

PORTFOLIO

Highlights

KNOW-HOW
ENGINEERING

ENGLISH EDITION

NEW PRODUCTS AND SOLUTIONS OVERVIEW

Since 1960 **ODE** has been providing customized design and production of **solenoid valves** for manufacturers following our fundamental principles of quality, adaptability and reliability.

The current product portfolio, including a wide range of solenoid valves, results from the continuous refinement of **technical innovations** to reflect the needs and practical experiences of our customers.

More than 50 years of experience in fluid control systems allow us to satisfy several sectors like **Vending and Coffee machines, Car wash, Automation, Medical, Food and Beverage, Chemical and Water Treatment.**

This is not the end of the story
but only the beginning!

WE ARE READY FOR THE FUTURE.

AN OVERVIEW OF US

“YOUR GATEWAY TO EXCELLENCE”

This is more than **ODE** company claim. It's our approach to the work life, dedicated to our clients and partners. **It's what we believe in.**

THIS IS WHAT WE...

DO

KNOW
ABOUT

CARE
ABOUT

ARE ALL
ABOUT

We support **innovation** and **research** excellence, and provide exceptional products and solutions.

An uncompromising focus on quality, reliability and innovation is **our promise** to **our customers.**

PRODUCT RANGE



DIRECT ACTING

A wide range of 2-way and 3-way direct acting solenoid valves, NC, NO, with reliable and proven design for high performance and available in different body materials: brass, stainless steel, PPS.

CONNECTION

G 1/8, G 1/4, G 3/8, G 1/2, 1/4 NPT, 1/2 NPT, Flange

PRESSURE

0-100 bar



INDIRECT ACTING

A wide range of 2-way indirect acting solenoid valves, NC, NO, for high flow rates, with pilot control for proper fluids handling.

CONNECTION

G 3/8, G 1/2, G 3/4, G 1 1/4, G 1 1/2, G 2, G 2 1/2, G 3, 3/8 NPT, 1/2 NPT, 3/4 NPT, 1 NPT, 1 1/4 NPT, 1 1/2 NPT, 2 NPT, 2 1/2 NPT, 3 NPT

PRESSURE

0,1-100 bar



COMBINED ACTING

A wide range of 2-way combined acting solenoid valves, NC, NO, for proper fluids handling.

CONNECTION

G 3/8, G 1/2, G 3/4, G 1, G 1 1/4, G 1 1/2, 1/4 NPT, 3/8 NPT, 1/2 NPT, 3/4 NPT, 1 NPT, 1 1/4 NPT, 1 1/2 NPT

PRESSURE

0-20 bar



ATEX

Solenoid valves with ATEX certification, designed for use with potentially explosive atmospheres as per Directive 2014/34/UE.

Available in different materials: brass, stainless steel and aluminum.

Direct, indirect and combined acting.

Available versions: Ex d, Ex m and Ex nA.



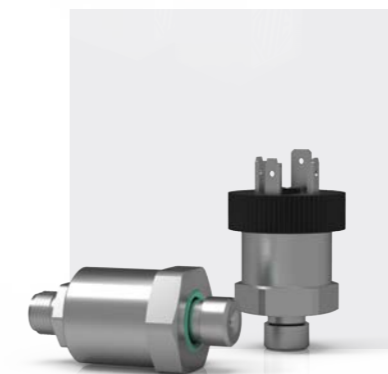
TOTAL SEPARATION

Solenoid valves particularly suitable for the proper handling of **aggressive** or **non-contaminable fluids**.

The fluid is solely in contact with the valve body and the isolation elements, hence free from any kind of chemical contamination.

Particularly suitable for applications in the food and beverage, chemical and medical environments.

Available in different materials: PSU and aluminum.



PRESSURE TRANSDUCERS

Pressure transducers generate an electrical output signal proportional to the inlet pressure.

The ceramic sensor detects the pressure of the most common fluids: air, water, gas, steam and light aggressive media.

PT Series fulfil the requirements of the EMC Directive.

CONNECTION G 1/4, 1/4 NPT

PRESSURE 1-400 bar



TECHNOPOLYMER RANGE

DIFFERENT MATERIAL DIFFERENT SHAPE

Our products are realized with PPS (polyphenylene sulfide) 40% glass fiber reinforced. PPS is one of the most important high temperature thermoplastic polymers which provides high performance features in terms of heat transfer, chemical and mechanical resistance. These properties include resistance to heat, acids, alkalies, mildew, bleaches, aging, sunlight and abrasion.

