



# IM SIL4 INTERLOCKING MANIFOLD

FOR HIPPS SYSTEMS



# COMPANY



Set up in 1987, located in Italy, near Milan, Indra Srl is a 100% Italian manufacturer of valves, mainly ball and needle valves in various configurations and diameters, from the integral monobloc versions, double block & bleed and split body, instrumentation manifold to interlocking manifold. Core business products are DBB & SBB, high pressure, cryogenic valves and Intelocking Manifold. Characteristics of the company are the "made in Italy" production and a "Tailor made" approach.

All production phases, from engineering, mechanical processing and testing, are carried out in-house, with a high level of control over all phases, which allows us a very rigorous level of quality of our products. Our products are widely used in the oil & gas, petrochemical, offshore platforms, hydrogen and LNG sectors, used as components of plants and machinery with very high value and technological content.

## 1987

Established that year

## 80.000

Yearly Production Valves & Manifold

## 90

Employees

## 460

Projects acquired in recent years



**SYSTEM  
CERTIFICATIONS**

UNI EN ISO 9001:2015  
UNI ISO 45001:2018  
UNI EN ISO 14001:2015

# AVAILABLE CONFIGURATION

## CONNECTIONS

Threaded (ASME B1.20.1)  
Flanged (ASME B16.5 / API 6A)

## BORE

8 mm  
10 mm

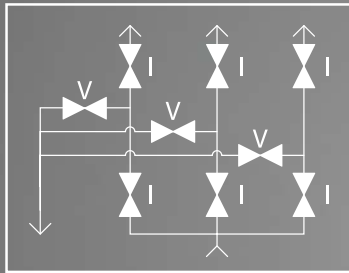
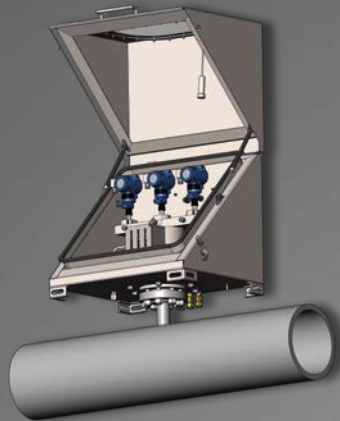
## RATING

6.000 (420 bar)  
10.000 (690 bar)

## SEALS

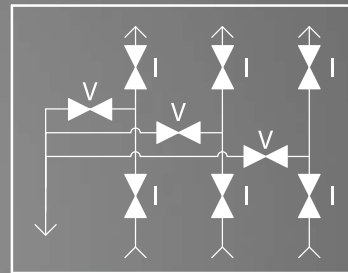
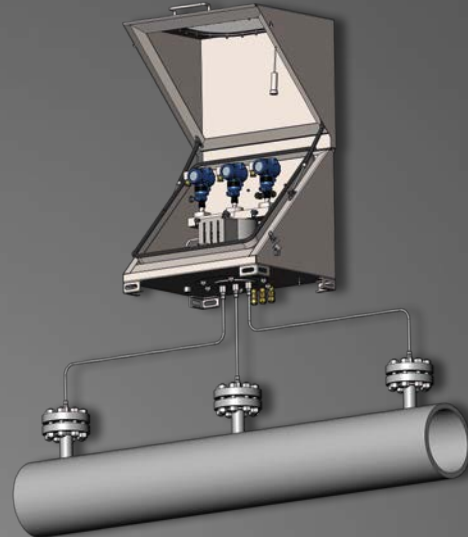
Standard: PTFE  
Optional: Graphite

### 2003 unique flanged inlet



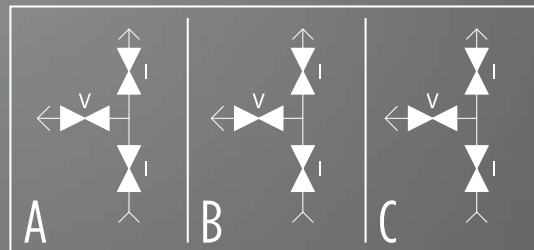
Mod. 2003 / DBB / Flow Diagram

### 2003 three common threaded inlets



Mod. 2003/DBB/Flow Diagram  
three common inlet

### 1001 three separate flanged inlets



Mod. 1001 / DBB / Flow Diagram (sold as a set of 3 assemblies  
for 2003 voting logic implementation)

## CERTIFICATIONS

**SIL 4 - IEC 61508**

PED 2014/68/EU  
ATEX 2014/34/EU  
Fugitive Emission 15848-1 & 2

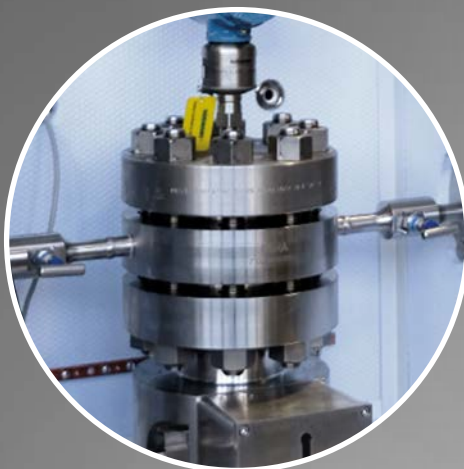
IP66 (with enclosure)  
CRN for Canada  
CU-TR for EAC Countries

# MAIN REFERENCES

## SPECIAL CONFIGURATIONS

### NMGL PROJECT Abu Dhabi - UAE

1001 PT Configuration equipped with flushing system, in/out needle valves, and venting, all flanged connection fully welded construction for severe and lethal service.



