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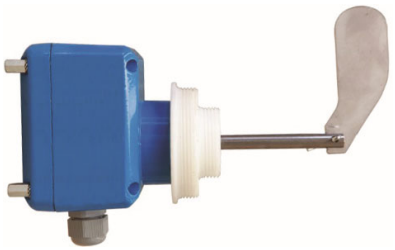
LP

LEVEL INDICATORS



TECHNICAL CATALOG
ASSEMBLY-MAINTENANCE CATALOG
SPARE PARTS CATALOG

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2838 Jordan Oaks Ln
Decatur GA, 30033

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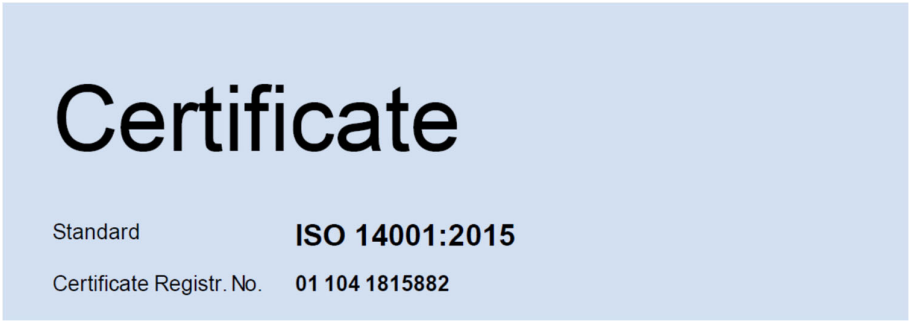

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1.

TECHNICAL CATALOG

1.1 BASIC SAFETY WARNINGS

In compiling this instruction catalog, careful attention has been paid to all considerations of operation and maintenance during normal working conditions. Buyers/users are exclusively responsible in complying all laws, rules, and regulations in force in their country/area regarding safety of working environment and labour safety.

For matters which are not specified by the manufacturer in this catalog, as requirements of the applicable environmental process, safety, health care and other social responsibilities applicable laws, regulations, instructions, and rules will be effective.

Particular care should be taken against all risks, danger and accidental incidents which may occur during the operation of the product.

This catalog contains description and recommendations for to guide set-up, start-up, operation, and maintenance procedures.

This catalog or its related parts should be kept close to the product with easy access for users. It is the buyer's/user's responsibility and authority to ensure the delivery of this catalog to related users of the product.

Never start any operation before reading this catalog completely. The product is produced solely for its intended use. Please ask for manufacturer's approval for different applications.

The product shall be operated in and under normal operating conditions. Manufacturer is absolutely not responsible for any complications or their consequences in cases where alterations have been made without written consent of the manufacturer.

All protective and safety clothes, tools, devices, and conditions have to be supplied by users. The unit has to be fixed during and prior to any operation.

In order to perform assembly, maintenance, repair and cleaning on the product, according to 2006/42 EC the user must take all necessary precautions to ensure public safety, safety of the environment and its entities and also take all actions to prevent any harm that may involve third parties.

Requirements for pneumatic lines and air usage shall be completed by the user to meet air consumption according to technical specifications which are given in technical catalog.

Only fully qualified and authorized electricians should conduct electrical operations. Occupational safety and worker health requirements must be met. Electrical problems and their consequences are out of manufacturer's control and are not covered under warranty. The manufacturer cannot be held responsible for any damage to property, people or third parties, arising from poor electrical workmanship.

Always ensure that the power is disconnected before each operation. It is vital important that Power button has to be managed by a qualified person to prevent uncontrolled opening and closing.

All electrical connections shall be executed by the user to ensure safe operation. Users also have to take necessary actions to avoid uncontrolled startup of machine by means of emergency stop and switches of sufficient amount.

Controlling the status of Voltage and frequency's compliance is important. The electrical earthing of the product must be proper, safety warnings should be clean and readable, and all operations should be according to EN 600079-14 and TS 60204-1 EN standards.

Do not start up, if the unit is not complete and/or not in proper condition. Do not interfere with the unit during operation. Never approach while the units are operating. Never let tools, hand, or head to approach to the operating zone during

operation.

If you require further technical information or spares for your unit, please contact the manufacturer and it is necessary to report all data such as serial number, type etc. which are written on the machine's plate.

Make sure that; all lifting/transportation operations must be conducted in accordance with the instructions specified in this catalog and the relevant standards. Lifting operations should be done with accessories and carrying systems suitable for unit dimensions and weight.

Manufacturer can modify the product without notice and immediate effect. All dimensions specified in the catalog are for nominal standard parts. Dimensions and features may change depending on the type of project, applications, material.

