRAVO

IP PROTECTION	IP69K (VERS. DIN 72585/UTS) IP67 (VERS.M12) IP64 (EXTRA-CYCLE KEY)	IP65 (IP69K WITH SPECIAL EQUIPMENT)
IO-LINK	CONTINUOUS LEVEL MONITORING	✗
OPTICAL LEVEL	✓	✗
WIRING SET-UP	MULTIPLE LAYOUT + CUSTOMISABLE PLATE	RIGHT ONLY
MAXIMUM FLOW RATE (CC \ MIN)	4CC X 3 PUMP ELEMENTS = 12CC	5.2CC X 2 PUMP ELEMENTS = 10.4CC
MAXIMUM PRESSURE (BAR)	350	280
VENT VALVE SUPPORT	✓	✗
PUMPING ELEMENTS	SCREWED INTO THE HOUSING	SCREWED INTO THE NUT
FIXING HOLES	DOUBLE SLOTS FOR GREATER COMPATIBILITY	ONLY 1 FIXING HOLE
ADDITIONAL CYCLE BUTTON	✓	✗

EXAMPLE OF LUBRICATION SYSTEM ON WIND TURBINES

BRAVO 4.0 is the optimal solution for installation on wind turbines and many types of vehicles, such as construction machinery, agricultural machinery and other special vehicles.

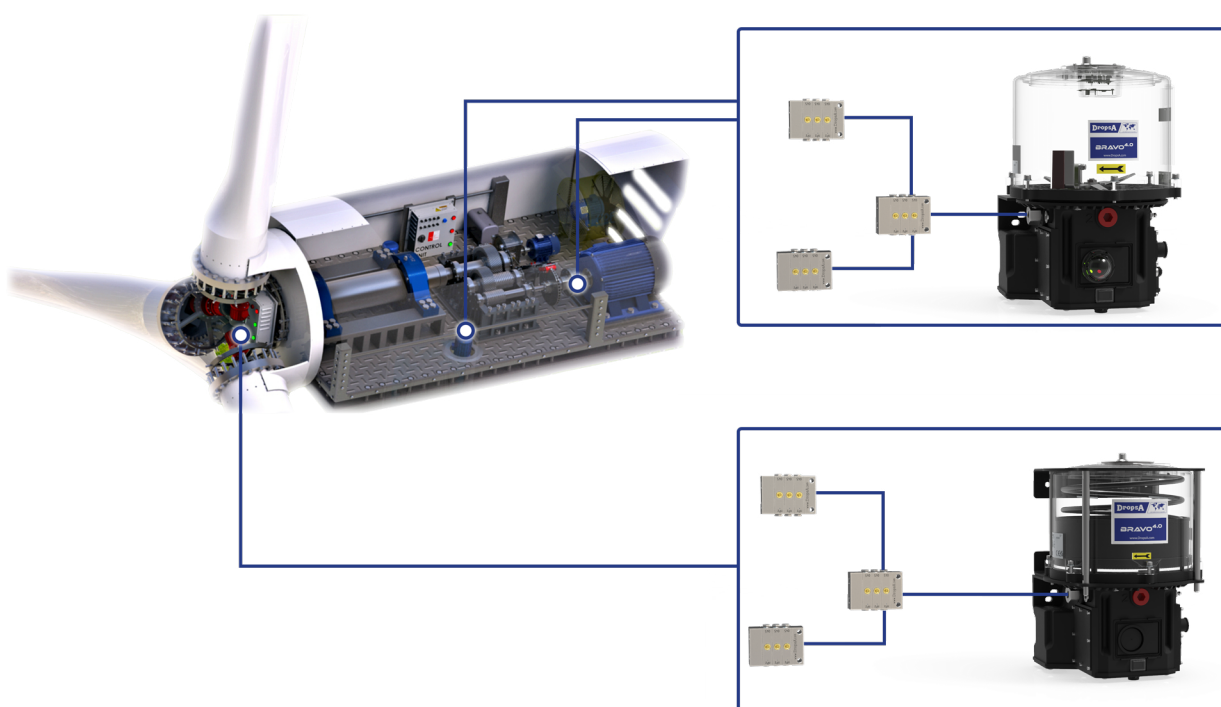
The complete lubrication system includes:

- BRAVO 4.0 pump
- Distributors
- Remote status indication with control button

The wind turbine-mounted version has an upper bracket and an additional lower bracket to increase strength and the number of fixing points.

The tank contains the spring with the plate disc, so that the pump can also operate upside down.

