

# CANADA SENSORS TECHNOLOGY INC.



Manufacturer of Advanced Technology Pressure & Level Transmitters

CRN Approval ISO 9001:2015



CI D2 Grp ABCD Class I Zone 2  
AEx ec IIC T4 Gc, Ex ec IIC T4 Gc

## DIFFERENTIAL PRESSURE TRANSMITTER – PROCESS 9-IS-HYD Increased Safety Model for Differential Pressure and Hydrogen Service

Canada Sensors Technology Inc. offers an affordable solution with the Process 9-IS-HYD Differential Pressure Transmitter without sacrificing quality or longevity of use.

### FEATURES

- ✓ Increased Safety for Class I, Div. 2, Zone 2 Hazardous Locations and Hydrogen Service
- ✓ 4 – 20 mA Two Wire, Voltage, MODbus, CANbus, J1939
- ✓ 0.25% BSL Accuracy
- ✓ Zero & Span Function
- ✓ >50 million Cycles
- ✓ Line Pressure Ranges to 1,000 PSI
- ✓ Differential Pressures from 0 – 2 PSID to 0 – 200 PSID
- ✓ Heavy Duty 316SS Powder Coated Canister
- ✓ Temperature Compensated 0C to +50C
- ✓ Maximum Operating Temperature -40C to +95C
- ✓ Ingress Protection IP65 (up to IP67 on request)
- ✓ Multiple Electrical Connectors & Housings Available
- ✓ Multiple Process Connection Hardened 316SS or Gold Coated 316SS Threads Available
- ✓ Laser Engraved Product Information
- ✓ RoHS Compliant
- ✓ 1 Year Conditional Warranty (Serial Number Traceability)
- ✓ Unparalleled Value



### Contact Us:

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**Manufacturer of Advanced Technology  
Level and Pressure Transmitters**



### MISSION STATEMENT

Canada Sensors Technology Inc. strives to build a mutually positive and beneficial relationship with our customers, ensuring their long-term success, through the understanding of their needs and the needs of their customers.

We will listen to our customers and constantly improve our technologies as our customers' needs change with time.

Canada Sensors Technology Inc. is committed to providing the highest level of product quality and customer service.

Canada Sensors Technology Inc. operates a Quality Management System that ensures compliance with the requirements of ISO 9001:2015 and relevant legislation.

**Technical Specifications - Process 9 - IS - HYD****Performance**

|                        |                               |
|------------------------|-------------------------------|
| Accuracy:              | 0.25% Full Scale Output       |
| Stability:             | < 0.1% Full Scale Output/Year |
| Temperature Range:     | -40C to +95C                  |
| Temperature Accuracy:  | 1% Full Scale Output @ +50C   |
| Pressure Cycles:       | > 100 Million                 |
| Over Range Protection: | 2 x Full Scale Output         |
| Burst Pressure:        | 5 x Full Scale Output         |

**NOTE: Over Range Protection and Burst Pressure shall be reduced to 1.5 x Full Scale Output for pressures exceeding 1,000 PSI due to thread limitations**

**Electrical Data**

|                                                            |                                                                           |
|------------------------------------------------------------|---------------------------------------------------------------------------|
| Excitation:                                                | 10 - 28 VDC (product accessories may alter excitation values)             |
| Comms:                                                     | 4-20 mA, 0-5 VDC or 0-10 VDC or Ratio Metric, RS485-Modbus, CANopen, J939 |
| Current Consumption:                                       | 5 mA                                                                      |
| Zero Offset:                                               | 0.5% Full Scale Output                                                    |
| Span Tolerance:                                            | 0.5% Full Scale Output                                                    |
| Output Load:                                               | 9 Volts typical @ 24 VDC 750 OHMS                                         |
| Increased Safety for Zone 2 Division 2 Hazardous Locations |                                                                           |

Pollution Degree 4

Installation Category I

**NOTE: An Ex Barrier is required for any connections that cross the boundary from an Ordinary Location (Non-Classified/Non-Hazardous) to a Classified (Hazardous) location**

**Note: Electrical Connection: Big-DIN 43650A is limited to Class I Div II installations**

**Environmental Data****Temperature**

|            |                                                                  |
|------------|------------------------------------------------------------------|
| Operating: | -40C to +95C (product accessories may alter temperature ratings) |
| Storage:   | -55C to +125C                                                    |

**Thermal Limits**

|                    |                             |
|--------------------|-----------------------------|
| Compensated Range: | 0 to +50C                   |
| Temp Comp Zero:    | 1% Full Scale Output @ +50C |
| Temp Comp Span:    | 1% Full Scale Output @ +50C |