This catalog cannot be changed without informing the manufacturer. The latest version of the catalog is accessible at our web site www.ozb.com.tr.

1.2 SAFETY SYMBOLS

These signs are of a warning nature and do not eliminate the risk. These instructions and/or warnings are recommendations, which should be run in conjunction with the latest health and safety directives in accident prevention.

WARNING DANGER Special indication, provision and prohibiton to prevent injury to personnel.	
ELECTRICAL POWER DANGER	

1.3 UNIT DESCRIPTIONS

Level indicators are designed for creating an electrical signal through built in microswitch as a result of interrupted rotation by powder, granular, sludge and similar materials in any form of cup such as silo, hopper, tank etc.

The shaft with a metal part in the form of paddle at the tip; It turns with the help of an electric motor and stops when it touches the material and sends a signal. When the contact with the material is cut, it starts to rotate again and sends a signal.

Paddle type level indicators are supplied as 24VAC, 11VAC, 230VAC 50/60 Hz and 24VDC. Also optional shafts up to 39" length are available.

OZB paddle type indicators offer special alloy Aluminum body, special design driveline and with casing in order to increase mechanical protection features, resulting in increased service life.

Application fields of OZB paddle type level indicator;
Building chemicals, lime, Styrofoam, molding sand.

Food industry for milk powder, flour, salt etc.
Plastic industry for plastic granules etc.
Cement, gypsum plant, chemical industry.
Feed sector; etc.

1.4 OPERATION CONDITIONS

Products are not designed to operate in explosive flammable, toxic, hazardous viral or bacterial dangerous environment and/or materials. If the machine has to operate in these conditions, the manufacturer must be informed.

The appropriate use of the unit according to the food norms should be reported to the manufacturer at order although the unit has to be produced accordingly.

Temperature values;
Permitted environmental temperature: -13°F / +176°F
Permitted operating temperature: -4°F / +158°F
Maximum surface temperature: 212°F

Pressure;
For general applications: -1.45 psi / +1.45 psi
For test: 11.60 psi

1.5 PRODUCT LABEL

Every unit is supplied with identification plates showing;

- Manufacturer's information
- Manufacturer's web site
- CE logo
- Product code
- Production place
- Voltage Value
- Frequency

Do not throw away the labels on the unit and do not change the information on the label. Make sure that labels are clean and legible.

