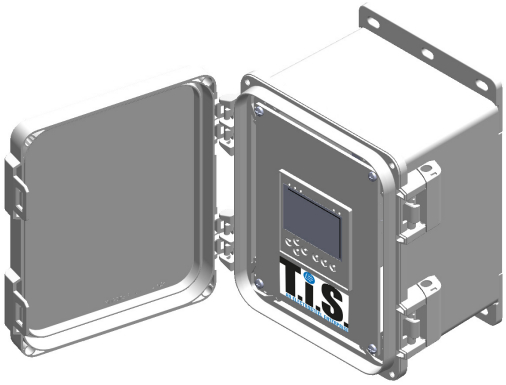
IDC • SMART AND COMPACT VALVE MICROCONTROLLER



T.I.S. IDC is a family of compact, intelligent, and flexible controllers, open to communication with various remote units and also available with cloud connectivity: controlling and visualizing your application just got easier.

T.I.S. IDC is designed as a controller for automatic diaphragm/piston control valves and needle valves, with an open, modular system and preloaded applications for the main control functions, customizable according to the end user's requirements.

The range of applications that can be implemented with T.I.S. IDC is more versatile than ever, both in the classic version with touchscreen display and the recent compact "Light" version, with an integrated display and robust touch controls.

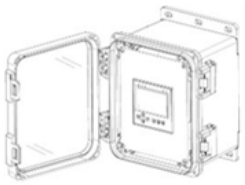
Valve control is finally open and based on curves or setpoints that can be configured simply and intuitively. Multiple PID controllers, including self-tuning, allow for accurate, continuous positioning of actuators or management of digital outputs (solenoid valve controls).

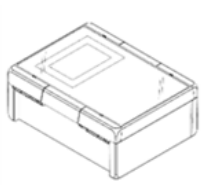
The operating logic is created using intuitive standard languages: "Function Block Diagram" (FBD) or "Ladder Diagram" (LAD).

The availability of multiple analog and digital inputs allows IDC to be fully adaptable to various control applications and customer-specific customizations. It can also process alarms, such as flooding signals, threshold violations, etc.

Each microcontroller is housed in a robust ABS enclosure for wall mounting, certified to IP68.

TECHNICAL SPECIFICATIONS





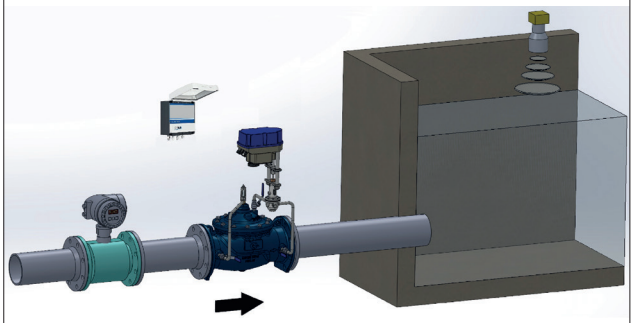
Functions and Features	IDC Light	IDC Classic
REGULATION FUNCTIONS		
Flow rate regulation	■	■
Upstream pressure regulation (sustaining)	■	■
Downstream pressure regulation (reducing)	■	■
Valve opening regulation	■	■
Regulation with day/night time setpoint	■	■
Regulation with multipoint time setpoint	□	■
Flow rate regulation based on the tank level	□	■
Pressure regulation based on flow rate	□	■
Customization upon customer request	■	■
TECHNICAL CHARACTERISTICS		
Approximate dimensions LxWxH	260x185x280 mm	285x160x365 mm
Power supply	230 VAC/ 24VDC	12-24 VDC
Controller power consumption	15 VA/W	10 W
HMI power consumption	-	15 W
Display	3,5" Color	7" Touchscreen (*)
Tactile buttons	■	□
Enclosure protection rating	IP68	IP68
Temperature range	-20..+55 °C	0..+50 °C
Real-time clock with battery backup	■	■
Configurable data logging	■	■
INPUTS OUTPUTS (**)		
Digital inputs	8	8
Digital outputs	8	8
Analog inputs	4	6
Analog outputs	2 (4-20mA/0-10V)	4 (4-20mA/0-10V)
COMMUNICATION		
Industrial Ethernet Port 10 / 100 Mbit/s (Modbus TCP/IP)	1	1
USB Port	1	1
RS485 Port (Modbus RTU)	2 (Master/Slave)	1 (Master/Slave)
CAN Port	-	1