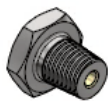
**Physical Data**

|                                                                                              |                                                                                                                               |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Sensor:                                                                                      | <b>Monolithic Block NOT Available on this model</b>                                                                           |
| Vibration:                                                                                   | 25gRMS from 20Hz to 2000Hz                                                                                                    |
| Shock:                                                                                       | 100g, half sine, 11mSec.                                                                                                      |
| Sensor:                                                                                      | Hardened 316SS is standard on all Silicone Oil Filled or Gold Coated ASTM F519                                                |
| Vibration:                                                                                   | 25gRMS from 20Hz to 2000Hz                                                                                                    |
| Shock:                                                                                       | 100g, half sine, 11mSec.                                                                                                      |
| <b>NOTE: Silicone Oil Filled Sensors are a factory option for low pressure</b>               |                                                                                                                               |
| Process Connection:                                                                          | 1/4" MNPT; 1/4" FNPT; 1/2" MNPT; 1/2" FNPT; G-1/4"; G-1/2"                                                                    |
| <b>NOTE: ANSI Regulations dictate that NPT Thread should not to exceed 8,000 PSI @ +125C</b> |                                                                                                                               |
| Electrical Connection:                                                                       | 316SS Thread-on 1/2" MNPT Solid Conduit Fitting or w/ Aluminum XP Heads; Big-DIN 43650A; Bendix Twist 6 Pin (PTIH-10-6P); M12 |

**NOTE: 316SS Wetted Parts are the minimum requirement for NACE compliance**

**Product Weights:**

|                                                                                                                                                                             | <u>OZ</u> | <u>LBS</u> | <u>KG</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|-----------|
| Process 9-IS-HYD w/ 316SS Thread-on 1/2" MNPT Solid Conduit Fitting (2 ft Lead)                                                                                             | 20.5      | 1.3        | 0.58      |
| Process 9-IS-HYD w/ Big-DIN (43650A 90 Degree Hirschmann) Bendix Twist 6 Pin (PTIH-10-6P) or M12                                                                            | 11.5      | 0.7        | 0.33      |
| Process 9-IS-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window                                                  | 55.5      | 3.5        | 1.57      |
| Process 9-IS-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display                           | 68.5      | 4.3        | 1.94      |
| Process 9-IS-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 Digits LCD Loop Powered Display                                 | 108.5     | 6.8        | 3.08      |
| Process 9-IS-HYD w/ Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer | 108.5     | 6.8        | 3.08      |

**Process Connections:**

1/4" MNPT



1/4" FNPT



1/2" MNPT



1/2" FNPT

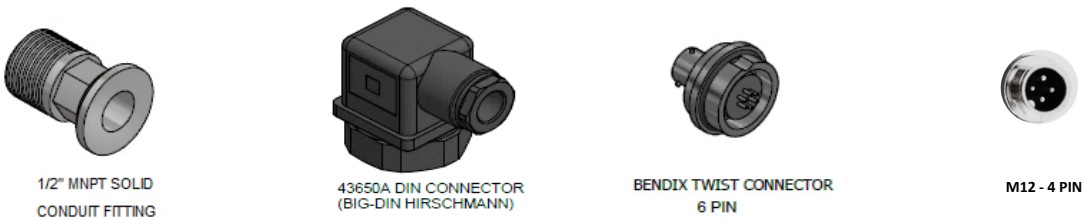


G-1/4"



G-1/2"

Electrical Connections:



Product Accessories

- Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window
- Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display
- Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 Digits LCD Loop Powered Display
- Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer



## Product Nomenclature

### MODEL: Differential Pressure Transmitter - Process 9-IS-HYD

PN Example: A-B-C-D-E-F-G-H-I-J

09-IS-HYD-01-03-04-051-02-02-12-03-02:

Process 9-IS-HYD Differential Transmitter, 4-20 mA, Zero and Span, Differential, 0 - 50 PSID, 1/4" FNPT, 316SS Wetted Parts, 316SS Thread-on 1/2" MNPT Solid Conduit Fitting with 2 ft Lead Extension Wire, Gold Coating, 0.25% Accuracy