1.6 PRODUCT CODE KEY

1	2
LP	024DC

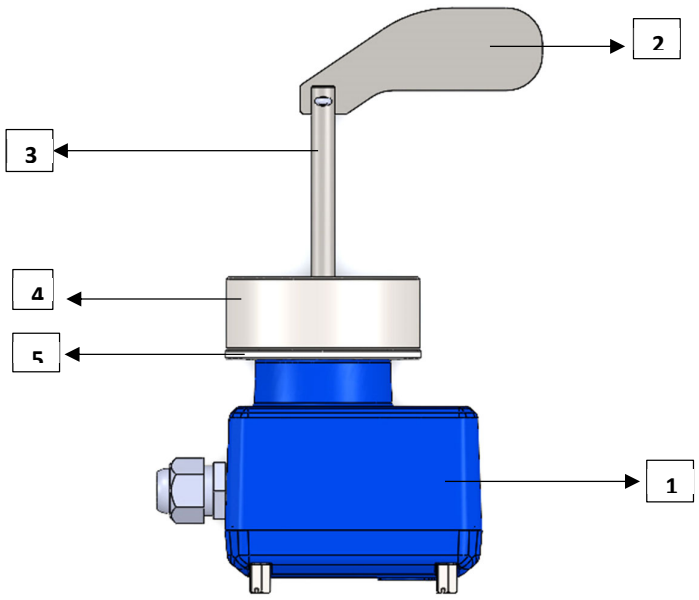
1	Unit Code

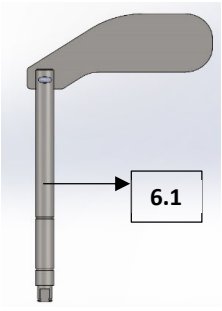
LP	Level Indicator

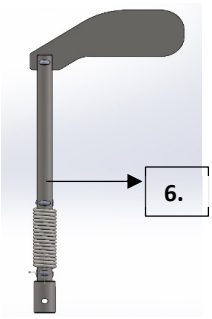
2	Voltage

024AC	24VAC 50/60Hz
110AC	110VAC 50/60Hz
220AC	220VAC 50/60 Hz
024DC	24VDC

1.7 COMPOSITION

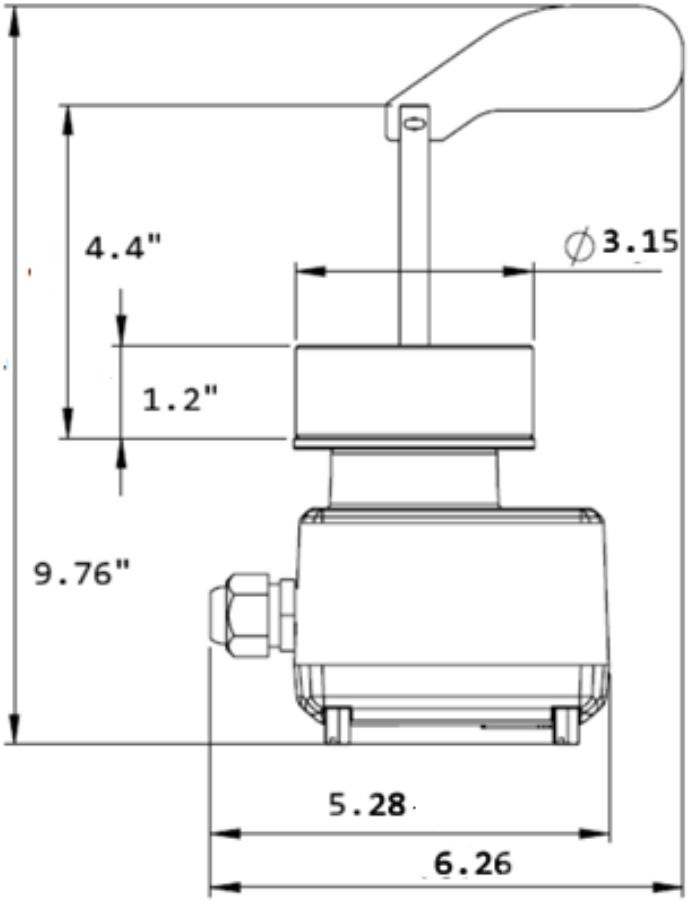






No	Description
1	Body
2	Paddle
3	Shaft
4	Connector
5	Shaft support
6.1	Aluminium, pipe type extended shaft (optional)
6.2	Stainless steel, flexible typeextended shaft (optional)

1.8 OVERALL DIMENSIONS



1.9 TECNICAL PROPERTIES

MECHANICAL PROPERTIES	
Casing	Injection moulded aluminium
Connection hub	Delrin
Connection hub size	G 1 ½" ve/and G 2 ½"
Shaft and paddle	Stainless steel AISI 304
Length tolerance	± 0.12" (3 mm)
Dust seal	Radial type on shaft
Sensitiviy adjustment	Sensitive adjustment with 3 positions
Voltage-Frequency	24VAC, 110VAC, 220VAC 50/60Hz 24VDC
Shaft speed	1-4 rpm
Protection class	IP66

ELECTRICAL PROPERTIES AC Version	
Voltage	24V AC, 110V AC, 230V AC
Frequency	50 – 60 Hz
Maximum dissipation power	≤ 4W
Microswitch	SPDT contact
Power on contact	250V AC, 2A, 500VA; cos(Phi)=1 300V CC, 2A, 60W

ELECTRICAL PROPERTIES DC Version	
Voltage	24V DC
Maximum dissipation power	≤ 4W
Microswitch	SPDT contact
Power on contact	250V AC, 2A, 500VA; cos(Phi)=1 300V CC, 2A, 60W

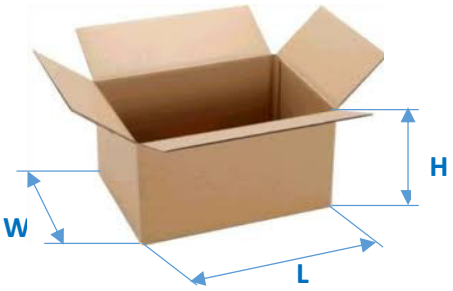
ENVIROMENTAL DATA	
Relative humidity	0..100% suitable for outdoor installation
Altitude	Max. 6,500 ft

PRESSURE (OVERPRESSURES TO RELATIVE ATMOSPHERE)	
Applicable pressure for general applications	- 1.45 / 1.45 psi
For use test	11.60 psi

1.10 PACKAGING DIMENSIONS AND WEIGHTS

Package sizes and weights of the units are given below.

When receiving the units; check if the unit code and quantity are compatible with your order. Possible damages must be reported/informed to the authorized person of cargo/transportation company before taking the goods. The manufacturer is not responsible for any damage that may occur during transportation.