(*) The touchscreen display size may vary based on the availability of new hardware.

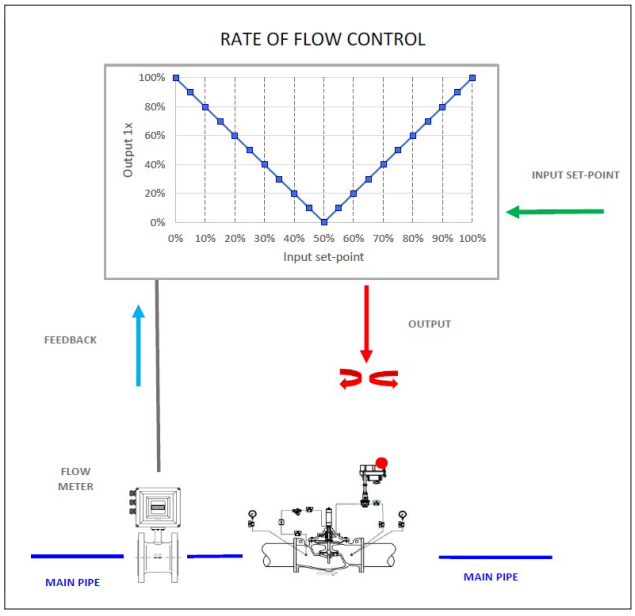
(**) The number of available I/Os can be expanded with additional modules or otherwise vary based on the availability of new hardware.