AM / JM / AP / JP SERIES

ODE is now able to offer a complete customizable valves or manifolds range in technopolymer as alternative to conventional stainless steel and brass materials.

SOME ADVANTAGES

- **ENHANCED CHEMICAL** RESISTANCE
- **LIGHT WEIGHT** DESIGN
- **WIDE RANGE** OF CERTIFICATIONS
- **REPEATABILITY** PRECISION
- **HIGH TEMPERATURE** PERFORMANCE
- **HIGH MECHANICAL** PERFORMANCE



AM SERIES

AM Series solenoid valves are designed to work with the following kits: 2-way NC, 2-way NO and 3-way NC. The M.O.P.D. for this series is 16 bar. The available seals are FKM (temperature range between -10°C and +140°C) and NBR (temperature range between -10°C and +90°C)



JM SERIES

JM Series solenoid valves are equipped with **different inlet and outlet connections**. For this reason it is possible to connect different types of tubes: PTFE and PA tubes with Push-In connections, silicon tubes with hose connections, PTFE tubes with rapid connections and G 1/8 (male and female) to connect the various types of connectors, which can be added depending on the needs.



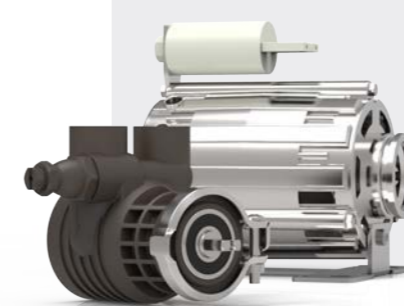
JP SERIES

The main characteristic of JP Series solenoid valves is the **extreme compact size**. These valves are available in 2-way or 3-way NC, and work with coils 2.5 W as well as 5W for energy savings purposes and lower operating temperatures. The JP Series is available with Push-In connection, that allows fast and safely pipes connection without using additional fittings, locking keys and glues or sealing gaskets.



AP SERIES

AP Series is a natural extension to complete the products range of solenoid valves with **bigger nominal sizes**. Also this Series is available with Push-In connection.



ROTARY VANE PUMP

MOCAREEL® represents an important innovation in the ODE product range thanks to the use of PPS, carbon graphite and stainless steel materials.

The technopolymer body has similar features to those of metal bodies. The use of PPS (technopolymer) ensures the achievement of specific food grade certifications such as NSF and European Regulation No. 1935/2004.

MOCAREEL is also available for specific couplings with electric motors by means of a special built-in shaft and a 1 3/4 inch clamp.

PUSH-IN CONNECTIONS

The Push-In fitting system stems from the **need for quick connections** with small polymer hoses where a threaded fitting would not be possible.

These connectors allow the valve to be connected instantly by gently pressing on the hose.

TECHNICAL FEATURES

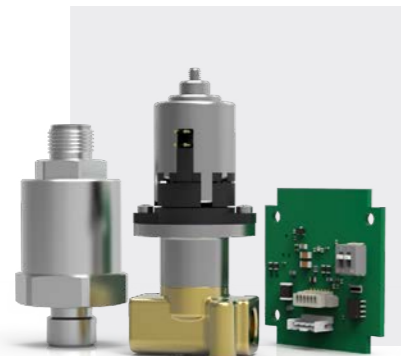
- EASY TO CONNECT
- ECONOMIC ADVANTAGE
- HIGH QUALITY MATERIALS
- REDUCTION IN MATERIAL WEAR
- CLIP