Type	L (in)	W (in)	H (in)	Net Weight (lbs)	Gross Weight (Lbs)
LP220AC	10.24	5.91	3.35	2.43	2.65
LP024AC	10.24	5.91	3.35	2.43	2.65
LP110AC	10.24	5.91	3.35	2.43	2.65
LP024DC	10.24	5.91	3.35	2.43	2.65

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2.

ASSEMBLY-MAINTENANCE CATALOG

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2.1 SAFETY CONDITIONS AND PROTECTIONS

It needs to be kept at nearest position available for the concerned personnel for installation, operation, maintenance, and repair staff.

This catalog is a guide for users. It is the user's responsibility to take all necessary precautions to ensure occupational safety, worker health, and safety of third parties as well as ensuring operations in accordance with local laws and regulations.

In order to perform assembly, maintenance, repair and cleaning on the product, according to 2006/42/EU, 2004/108/EU, 2006/95/EU Directives the user must take all necessary precautions to ensure public safety, safety of the environment and its entities and also take all actions to prevent any harm that may involve third parties.

In case of handling hot material over 140°F, it is the user's responsibility to assemble barriers and warnings in order to secure the workplace.

Apart from normal operating conditions, the product must be in safe position.

This unit may be working on dynamic forces, electrical energy and pressurized air and operates under important level of mechanical risk. Accidents that may arise due to any of the above or any combination of the above may result in catastrophic effects. Therefore, the user is responsible to supply maximum security in all stages and operations.

All related staff should be trained, authorised, and specialised. For all work to be done on the product, other than normal operation, the electrical connection must be cut, all movement stopped, pressurised air supply disconnected and the product must be in good condition and in park mode.

Only fully qualified and authorized electricians should conduct electrical operations. Occupational safety and worker health requirements must be met. Electrical problems and their consequences are out of manufacturers control and are not covered under warranty. The manufacturer cannot be held responsible for any damages to property, persons or third parties, arising from poor electrical workmanship.

The user who is conducting the assembly is responsible for creating electrical circuits that will overcome all risks that may arise due to misuse during start, stop, emergency stop and maintenance.

It is necessary to check the compatibility of voltage and frequency. Operations should be conducted only by knowledgeable and authorised staff. In case air usage is required via pneumatic connections, the user should assemble a system to meet the requirements given on the technical information section.

The electrical earthing of the product must be proper, safety warnings should be clean and readable, and all operations should be according to EN 60204-1:2018 standard.

Before each operation, always ensure that the power is disconnected before commencing. It is vitally important that power on/off button has to be managed by a qualified person to prevent uncontrolled opening and closing.

Make sure that all moving parts are in absolute stop before ach operation.

Always ensure that the dust inside the machine is completely settled.

Operators must use the following protection equipment during the maintenance and cleaning of the machine;

- Antistatic protective clothing
- Protective Helmets

- Antistatic cut-proof gloves
- Safety masks
- Antistatic protective shoes

After assembly, check that all operations are properly and fully completed, all bolts are tightened, all warning labels, barriers and safety accessories are proper.

Do not start operation if the product is not complete and fully mounted. Do not interrupt externally during operation. Never approach while the units are operating. Never let tools, hand, or head to approach to the operating zone during operation.

In case modifications are made without written consent of the manufacturer, no responsibility will be assumed by the manufacturer in case of damage and their consequences.

The product may display different wear and results according to material used and working conditions. Therefore the user is required to develop practices other than those given in this catalog.

During the practice of below maintenance notes, situations that may result in harm to humans or machines or which prevent the product from working may occur. All inspections and maintenance must be done when product is in safe position.

Maintenance staff must be fully qualified. Tools for lifting and stabilizing must be used. No humans must be present during lifting and carrying operations.

It is important to use original parts or parts that have the required specifications.

It is possible that problems may occur, and the product may be declared out of warranty in case maintenance work is conducted without full compliance with this maintenance guideline.

2.2 ASSEMBLY

Please consult assembly instructions, which can be found inside of each product package.

Carefully follow all technical, safety and worker health instructions during the assembly and the operation of the unit.

For right terminal connections of the unit, please double check voltage, frequency, local regulations, and procedures.

Disconnect from all mains before opening the unit.

Start up the unit only when the cover is closed.

Provide protection for relay contacts and output transistors to protect the device against spikes with inductive loads.

A voltage-disconnecting switch must be provided near the device.

In the case of inexpert handling or handling malpractice, the electric safety of the device cannot be guaranteed.

In the case of a defect, the distribution voltage must automatically be cut off by a protective switch so as to protect the user of the device from indirect contact with dangerous electric tensions.