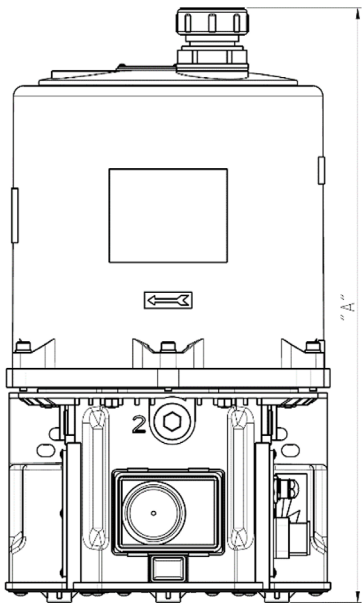
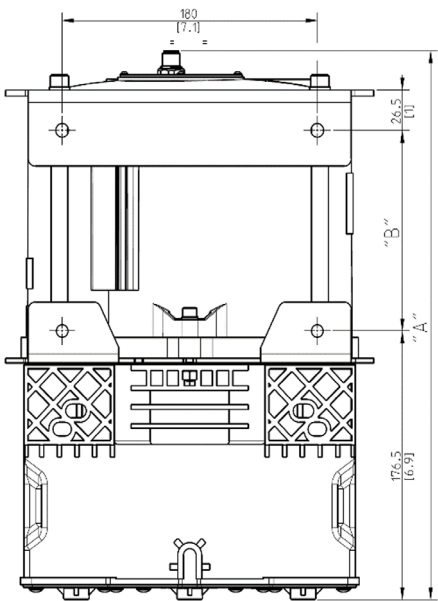
The follower plate disc is flat, so that the optical level can read the precise position and detect the amount of residual grease.



DIMENSIONS

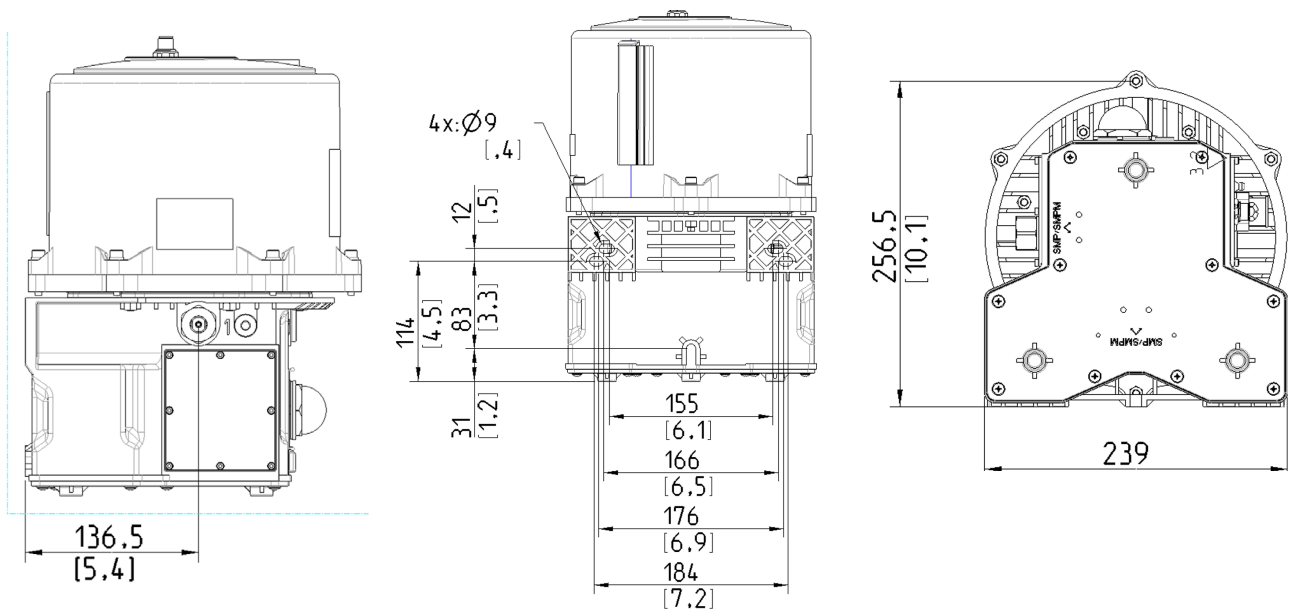
Grease/Grease+Follower plate versions

Oil versions



GREASE TANK	VALUE 'A'	GREASE FOLLOWER PLATE TANK	VALUE 'A'	OIL TANK	VALUE 'A'
2KG TANK	257	2KG TANK	364	2KG TANK	303
4KG TANK	364	4KG TANK	414	4KG TANK	388
6KG TANK	414	8KG TANK	516	6KG TANK	438
10KG TANK	516	12KG TANK	621	10KG TANK	540
14KG TANK	621	-	-	14KG TANK	645

* Flanges are provided for the 10-kg and 14-kg versions, both for grease and oil use.