PROPORTIONAL SOLUTIONS

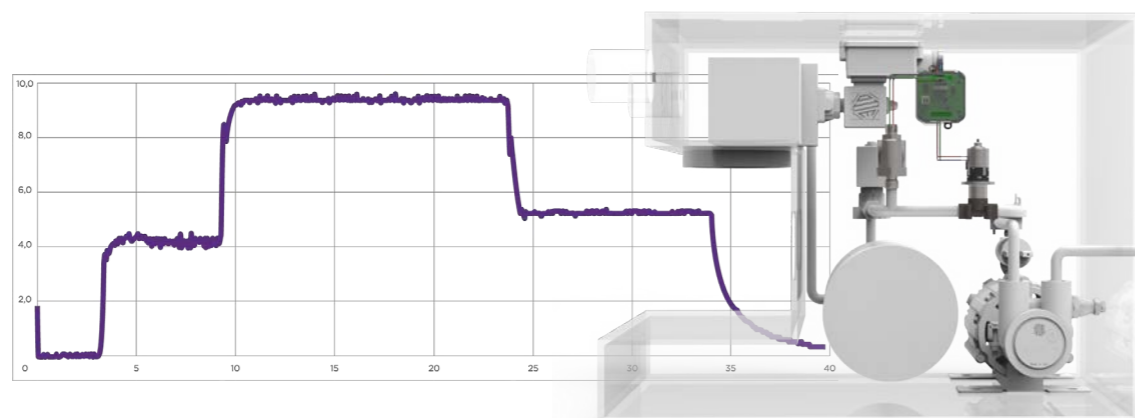
Motorized proportional valves are suitable when it's necessary to dispose of different flow rates.



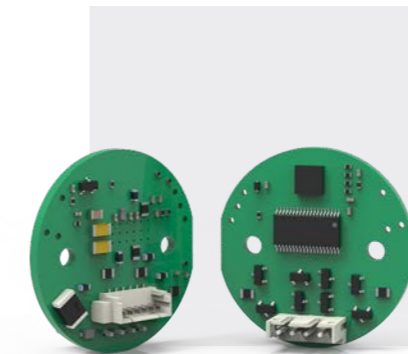
DPS DYNAMIC PRESSURE SYSTEM

APPLICATION PROFESSIONAL COFFEE MACHINES, SUPER-AUTOMATIC AND VENDING MACHINES
A three-element system: **stepper motor valve, driver and pressure transducer**. Combined together these three elements give rise to a system that can change the brewing pressure in a few hundred of milliseconds and with a precision never seen before.

DPS adjusts the brewing pressure in a dynamic way, depending on a specific target coming from the electronic control of the machine. This system can easily be interfaced with the electronic of every machine.



TYPICAL PRESSURE PROFILE



DRIVER ACTUATORS

The electronic driver can be programmed to control **circuits** in a closed loop or in an open loop. In the first case the aim is to regulate the flow respect a target, using a feedback that comes from a sensor (e.g. pressure, flow, temperature). In the case of open loop the aim is to regulate the flow proportional to a control signal, that originates from the host system.



MOTORIZED EXPANSION VALVE

APPLICATION HVAC - R
Proportional valve powered by a stepper motor and controlled by a driver unit, for a proportional control of fluid flow rates. Construction suitable for high pressure and low-pressure applications.
AVAILABLE OPTIONS mechanical strainer, sight glass, connector for a fast installation.
“GREEN SOLUTION” valve designed to be used in transcritical or sub-critical CO2 installations.



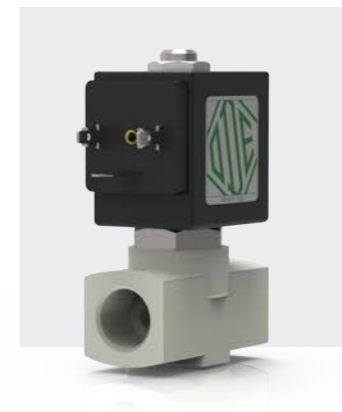
MOTORIZED PROPORTIONAL

APPLICATION PRESSURE/FLOW RATE REGULATION, MIXING
The stepper motor valve technology is aimed to control process variables or parameters in two different ways, by means of open loop or closed loop. Thanks to a stepper motor it is possible to **reduce hysteresis effects**, as well as **to improve the response times and the repeatability** through time of the performance. These valves can be 2-way or 3-way. These valves are managed by a driver unit that allows a precise and fast control of the valve.

HIGH FREQUENCY VALVES

High Frequency Valves are the key solution for all the **high cycling** or high performance applications and **long life mechanism**.

The main feature of these valves is the elevated number of work cycles, which make them suitable for textile machines, sorting and quality control. It is a high flow rate valve despite its small and **compact size**.