|                                |   | A                                                                                                                                                       | B | C | D | E | F | G | H | I | J |
|--------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|
| <b>Model</b>                   |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 09-IS-HYD                      | - | Process 9-IS-HYD                                                                                                                                        |   |   |   |   |   |   |   |   |   |
| <b>Output</b>                  |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 01                             | - | 4-20 mA                                                                                                                                                 |   |   |   |   |   |   |   |   |   |
| 02                             | - | 0-5 Volts                                                                                                                                               |   |   |   |   |   |   |   |   |   |
| 03                             | - | 0-10 Volts                                                                                                                                              |   |   |   |   |   |   |   |   |   |
| 04                             | - | RS485 – Modbus                                                                                                                                          |   |   |   |   |   |   |   |   |   |
| 05                             | - | CANopen                                                                                                                                                 |   |   |   |   |   |   |   |   |   |
| 06                             | - | J1939                                                                                                                                                   |   |   |   |   |   |   |   |   |   |
| <b>Calibration Adjustment</b>  |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 03                             | - | Zero and Span                                                                                                                                           |   |   |   |   |   |   |   |   |   |
| <b>Pressure Reference</b>      |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 04                             | - | Differential                                                                                                                                            |   |   |   |   |   |   |   |   |   |
| <b>Pressure Range</b>          |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 046                            | - | 0 – 2 PSID                                                                                                                                              |   |   |   |   |   |   |   |   |   |
| 047                            | - | 0 – 5 PSID                                                                                                                                              |   |   |   |   |   |   |   |   |   |
| 048                            | - | 0 – 10 PSID                                                                                                                                             |   |   |   |   |   |   |   |   |   |
| 049                            | - | 0 – 15 PSID                                                                                                                                             |   |   |   |   |   |   |   |   |   |
| 050                            | - | 0 – 30 PSID                                                                                                                                             |   |   |   |   |   |   |   |   |   |
| 051                            | - | 0 – 50 PSID                                                                                                                                             |   |   |   |   |   |   |   |   |   |
| 052                            | - | 0 – 100 PSID                                                                                                                                            |   |   |   |   |   |   |   |   |   |
| 053                            | - | 0 – 150 PSID                                                                                                                                            |   |   |   |   |   |   |   |   |   |
| 054                            | - | 0 – 200 PSID                                                                                                                                            |   |   |   |   |   |   |   |   |   |
| <b>Process Connection</b>      |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 01                             | - | 1/4" MNPT                                                                                                                                               |   |   |   |   |   |   |   |   |   |
| 02                             | - | 1/4" FNPT                                                                                                                                               |   |   |   |   |   |   |   |   |   |
| 03                             | - | 1/2" MNPT                                                                                                                                               |   |   |   |   |   |   |   |   |   |
| 04                             | - | 1/2" FNPT                                                                                                                                               |   |   |   |   |   |   |   |   |   |
| 07                             | - | G-1/4"                                                                                                                                                  |   |   |   |   |   |   |   |   |   |
| 08                             | - | G-1/2"                                                                                                                                                  |   |   |   |   |   |   |   |   |   |
| <b>Wetted Parts</b>            |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 02                             | - | 316SS                                                                                                                                                   |   |   |   |   |   |   |   |   |   |
| <b>Electrical Connection</b>   |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 12                             | - | 316SS Thread-on 1/4" MNPT Solid Conduit Fitting (2 ft Lead Extension Wire)                                                                              |   |   |   |   |   |   |   |   |   |
| 13                             | - | 316SS Thread-on 1/2" MNPT Solid Conduit Fitting (4 ft Lead Extension Wire)                                                                              |   |   |   |   |   |   |   |   |   |
| 14                             | - | 316SS Thread-on 3/4" MNPT Solid Conduit Fitting (6 ft Lead Extension Wire)                                                                              |   |   |   |   |   |   |   |   |   |
| 15                             | - | 316SS Thread-on 1" MNPT Solid Conduit Fitting (10 ft Lead Extension Wire)                                                                               |   |   |   |   |   |   |   |   |   |
| 22                             | - | Big-DIN (DIN 43650A 90 Degree Hirschmann)                                                                                                               |   |   |   |   |   |   |   |   |   |
| 31                             | - | Bendix Twist Connector 6 Pin (PTIH-10-6P)                                                                                                               |   |   |   |   |   |   |   |   |   |
| 32                             | - | M12                                                                                                                                                     |   |   |   |   |   |   |   |   |   |
| 36                             | - | Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window                                                  |   |   |   |   |   |   |   |   |   |
| 39                             | - | Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display                           |   |   |   |   |   |   |   |   |   |
| 42                             | - | Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 Digits LCD Loop Powered Display                                 |   |   |   |   |   |   |   |   |   |
| 49                             | - | Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer |   |   |   |   |   |   |   |   |   |
| <b>Environmental Treatment</b> |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 02                             | - | No Treatment                                                                                                                                            |   |   |   |   |   |   |   |   |   |
| 03                             | - | Gold Coating                                                                                                                                            |   |   |   |   |   |   |   |   |   |
| <b>Accuracy</b>                |   |                                                                                                                                                         |   |   |   |   |   |   |   |   |   |
| 02                             | - | 0.25 %                                                                                                                                                  |   |   |   |   |   |   |   |   |   |