All field wirings must have insulation suitable for at least 250VAC. The temperature rating must be at least 90°C.

Protect the power of the device by means of a fuse.

The device body has to be earthed to avoid static charges. This is particularly important in pneumatic conveying applications with non-metallic containers.

Firmly assemble the unit in the proper way by adding Teflon band on 1 and 1 ½ toothed portion. Electrical connection has to be made according to the specifications given on the electronic card.

Level indicators must be assembled together with connection screws.

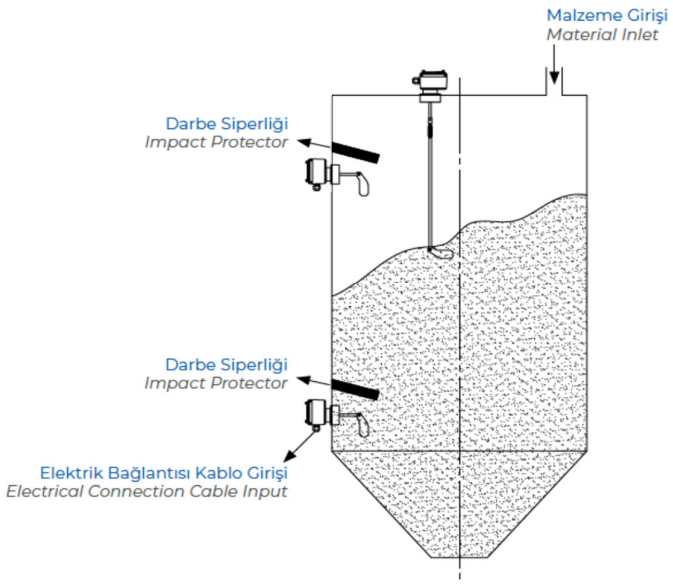
Make sure of the correct orientation of the housing during assembly. Electrical connection cable input should definitely be oriented downwards. Otherwise during severe weather conditions there may be moisture / water could seep and it may cause failure / burn.

Tighten by hand with a gasket made from suitable material. Please do not use impact maker or any equipment could cause damage.

Make sure the electrical connections are made properly and tightly. Setting on the assembled unit is not recommended.

Close the cover when all connections are completed and supply the power. Always check the voltage with a voltmeter.

All electrical connections must be made according to the given connection diagram: make sure the cable is sealed tightly inside the cable gland.



Level indicators are located in positions free from direct material impact and impact protectors should be used.

Extension shafts are available in a maximum of 39”. Maximum 23” should be used for horizontal installation and maximum 39” for vertical installation.

2.3 START UP

Install the unit properly into the system. Make sure the electrical connection is made properly and tightly. Setting on the assembled unit is not recommended.

Before starting up the unit, make sure that no foreign bodies have entered during assembly if they have, remove them.

Run the machine for max 2-3 minutes to observe and listen. Re-check the product and observe if heating has occurred on any component and/or abnormal noise, vibration occurs.

IMPORTANT: All connections should be undertaken by qualified electrical personnel only. Occupational safety and employee health requirements must be complied with. Before conducting any operation on the motor, make sure that the electrical supply is disconnected. The constructor declines to take any responsibility for any damage to property or persons, arising from poor electrical workmanship.

2.4 ELECTRONIC BOARD

The electrical connections are indicated on the unit labels. Always refer to safety standards given in the Manual. Only one of the 24VAC, 24VDC, 110VAC or 230VAC voltages must be connected to the supply terminal.

For 24 VAC, 110 VAC and 230 VAC supply:
The supply voltage must be connected to the “1” and “2b” terminals of the supply terminal indicated with “P2” in the diagram. The (+) end of the power supply should be connected to “2b” and (-) end to “1”.

Motor terminals must be connected to the “24/115/230 VAC” and “0” terminals of the motor terminal indicated with “P1” in the diagram.