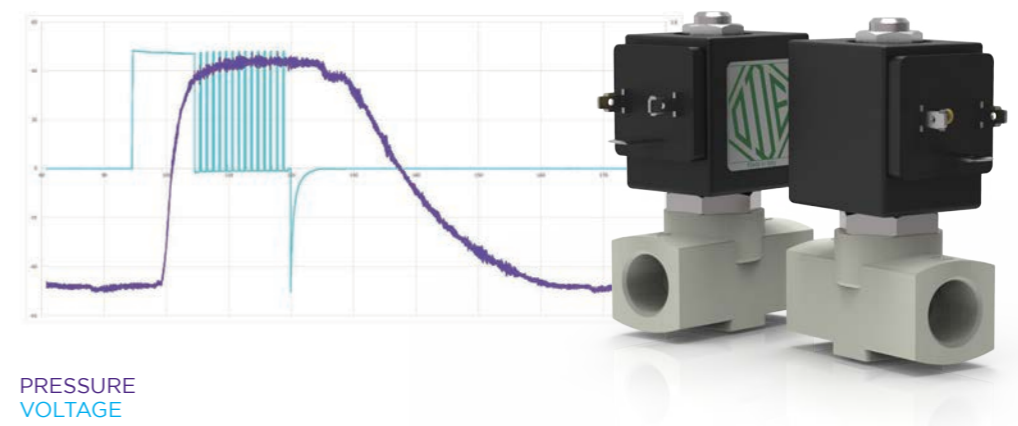


VALVE MAIN FEATURES

- **LONG LIFE** (Over 1 Billion Cycles)
- **HIGH SPEED** (Opening and closing - 25 Hz)
- **LARGE ORIFICES** (Up to 9 mm)
- **HIGH PRESSURE** (6 bar)

OPERATING RANGE

- **0-6 BAR**



PRESSURE
VOLTAGE



PNEUMATIC ON-OFF VALVES



IZ1 SERIES

A new series of **angle seat valves** constructed with top-quality and corrosion-resistant materials: a complete range of 2-way valves available in normally closed, normally open and double-acting configurations, with above/below seat flow direction.



EZ1 SERIES

The new EZ1 range, in combination with the IZ1 Series, completes the range of angle seat valves. This series is featured by a stainless steel AISI 304 body, anodized **aluminum actuator** and PTFE seating seal and it is solely available with actuators type “double acting with spring (NC)”.



IZ3 SERIES

This modular series completes the range of pneumatic valves. A single IZ3 valve can be easily converted into a **modular solution**. This allows to create the right manifold for the specific application, according to customers' needs.



SH SERIES

A new range of **coaxial shuttle valves**, which main features are the minimized pressure losses, thanks to the special body design, that enables compact weight and dimensions and the NAMUR mounting interface.

A complete product range to expand ODE portfolio with additional families. From angle seat valves to coaxial shuttle valves and their accessories.



“Y” FILTERS

The new FIL100 Series, featured by an angle seat design “Y”, functionally operates by means of **collecting impurities** along the pipes. Its task is **to protect** plant sections or equipments installed downstream.



ELECTRICAL POSITION INDICATOR

The new **Electrical Position Indicator**, that can be **installed on all pneumatic angle seat valves series 21IZ1 and 21IZ3**, allows to monitor the opening and closing valve status through a local visual control (LED) or remotely via electrical signal.



STROKE LIMITER

This new device, **available only preassembled onto the valve**, can be **installed on all ODE pneumatic angle seat valves series 21IZ1/21IZ3**. Its function is to influence the plug position by limiting the stroke of the valve and consequently by adjusting the flow rate through the valve combined to it. In case of lack of pilot pressure or due to mechanical/electrical failures it can act as emergency manual override.

SELF-ACTUATED VALVES

The new range of self-actuated valves expands the ODE products portfolio to meet every need in the fluid management field.

The range of Pressure Reducers, Overflow Valves and Filter Pressure Reducers is **highly customizable**. Self-actuated valves allow a flow to be regulated with no need of an external power source as they use only the power generated by the fluid itself.



PRESSURE REDUCERS R SERIES

These valves regulate the outlet pressure typically connected in line with the main circuit, which function is to stabilize the downstream pressure.



OVERFLOW VALVES S SERIES

These valves regulate the inlet pressure, typically connected in derivation to the main circuit, which function is to normalize possible overpressures.



FILTER PRESSURE REDUCERS FR SERIES

These products combine the regulating function with a filtering stage through the use of a cartridge of sintered material.