**E: Alternate Pressure Range Units****kPa**

|     |           |   |               |
|-----|-----------|---|---------------|
| kPa | 046 - kPa | - | 0 – 15 kPaD   |
| kPa | 047 - kPa | - | 0 – 35 kPaD   |
| kPa | 048 - kPa | - | 0 – 70 kPaD   |
| kPa | 049 - kPa | - | 0 – 100 kPaD  |
| kPa | 050 - kPa | - | 0 – 200 kPaD  |
| kPa | 051 - kPa | - | 0 – 350 kPaD  |
| kPa | 052 - kPa | - | 0 – 700 kPaD  |
| kPa | 053 - kPa | - | 0 – 1000 kPaD |
| kPa | 054 - kPa | - | 0 – 1400 kPaD |

**mBar**

|      |            |   |                 |
|------|------------|---|-----------------|
| mBar | 046 - mBar | - | 0 – 150 mBarD   |
| mBar | 047 - mBar | - | 0 – 350 mBarD   |
| mBar | 048 - mBar | - | 0 – 700 mBarD   |
| mBar | 049 - mBar | - | 0 – 1000 mBarD  |
| mBar | 050 - mBar | - | 0 – 2000 mBarD  |
| mBar | 051 - mBar | - | 0 – 3500 mBarD  |
| mBar | 052 - mBar | - | 0 – 7000 mBarD  |
| mBar | 053 - mBar | - | 0 – 10000 mBarD |
| mBar | 054 - mBar | - | 0 – 14000 mBarD |

**mm Hg**

|       |             |   |                  |
|-------|-------------|---|------------------|
| mm Hg | 046 - mm Hg | - | 0 – 100 mm HgD   |
| mm Hg | 047 - mm Hg | - | 0 – 250 mm HgD   |
| mm Hg | 048 - mm Hg | - | 0 – 500 mm HgD   |
| mm Hg | 049 - mm Hg | - | 0 – 800 mm HgD   |
| mm Hg | 050 - mm Hg | - | 0 – 1500 mm HgD  |
| mm Hg | 051 - mm Hg | - | 0 – 2500 mm HgD  |
| mm Hg | 052 - mm Hg | - | 0 – 5000 mm HgD  |
| mm Hg | 053 - mm Hg | - | 0 – 8000 mm HgD  |
| mm Hg | 054 - mm Hg | - | 0 – 10000 mm HgD |

**in H<sub>2</sub>O (60° F)**

|                             |                           |   |                                       |
|-----------------------------|---------------------------|---|---------------------------------------|
| in H <sub>2</sub> O (60° F) | 046 - in H <sub>2</sub> O | - | 0 - 60 in H <sub>2</sub> OD (60° F)   |
| in H <sub>2</sub> O (60° F) | 047 - in H <sub>2</sub> O | - | 0 - 150 in H <sub>2</sub> OD (60° F)  |
| in H <sub>2</sub> O (60° F) | 048 - in H <sub>2</sub> O | - | 0 - 300 in H <sub>2</sub> OD (60° F)  |
| in H <sub>2</sub> O (60° F) | 049 - in H <sub>2</sub> O | - | 0 - 400 in H <sub>2</sub> OD (60° F)  |
| in H <sub>2</sub> O (60° F) | 050 - in H <sub>2</sub> O | - | 0 - 800 in H <sub>2</sub> OD (60° F)  |
| in H <sub>2</sub> O (60° F) | 051 - in H <sub>2</sub> O | - | 0 - 1500 in H <sub>2</sub> OD (60° F) |
| in H <sub>2</sub> O (60° F) | 052 - in H <sub>2</sub> O | - | 0 - 3000 in H <sub>2</sub> OD (60° F) |
| in H <sub>2</sub> O (60° F) | 053 - in H <sub>2</sub> O | - | 0 - 4000 in H <sub>2</sub> OD (60° F) |
| in H <sub>2</sub> O (60° F) | 054 - in H <sub>2</sub> O | - | 0 - 5000 in H <sub>2</sub> OD (60° F) |