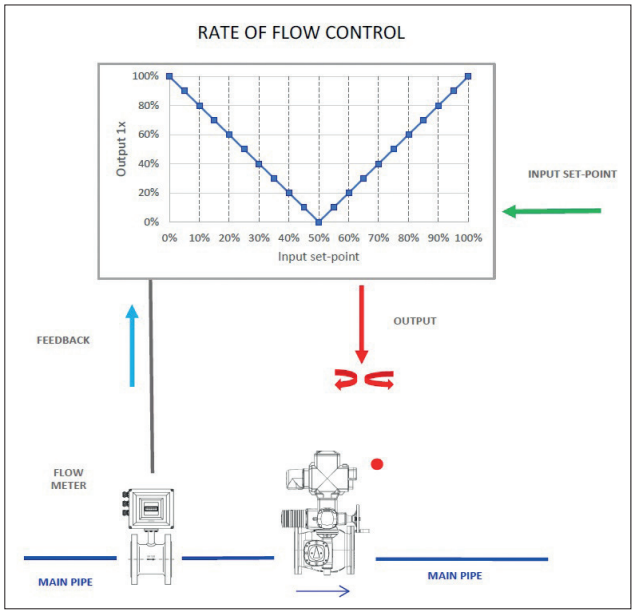
INSTALLATION EXAMPLE

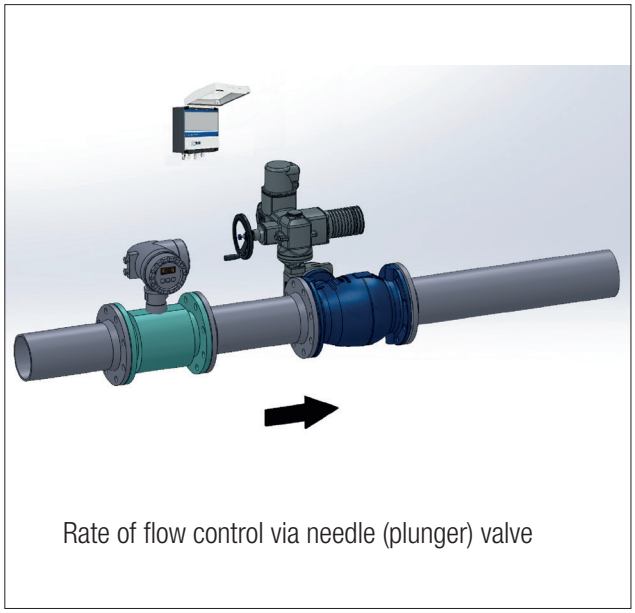
- RATE OF FLOW CONTROL;
- RATE OF FLOW CONTROL BASED ON SUPPLIED TANK LEVEL;
- BLENDING;
- PRESSURE CONTROL;
- PRESSURE CONTROL BASED ON SUPPLIED TANK LEVEL;
- OPENING DEGREE REGULATION.



Rate of flow control according to tank level
via automatic control valve.