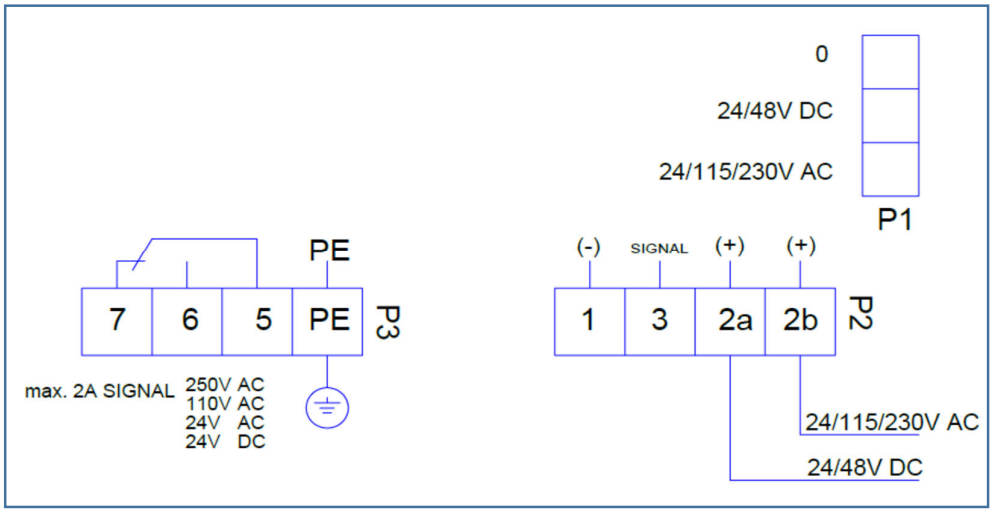
For 24 VDC supply:
The supply voltage must be connected to the “1” and “2a” terminals of the supply terminal indicated with “P2” in the diagram. The (+) end of the power supply should be connected to “2a” and (-) end to “1”.

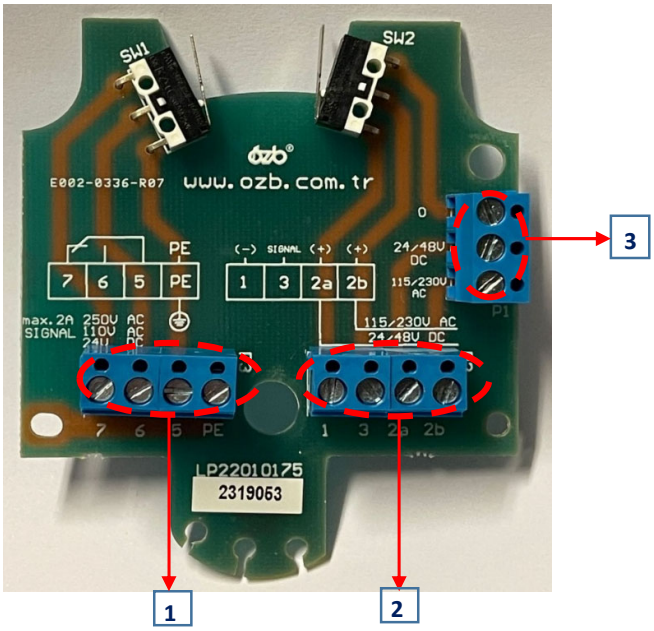
Motor terminals must be connected to the “24/48 VDC” and “0” terminals of the motor terminal indicated with “P1” in the diagram.

The "P3" terminal will be used to receive signals if it is necessary in the field.

Terminal to connect signal leads;
- Normally open contact between “5” and “6”
- “5” to “7” are normally closed contacts.

Max. 2A 24/110V/230 VAC or 24 VDC voltage can be used.


0
24/48V DC
24/115/230V AC
P1
PE
7
6
5
PE
P3
max. 2A SIGNAL
250V AC
110V AC
24V AC
24V DC
(-)
SIGNAL
(+)
(+)
1
3
2a
2b
P2
24/115/230V AC
24/48V DC


