



DVG AUTOMATION

the excellence in flow control automation



Intelligence TOTAL **ITVC**
VALVE controller

CERTIFICATION AND CONFORMITIES

ENVIRONMENTAL PROTECTION

Full operating ambient temperature -45°C up to +85°C

Dust and Proof protection according EN 60529, grade IP 68

Vibration resistance level according to IEC 60068-2-6

Seismic resistance level according to IEC 60068-2-27

HAZARDOUS AREA CLASSIFICATION

Certification ATEX EX IIB with protection marking



II 2GD Ex db IIB+H2 T5 Ex tb IIIC T88°C -45°C ≤ Tamb ≤ +85°C

In compliance with

EN 60079-0 Explosive atmospheres - Part 0: Equipment - General requirements

EN 60079-1 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

EN 60079-31 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

Trade Marks

DVG automation has used all reasonable resources and efforts to indicate and supply information regarding Registered Trade Marks® and Trade Marks™ used in this document. The absence of a Registered Trade Mark® or a Trade Marks™ identifier does not mean that a given word or technology is not a Registered Trade Mark® or a Trade Mark™. We acknowledge that all Registered Trade Marks® or Trade Marks™ mentioned in this document, either with or without identifier, are the property of their respective owners. Upon advise that we have erroneously omitted to identify Registered Trade Marks® or Trade Marks™ we will rectify this document immediately

CERTIFICATION ACCORDING to EUROPEAN DIRECTIVES

ATEX Directive 94/9/EC certified

IECEX in progress

EMC DIRECTIVE 2004/108/CE

In compliance with

EN 61326-3-1 Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) ...

EN 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General

FUNCTIONAL SAFETY

Suitable for use in application with safety level up to SIL3 according to IEC61508-3

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LINE BREAK

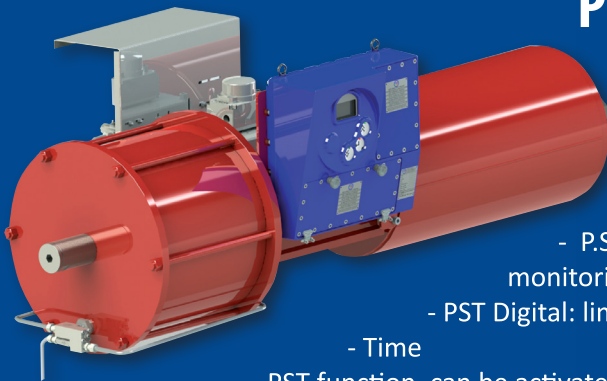
Typical application: Gas Hydraulic, Direct Gas actuator.

The ITVC includes a rechargeable lithium-ion battery which ensures one piston stroke of the actuator within 10 days from loss of supply voltage.

Diagnostic function.

Data can be called up as graph within 6 months from event (data logger).

Up to 3002 pressure detection system.
SIL 3.



PST function

Typical application: Pneumatic, Hydraulic, Gas Hydraulic, Direct Gas, Electro Hydraulic, either single or double acting, linear or quarter turn and Electric actuator. P.S.T. can be carried out based on the following setting:

- P.S.T. Analog: continuous position monitoring (4-20mA)
- PST Digital: limit switch
- Time

PST function, can be activated locally or remotely. Automatic test can be carried out at settable time interval.

All Data and events can be called up as graph (data logger).

HPU Hydraulic Power Unit controller

The ITVC is the electronic logic controller which can control and activate the main HPU functions: Local / Remote Operation, ESD Function, Motor / Pump Control, Monitors Operating Pressure and Oil Level, Diagnostics, Actuator Solenoid Valve Coil Test every 8 hour as per the latest requirements of IEC-61508 to achieve SIL 3).

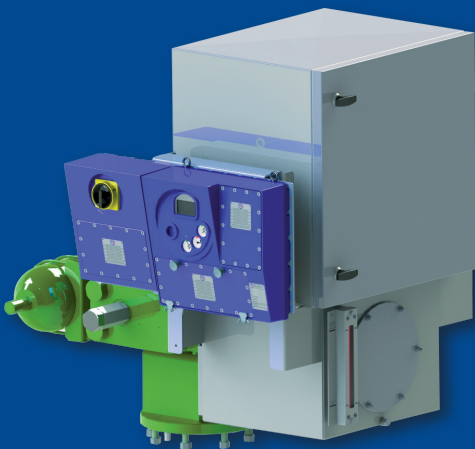
Remote Control: via field protocols or hardwired.

PST function.

Local control.

Local Shutdown / Emergency push button.

Line Break.