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GREASE VERSION WITH FOLLOWER PLATE

Tank Size Available
(2-4-8-12 Kg)



OIL/GREASE VERSION

Loading cap

Tank Size Available
(2-4-6-10-14 Kg)

Auxiliary return port G1/8"



ALSO AVAILABLE WITH LTC ELECTRONICS/LEVEL SENSOR IN GREASE VERSIONS WITH SPATULA/FOLLOWER PLATE AND OIL

Optical
IO-Link/
Digital Level
Connector
(Optional)

INSPECTION
WINDOW
status/
configuration
display



ORDER INFORMATION

The pump can be configured according to customer requirements.

The order code is derived from the above-mentioned identification sequence divided into two sections:

Product ID code = Product type identifier (BRAVO 4.0)

Ordering option = Available product configuration options.

PRODUCT CODE ID			ORDER OPTION			
8	8	3	X	X	X	X

OPTIONAL ACCESSORIES				
PUMP UNIT POSITIONING				
LEFT SIDE	FRONT	RIGHT SIDE		
X	X	X	X	X

TANK CAPACITY		
GREASE	2 KG	0 (*)
	4 KG	1
	6 KG	2
	10 KG	3
GREASE WITH FOLLOWER PLATE	14 KG	4
	2 KG	5
	4 KG	6
OIL	8 KG	7
	12 KG	8
	2 KG	A (*)
	4 KG	B
	6 KG	C
	10 KG	D
	14 KG	E
(*) OPTICAL LEVEL NOT AVAILABLE		

ELECTRICAL CONNECTION		
FOR MANUAL VERSION	1X MPM + 1X M12 4PIN R SIDE (1) (2)	00
	1X MPM + 1X M12 4PIN L SIDE (2)	01
	2X MPM R SIDE (1) (2)	02
	2X MPM L SIDE (2)	03
	AMP 7 PIN IP69K R SIDE (1) (3)	04
FOR LTC VERSION	AMP 7 PIN IP69K L SIDE (3)	05
	AMP 7 PIN + 1X M12 4PIN R SIDE (1) (3)	50
	AMP 7 PIN + 1X M12 4PIN L SIDE (3)	51
	AMP 7 PIN IP69K R SIDE (1) (3)	52
	AMP 7 PIN IP69K L SIDE (3)	53
(1) STD VERSION		(1)
(2) AVAILABLE FOR 12/24V DC 110/230V AC		(2)
(3) ONLY AVAILABLE FOR 12/24V DC		(3)

PUMP UNIT ELEMENTS AND POSITIONING		
0	-	-
1	2.8 CC	-
2	ADJ 0.2-2.8 CC	-
3	4 CC	-
4	ADJ 0.6-4 CC	-
5	2.8 CC	BYPASS 280 BAR
6	ADJ 0.2-2.8 CC	BYPASS 280 BAR
7	4 CC	BYPASS 280 BAR
8	ADJ 0.6-4 CC	BYPASS 280 BAR
9	2.8 CC	BYPASS 350 BAR
A	ADJ 0.2-2.8 CC	BYPASS 350 BAR
B	4 CC	BYPASS 350 BAR
C	ADJ 0.6-4 CC	BYPASS 350 BAR

POWER		
MANUAL WITHOUT OPTICAL LEVEL	12 VDC	0
	24 VDC	1
	110/220V 50/60HZ	2
MANUAL WITH OPTICAL LEVEL IO-LINK	12 VDC	E
	24 VDC	F
	110/220V 50/60HZ	G
LTC WITHOUT OPTICAL LEVEL	12 VDC	3
	24 VDC	4
	110/220V 50/60HZ	5
LTC WITH OPTICAL LEVEL IO-LINK	12 VDC	H
	24 VDC	I
	110/220V 50/60HZ	L

CUSTOMISED LABEL	
DROPSA LABEL	0

CUSTOMISATION	
NO MODIFICATION	0

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Order example

FIRST EXAMPLE: 8830000

- Pump ID: BRAVO 4.0
- Tank: 2 kg grease
- Power supply: 12Vdc manual
- Connections: 1x DIN 43650 1x M12 4pin
- -
- Left pump unit: 2.8 cc
- Front pump unit: ADJ 0.2-2.8 CC
- Right pump unit: 4 cc

SPARE PARTS KITS AND ACCESSORIES

OPTIONAL	
CODE	DESCRIPTION
0880104	4 CM³/MIN PUMP UNIT
0880060	0.6–4 CM³/MIN ADJUSTABLE PUMP UNIT
0010509	SCREW FOR ASSEMBLING SMP-SMPM
3134209	GREASE FILLING CARTRIDGE KIT
3130540	GREASER FILTER