SW1
SW2
E002-0336-R07
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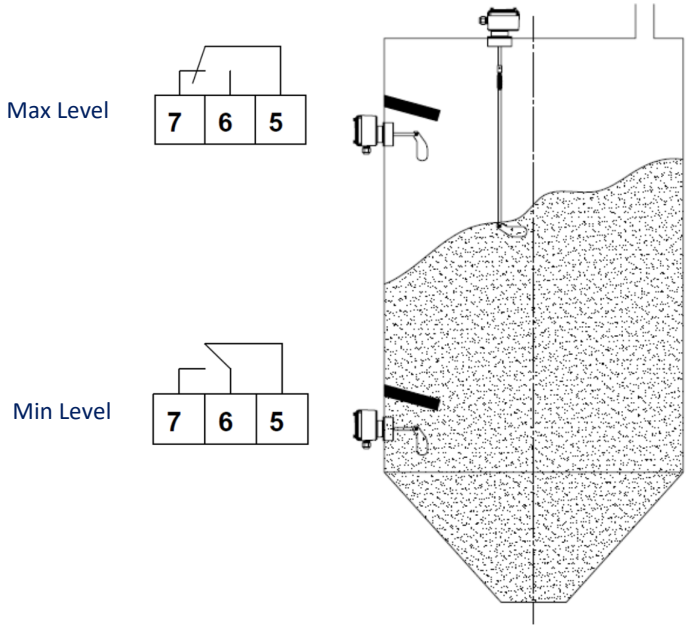
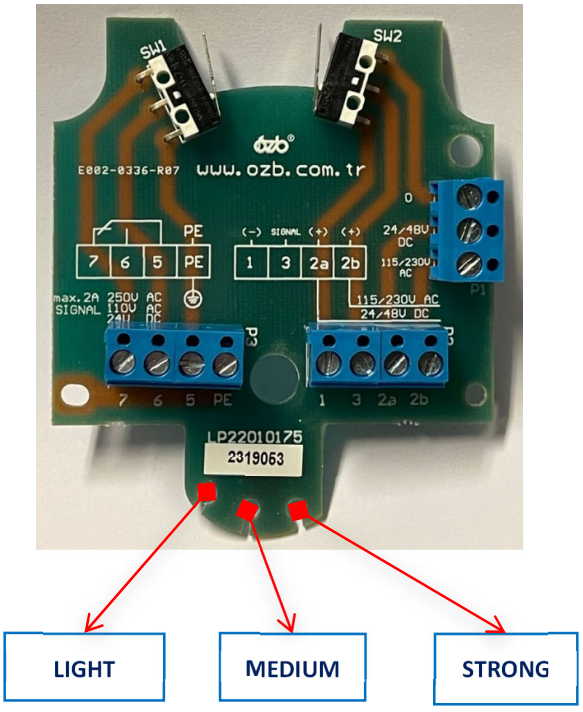
PE
7
6
5
PE
(-)
SIGNAL
(+)
(+)
1
3
2a
2b
0
24/48V DC
115/230V AC
P1
max. 2A
SIGNAL
250V AC
110V AC
24V AC
24V DC
LP22010175
2319053
3
1
2

2.4.1 MAX AND MIN LEVEL ELECTRICAL CONNECTION



2.4.2 SPRING LOCATIONS ACCORDING TO MATERIAL DENSITY

Sensitive adjustment with 3 positions.



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2.5 MAINTENANCE

Before maintenance procedures, all power lines must be disconnected.

Prior to each action, check that the energy lines are cut. It is vitally important to take precautions in order to prevent the on/off button of the power supply from being operated without authorization or control.

In case modifications are done without written consent of the manufacturer, no responsibility will be assumed by the manufacturer in case of damages and their consequences.

The product may display different wear and results according to material used and working conditions. Therefore, the user is required to develop practices other than those given in this manual.

During the practice of below maintenance notes, situations that may result in harm to humans or machines or which prevent the product from working may occur. All inspections and maintenance must be done when product is in safe position.

Supply and use safety equipment and tools that may be required for worker safety.

Maintenance staff must be fully qualified. Tools for lifting and stabilizing must be used. No humans must be present during lifting and carrying operations.

It is important to use original parts or parts that have the required specifications.

It is possible that problems may occur, and the product may be declared out of warranty in case maintenance work is conducted without full compliance to this maintenance guideline.

Before each shift;
Check the unit visually.
Check that the warning labels on the machine are present and in good condition.
Check all the bolts and nuts present and they are tightened.
Check the electric motor cable and the energy connections.

Monthly maintenance;
Check the flag and shaft visually and clean them if there is dust on the unit.

2.6 LUBRICATION

There are not any parts required lubrication.
Bearings do not need greasing.

2.7 REPLACEMENT OF COMPONENTS

If you require spares for your unit, please contact the manufacturer and it is necessary to report all data such as serial number, type etc. which are written on the machine's plate. Do not use non-original parts.

The operator must follow the safety instructions when replacing components; always ensure that to use safety equipment such as protective masks, clothes and footwear, gloves, and helmet.

There are no wearing parts on the unit normally.

Metal parts do not need to be changed except for impact/damage.

The electronic card and electric motor do not need to be changed except for a fault. The number of operating cycles of the switches on the electronic card is 10,000 times.

Bearings must be replaced with new ones at the end of the service life. Bearing life is depending on many variables but can be considered as 8,000-12,000 operating hours.

2.8 DEMOLITION

At the end of the working life of the unit, demolish it according to the following recommendations: plastic parts consigning them to the authorized collection centres.