### CORAL NORTH FLNG PROJECT Rovuma Basin Mozambique

1001 configuration equipped with flushing system, in/out ball valves, and sunshade, voting logic 2003.



### BELBAZEM PROJECT Abu Dhabi - UAE

1001 configuration equipped with flushing system, in/out needle valves, and venting connection outlets with tubing for standard service.

### DALMA GAS PROJECT Abu Dhabi - UAE

1001 configuration equipped with flushing system, in/out needle valves, and venting, all flanged connection fully welded construction for severe and lethal service. Specially designed for "HIPPS level" with PDT, and provided with "equalizing" manifold for on site instrument calibration.



# LATEST MAIN PROJECTS

## WORLDWIDE

PROJECT NAME	COUNTRY	END USER	EPC / EPCC
Coral North FLNG	Mozambique	ENI	Sofec INC.
Construction CO2 Compression Station	Holland	Porthos Offshore Transport And Storage	Bonatti
Gasunie Deutschland	Germany	Gasunie Deutschland GmbH & Co. KG	Gasunie Deutschland GmbH & Co. KG
H3515 Hipps 170K FSRU	Poland	M.O.L.	Hyundai Heavy Industries
Höegh Gannet	Norway	Höegh LNG Holding LTD	Direct Order
NFPS - COMP3A & 3B	Qatar	Qatargas	Saipem
BAB & BUHASA EPCM Aip 5 Off-Plot Facilities proj.	United Arab Emirates (UAE)	ADNOC (ONSHORE)	CPECC
BAB far North Full Field Development Project (BFN)	United Arab Emirates (UAE)	ADNOC (ONSHORE)	Kent International Arabia LTD
Dalma Gas Development Project	United Arab Emirates (UAE)	Adnoc	Tecnicas Reunidas/Target Eng.
EPCIC for Sabratha Platform Compressor Module	Libya	Mellitah Oil&Gas BV - Lybian Btanch	Gruppo Antonini SPA
Golar MK II FLNG	China	Golar LNG Limited	Black & Veatch Corporation (USA)
HABSHAN Gas Compressor Plant	United Arab Emirates (UAE)	Adnoc	Petrofac
Lng FsrU	Croatia	Lng Hrvatska	Wartsila Gas Solution
Lower Zakum Habshan	United Arab Emirates (UAE)	Adnoc (OFFSHORE)	NPCC
NFPS North Field Production Sustainability	Qatar	Qatargas	Saipem
QAFCO 7 (Ammonia Plant 7)	Qatar	Qatar Fertilizer Corporation (QAFCO)	Thyssenkrupp Industrial Solutions (TKIS)
SFRU H3407 HIPPS	South Korea	HD HHI	Yokogawa Electric Korea
Congo LNG - Scarabeo 5	Congo	Eni	Saipem
Eni FLNG EPCIC	Republic of Congo	Wison Heay Industry	Eni Congo
North Field Expansion Project (NFXP) - offshore	Qatar	Qatargas	McDermott Middle East Inc.
P20106 - Biojet-Raffineria di Gela (G2 project)	Italy	Eni	Arkad
Snohvit Future Project	Norway	Equinor	Aibel AS
Valhall PWP - Fenris - Fixed Facilities Alliance	UK	Aker BP	Aker Solutions
Hipps System For 6th Trunkline (Sour Injection Gas UNIT 2)	Kazakhstan	Kpo Kazakhstan	Direct Order
Siba field Development Project	Iraq	Kuwait Energy Iraq Limited	Petrojet
NMGL -New Main Gas Line Project	United Arab Emirates (UAE)	Adnoc	NPCC
Belbazem Full Field Development Project	United Arab Emirates (UAE)	Al Yasat Petroleum (ADNOC)	NPCC

# HIPPS

## HIGH INTEGRITY PRESSURE PROTECTION SYSTEM COMPLETE SYSTEM ASSEMBLY

A HIPPS is a High Integrity Pressure Protection System used in the process industry to prevent the line from possible overpressures. HIPPS promptly isolates the line through electronic devices that interact with the systems. It is a fully automated system capable of mitigating damage caused by events that cannot be managed by the normal operation or wrong action of the operator.



A HIPPS system guarantees economic advantages (saving manufacturing and maintenance costs), environmental advantages (reduces emissions into the environment) and safety advantages (eliminates human intervention). Each HIPPS system provides a SIL (Safety Integrity Level) level for its components and the IM Indra is SIL4 certified, the highest safety level obtainable.

# ENCLOSURE ON DEMAND



## ST.ST. 316/316L ENCLOSURE, IP66 STANDARD CONFIGURATION

The interlocking manifold, if required, can be supplied in a standard protective enclosure suitable for applications in extreme environments (tropical, pluvial and polar) in order to guarantee the protection of the instrumentation from external atmospheric events and possible tampering.

## TAILOR MADE

Depending on the application and/or dimensions required, the protective enclosure can be sized according to the needs of the project while maintaining the same characteristics as the standard enclosure.



## ACCESSORIES (ATEX, IECEX, ECAS CERTIFIED) ON DEMAND



### Junction box for proximity switches and heating system wiring

St.St. 316L, available Ex-ia or Ex-e certificated. Possibility of providing additional junction boxes mounted on the enclosure



### Proximity switches

St.St.316L, available Ex-ia or Ex-d certificated



### Cable glands

available in St.St.316/316L or NPB, Dual certification Ex-d/e



### Self regulating space or body heater

marine aluminum grade or SSt.St.316/316L, Ex-d certificate for special applications, Low Temperature Alarm for temperature monitoring and in-line thermostat also available



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THE BROCHURE