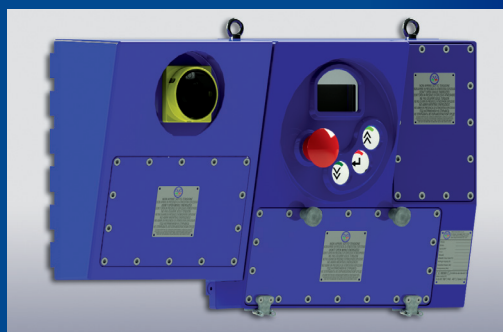


INTELLIGENT UPGRADING for "non intelligent" existing actuators electric and / or piston

ITVC controls existing actuators using existing 4-20mA analog position / torque signal or existing position / torque switches.

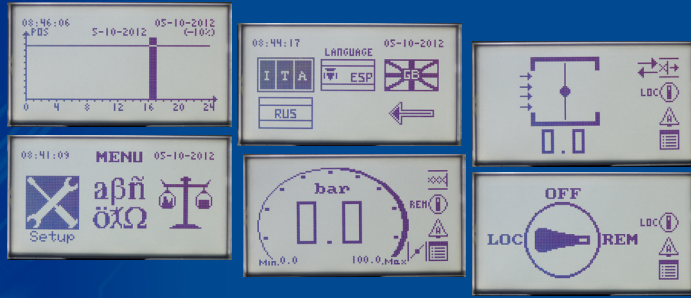
Added features:

Monitor relay / Local selector status / Limit switch status / P.I.D. Control / PST Function / LINE Break / ESD / Panic Button.



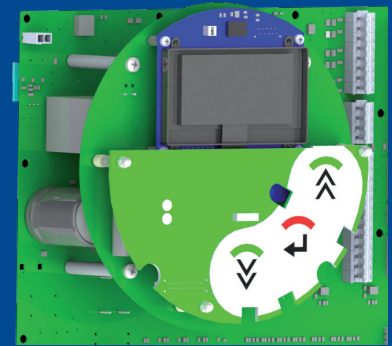
LOCAL INTERFACE

- Local Control through 3 capacitive push bottom with LED
- LCD Graphic Display 128x64 dots (working temp. range -45°C + 85°C).
 - Programmable Panic Button (push or pull to activate)
- New generation Local / REM /OFF Selector, activated with (level 2 or higher) password through the touch push button.



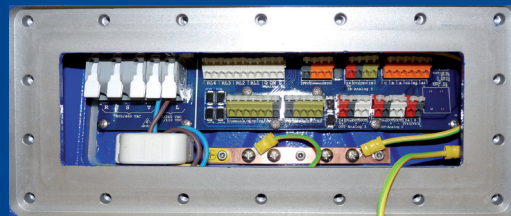
MAIN FEATURE

- New Generation Microprocessor 32bit.
 - Safety function components are dual redundant.
- 2 off redundant Microprocessor, with auto monitoring feature (as per the requirements current IEC-61508 SIL 3).
- Internal memory 24Mbit / MRAM Magneto Resistive Random Access Memory with unlimited write endurance .
 - All INPUT / OUTPUT Signals are OPTO isolated.
- Data collection via Fieldbus: 485 serial port MODBUS RTU (HART™, Foundation Fieldbus™ and Profibus™ in progress), Bluetooth only for Device configuration.



CLIENT INTERFACE

- 7 off Digital Input (Voltage 24 V AC / DC to 130 V AC / DC): Open / Close / Stop / Automatic / Interlock, P.S.T. etc.
- 1 off Digital Input (Voltage 24 V AC / DC to 130 V AC / DC) ESD.
- 1 off Analogue Input (set point).
 - 2 off Analogue Output configurable (position / pressure, ...).
 - Monitor Relay.
- 4 off Independent and Configurable Relay (Max Pressure Drop, Max Pressure Rise, Warning, Line-Break, High Pressure, Low pressure, Wrong direction, No supply, Position not reached, Low battery, Low oil level, Selector rem, Selector Loc, Selector Off, L/S PST, L/S Open, L/S Close).
 - Terminal blocks without screws, ideal for applications subject to vibration.
 - Multilanguage menu (Italian, English, Spanish, Russian, ...).
- Menu activated with (level 2 or higher) password through the touch push button.



INPUT-OUTPUT I.T.V.C./ACTUATOR

- 4 off (4-20 mA) analogue inputs; i.e. pressure, position, HPU oil temperature, etc...
 - Up to 8 digital output for 24 VDC, solenoid valve control.
- Up to 3 digital output, relay, for other voltages 24VDC - 120 VAC solenoid valve.
 - 4 off digital input (limit switches, ...).

HOUSING MATERIAL

- Painted Anodized aluminium
- Stainless Steel 316L (CF3M)

MULTI TENSIONAL DEVICE POWER SUPPLY

- 90 - 260 V AC (+/-10%) - 50 / 60 Hz
- 24 - 110 V DC (+/-10%)