**mm H<sub>2</sub>O (4° C)**

|                            |                           |   |                                        |
|----------------------------|---------------------------|---|----------------------------------------|
| mm H <sub>2</sub> O (4° C) | 046 - mm H <sub>2</sub> O | - | 0 - 1400 mm H <sub>2</sub> OD (4° C)   |
| mm H <sub>2</sub> O (4° C) | 047 - mm H <sub>2</sub> O | - | 0 - 3500 mm H <sub>2</sub> OD (4° C)   |
| mm H <sub>2</sub> O (4° C) | 048 - mm H <sub>2</sub> O | - | 0 - 7000 mm H <sub>2</sub> OD (4° C)   |
| mm H <sub>2</sub> O (4° C) | 049 - mm H <sub>2</sub> O | - | 0 - 10000 mm H <sub>2</sub> OD (4° C)  |
| mm H <sub>2</sub> O (4° C) | 050 - mm H <sub>2</sub> O | - | 0 - 20000 mm H <sub>2</sub> OD (4° C)  |
| mm H <sub>2</sub> O (4° C) | 051 - mm H <sub>2</sub> O | - | 0 - 35000 mm H <sub>2</sub> OD (4° C)  |
| mm H <sub>2</sub> O (4° C) | 052 - mm H <sub>2</sub> O | - | 0 - 70000 mm H <sub>2</sub> OD (4° C)  |
| mm H <sub>2</sub> O (4° C) | 053 - mm H <sub>2</sub> O | - | 0 - 100000 mm H <sub>2</sub> OD (4° C) |
| mm H <sub>2</sub> O (4° C) | 054 - mm H <sub>2</sub> O | - | 0 - 140000 mm H <sub>2</sub> OD (4° C) |

**in Hg (32° F)**

|               |             |   |                       |
|---------------|-------------|---|-----------------------|
| in Hg (32° F) | 046 - in Hg | - | 0 - 5 in HgD(32° F)   |
| in Hg (32° F) | 047 - in Hg | - | 0 - 10 in HgD(32° F)  |
| in Hg (32° F) | 048 - in Hg | - | 0 - 20 in HgD(32° F)  |
| in Hg (32° F) | 049 - in Hg | - | 0 - 30 in HgD(32° F)  |
| in Hg (32° F) | 050 - in Hg | - | 0 - 30 in HgD(32° F)  |
| in Hg (32° F) | 051 - in Hg | - | 0 - 100 in HgD(32° F) |
| in Hg (32° F) | 052 - in Hg | - | 0 - 200 in HgD(32° F) |
| in Hg (32° F) | 053 - in Hg | - | 0 - 300 in HgD(32° F) |
| in Hg (32° F) | 054 - in Hg | - | 0 - 400 in HgD(32° F) |

|                           |           |   |                                     |
|---------------------------|-----------|---|-------------------------------------|
| Bar                       |           |   |                                     |
| Bar                       | 046 - Bar | - | 0 – 0.15 BarD                       |
| Bar                       | 047 - Bar | - | 0 – 0.35 BarD                       |
| Bar                       | 048 - Bar | - | 0 – 0.7 BarD                        |
| Bar                       | 049 - Bar | - | 0 – 1 BarD                          |
| Bar                       | 050 - Bar | - | 0 – 2 BarD                          |
| Bar                       | 051 - Bar | - | 0 – 3.5 BarD                        |
| Bar                       | 052 - Bar | - | 0 – 7 BarD                          |
| Bar                       | 053 - Bar | - | 0 – 10 BarD                         |
| Bar                       | 054 - Bar | - | 0 – 14 BarD                         |
| ata (kg/cm <sup>2</sup> ) |           |   |                                     |
| ata (kg/cm <sup>2</sup> ) | 046 - ata | - | 0 - 0.14 ata (kg/cm <sup>2</sup> )D |
| ata (kg/cm <sup>2</sup> ) | 047 - ata | - | 0 - 0.35 ata (kg/cm <sup>2</sup> )D |
| ata (kg/cm <sup>2</sup> ) | 048 - ata | - | 0 - 0.7 ata (kg/cm <sup>2</sup> )D  |
| ata (kg/cm <sup>2</sup> ) | 049 - ata | - | 0 - 1 ata (kg/cm <sup>2</sup> )D    |
| ata (kg/cm <sup>2</sup> ) | 050 - ata | - | 0 - 2.1 ata (kg/cm <sup>2</sup> )D  |
| ata (kg/cm <sup>2</sup> ) | 051 - ata | - | 0 - 3.5 ata (kg/cm <sup>2</sup> )D  |
| ata (kg/cm <sup>2</sup> ) | 052 - ata | - | 0 - 7 ata (kg/cm <sup>2</sup> )D    |
| ata (kg/cm <sup>2</sup> ) | 053 - ata | - | 0 - 10 ata (kg/cm <sup>2</sup> )D   |
| ata (kg/cm <sup>2</sup> ) | 054 - ata | - | 0 - 14 ata (kg/cm <sup>2</sup> )D   |