CONTROL AND AUTOMATION +SMART

CODESYS

Codesys is the programming tool especially designed to fulfil the many different requirements of modern industrial automation projects. The **IEC 61131-3** programming tool is the heart of CODESYS.

It offers integrated, user-friendly solutions to support users in developing their tasks.

The software includes the following elements: editors for all IEC programming languages (AWL, ST, CFC/FUP, etc.); extensive libraries with modules (counter, timer, controller, etc.); tools for testing, simulation, error search and debugging.



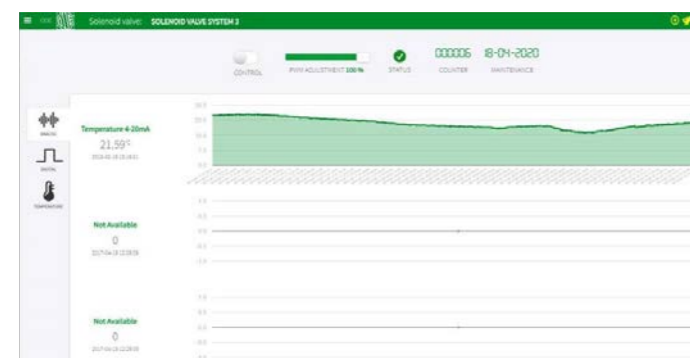
+SMART ONE

+SMART is a completely new product in the market of solenoid valves. This system allows the development of any application in a simple and intuitive way, as well as **control, monitoring** and **wireless operation** of the solenoid valves applied.

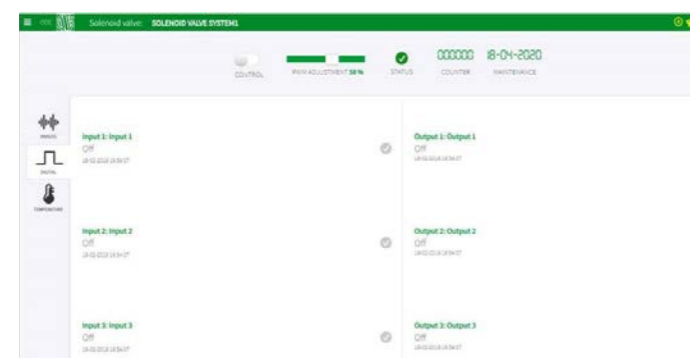
The main features include the integration of a PLC with the Wi-Fi system through which it is possible to manage a control terminal block for digital inputs/outputs.

CLOUD PLATFORM

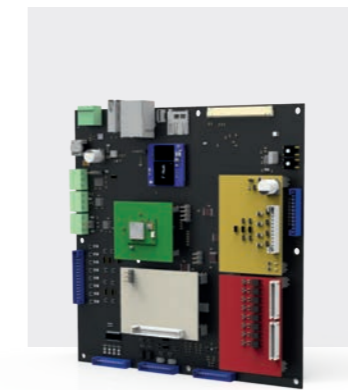
ODE has created its own cloud platform through which customers can **monitor the activities** and the parameters of the solenoid valves installed in any application. The secure transferring of data is an ideal base for several standard application.



ANALOG INPUT



DIGITAL INPUT



+SMART CUBE

+SMART CUBE is the intelligent control choice to meet the demands of market from primary and secondary to end of line solutions. **Real-time communication** is the standard with an integrated ETHERNET bus with expandable I/O that allows **flexibility** when changes to machinery requirements are necessary. The scalable CPU allows to upgrade/downgrade performance and can be adapted precisely to the respective application.



+SMART COMPACT

+SMART COMPACT is an extremely compact solution. It can easily be **housed in sensors** or other **small devices**. Thanks to a powerful CPU, it can process signals from external devices adding other information to the measurement. All the information processed on the device can be sent by Wi-Fi connectivity to a cloud platform.



OUR ENGINEERING MINDSET

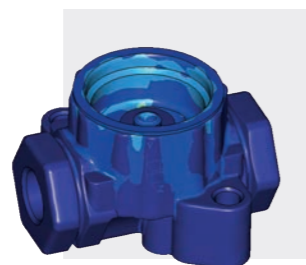
ENGINEERING

- **CO-DESIGN** WITH THE CUSTOMER;
- DEVELOPMENT OF **TAILORED SOLUTION**;
- **CONTINUOUS** IMPROVEMENT;
- **DOE** (DESIGN OF EXPERIMENT) **APPROACH**.