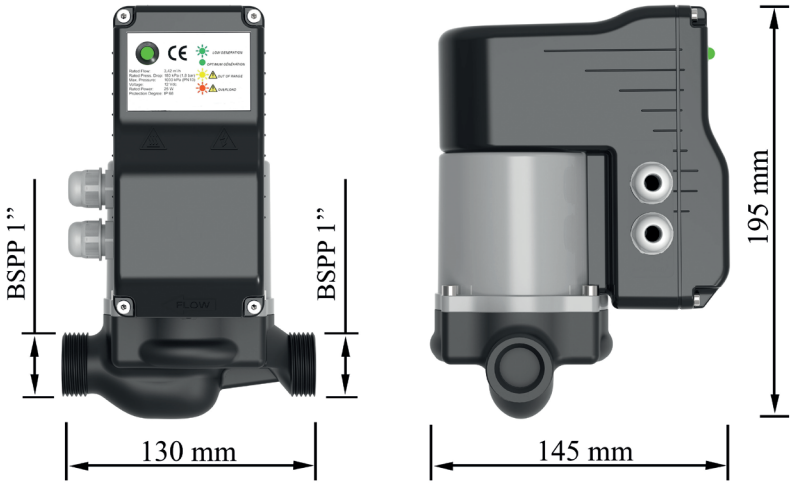




Rate of flow control via needle (plunger) valve

NUOVAL LINE

SELF-POWERED VERSION ACCESSORY: MINI-TURBINE FOR BATTERY PACK CHARGING



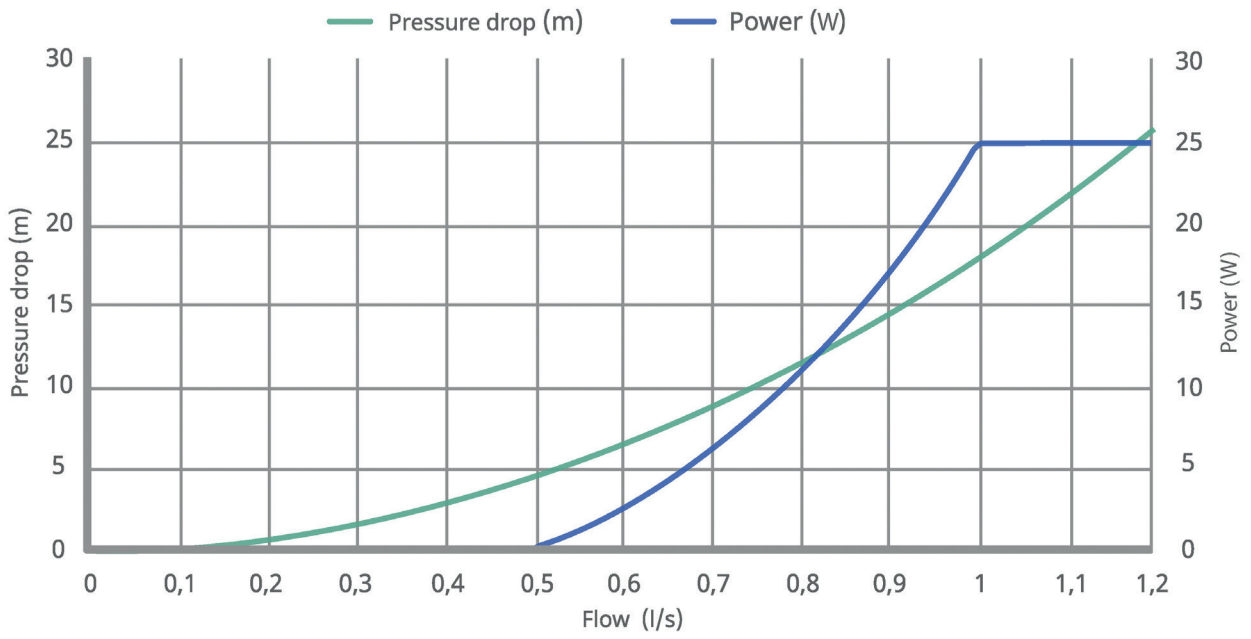
ELECTRICAL SPECIFICATIONS

Generator type	Brushless
Nominal output voltage	12 V
Maximum output current	2 A
Maximum output power	25 W
Allowed batteries	Lead-acid Sealed
Allowed batteries capacity	9-45 Ah
Output control	Output for EV control latch type of 2 wires
Status signalling	Built in status led light. Status digital output (1), free potential transistor output (suitabie for PLC or datalogger inputs)
Minimum voltage of battery V1	10,5 V
Timed ignition voltage V2	12,5 V
Instant ignition voltage V3	12,3 V
Minimum full-charged voltage V4min	14,6 V
Minimum full-charged voltage V4max	15,0 V
Minimum operation timing T1	20 minutes
Security timing T2 (timed ignition)	5 minutes

HYDRAULIC SPECIFICATIONS

Nominal pressure	10 bar (PN10)
Minimum Δ pressure inlet-outlet	0,45 bar
Maximum Δ pressure inlet-outlet	1,8 bar
Δ absolute maximum pressure inlet-outlet ΔPmax	2,0 bar
Minimum flow	0,50 litres/second
Maximum flow	0,95 litres/second
Absolute maximum flow Qmax	1,00 litres/second

MINI-TURBINE OPERATING RANGE CURVES



MECHANIC SPECIFICATIONS

Enclosure protection	IP68
Nominal pressure	10bar (PN10)
Inlet / outlet diameter and thread	15mm, BSPP 1"
Free passage of solids	Maximum 1 mm
Net weight	2,7 kg
Dimensions	130 x 145 x 195 mm

COMPONENTS MATERIALS

Hydraulic body	Cast steel
Impeller	Noryl
Rotor	AISI 316 Stainless steel
Gasket	EPDM
Shafts	Ceramic
Bearing	Fluid refrigerated ceramic

PROTECTIONS

Battery cut off (low battery protection)	10,5 V
Overvoltage	Electronic protection
Generation overload	Fuse #1 of 0,5 A
Overcurrent, short-circuit electrovalve	Fuse #2 of 2,5 A
Overcurrent, battery short-circuit	Fuse #3 of 3,0 A
Reduction of power due to heating	Depending on battery voltage and ambient temperature

ENVIRONMENT CONDITIONS

Working temperature	-20 °C to +60 °C (power reduction from 50°C)
Working humidity	10 % ~ 90 % non-condensation

216/42/CEE, 2004/108/CEE, 2011/65/CEE, EN 12100-1/2, EN 14121-1/2007