2.9 DEFINING PROBLEMS AND TROUBLE SHOOTING

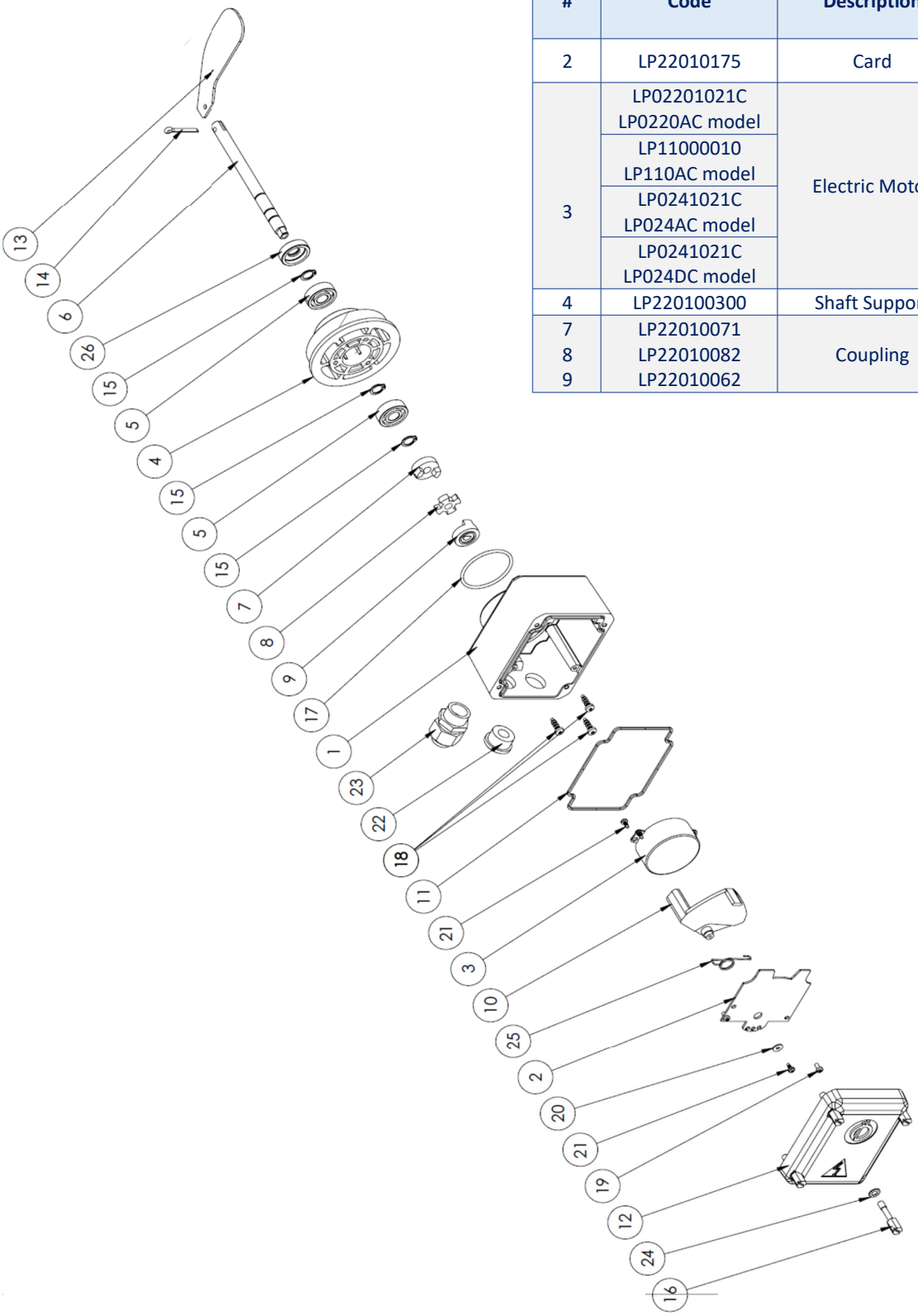
Below are some guidelines regarding problems that may occur during the operation of the product.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Motor runs but no signal arrives	Coupling might be separated The flag might be damaged or loss	Re-locate coupling Re-locate flag
Probe continuously runs	Flag might not touch the material The material density might be low.	Re-position the probe Re-position the tension spring
Motor does not run	Motor might be damaged Electrical wiring wrong	Replace motor Correct electrical wiring

3.

SPARE PARTS CATALOG

If you require spares for your unit, please contact the manufacturer and it is necessary to report all data such as serial number, type etc. which are written on the machine's plate. Do not use non-original parts.



#	Code	Description
2	LP22010175	Card
3	LP02201021C LP0220AC model	Electric Motor
	LP11000010 LP110AC model	
	LP0241021C LP024AC model	
	LP0241021C LP024DC model	
4	LP220100300	Shaft Support
7 8 9	LP22010071 LP22010082 LP22010062	Coupling

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