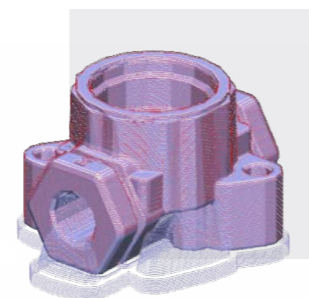
SOFTWARE TOOLS



3D
MODELLING



FEM
SOLUTION



FAST
PROTOTYPING

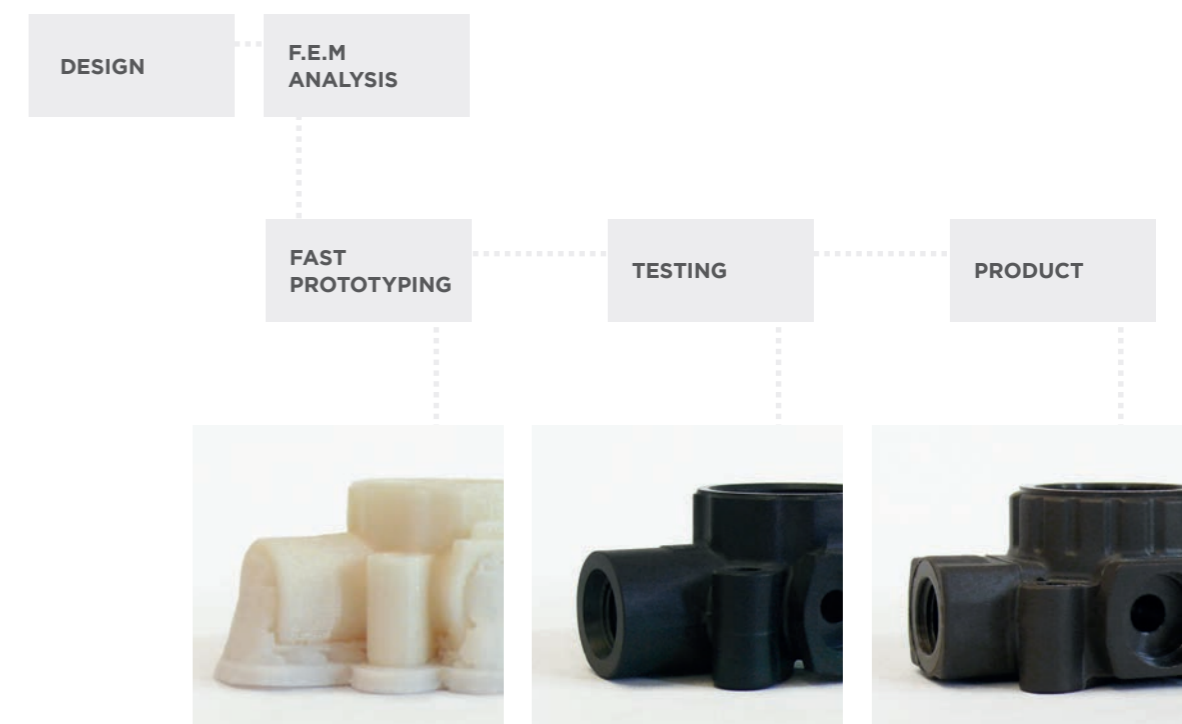
MODELLING:
CREO ELEMENTS (3D)

PROJECT IMPROVING:
COMSOL MULTIPHYSICS
CREO SIMULATION

FAST PROTOTYPING:
CAD/CAM.
3D PRINTING

FROM PROTOTYPING TO PRODUCT

The technical department uses cutting-edge systems with 3D design, Comsol and Design of Experiments software, which fasten the design-to-product process. The availability of in-house tools such as **rapid prototyping** and **3D printing** enable customers testing the prototype's integration in their system, **prior to the finished goods**.



CERTIFIED LABORATORY

The idea of quality has always been part of ODE culture.

The approval of the most important certifying bodies, such as **VDE**, **UL** and **IMQ**, ensures that laboratory equipment and personnel are **top quality**.



CONTACT INFORMATION

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