

## Data Sheet

# 510C/511C All Welded Diaphragm Seal

### FEATURES

- Compact design allows seals to fit in confined areas
- Sufficient displacement to drive a wide variety of instrumentation
- Minimal fill volume
- All stainless steel construction; other materials available
- Light weight design

### TYPICAL USES

- Oil and gas
- Refineries (Hydrofluoric / Sulfuric Alkylation)
- Chemical and petrochemical
- Water and wastewater
- Oil and gas fracking
- NACE Compliant processes (sour gas separation)
- Biogas and biodiesel
- Corrosive processes



510C/511C

### SPECIFICATIONS

|                         |   |
|-------------------------|---|
| Connection Style:       | 510C: Threaded<br>511C: Threaded with Flushed Connection  |
| Process Connection:     | ¼ NPT or ½ NPT male/female (ASME B1.20.1)<br>G ¼ B or G ½ B male/female (EN 837)<br>others available on request |
| Instrument Connection:  | 1/4 NPT, 1/2 NPT, G 1/4 or G 1/2 female, others on request  |
| Pressure Rating (MAWP): | Standard:<br>160 bar/2320 psi at 40 °C (100 °F)<br>High pressure option:<br>689 bar/10000 psi at 40 °C (100 °F) |
| Accuracy effect:        | + 0,5% typical  |
| Fill Fluid:             | Silicone, Halocarbon®,<br>others available on request   |
| Approvals:              | NACE for Oilfields and Refineries   |

### KEY BENEFITS

- Continuous duty design
- All-welded construction prevents inadvertent disassembly
- Ensures process compatibility
- Male connections eliminate adapters/fittings

### WETTED COMPONENTS

Diaphragm and bottom housing, top housing with (HP) option

|                               |                           |
|-------------------------------|---------------------------|
| Stainless steel 316L (1.4404) | Hastelloy® C-276 (2.4819) |
| Inconel® 625 (2.4856)         | Monel® 400 (2.4360)       |
| Duplex 2205 (1.4462)          | Titanium                  |

### NON-WETTED COMPONENTS

Top housing (for standard configuration MAWP 160 bar)

|                               |
|-------------------------------|
| Stainless steel 316L (1.4404) |
| Monel® 400 (2.4360)           |
| Titanium                      |

### BOTTOM HOUSING

|                              | St.st. 316L<br>(1.4404)<br>S | Monel®<br>400<br>P | Hastelloy®<br>C-276<br>H | Inconel®<br>625<br>W | Duplex<br>2205<br>Z | Titanium<br>TI |
|------------------------------|------------------------------|--------------------|--------------------------|----------------------|---------------------|----------------|
| St.st. 316L<br>(1.4404)<br>S | ✓                            |                    |                          |                      |                     |                |
| Monel®<br>400<br>P           |                              | ✓                  |                          |                      |                     |                |
| Hastelloy®<br>C-276<br>H     | ✓                            |                    | ✓                        |                      | ✓                   |                |
| Inconel®<br>625<br>M         | ✓                            |                    |                          | ✓                    | ✓                   |                |
| Duplex<br>2205<br>Z          | ✓                            |                    |                          |                      | ✓                   |                |
| Titanium<br>TI               |                              |                    |                          |                      |                     | ✓              |

DIAPHRAGM

# Data Sheet

## 510C/511C All Welded Diaphragm Seal

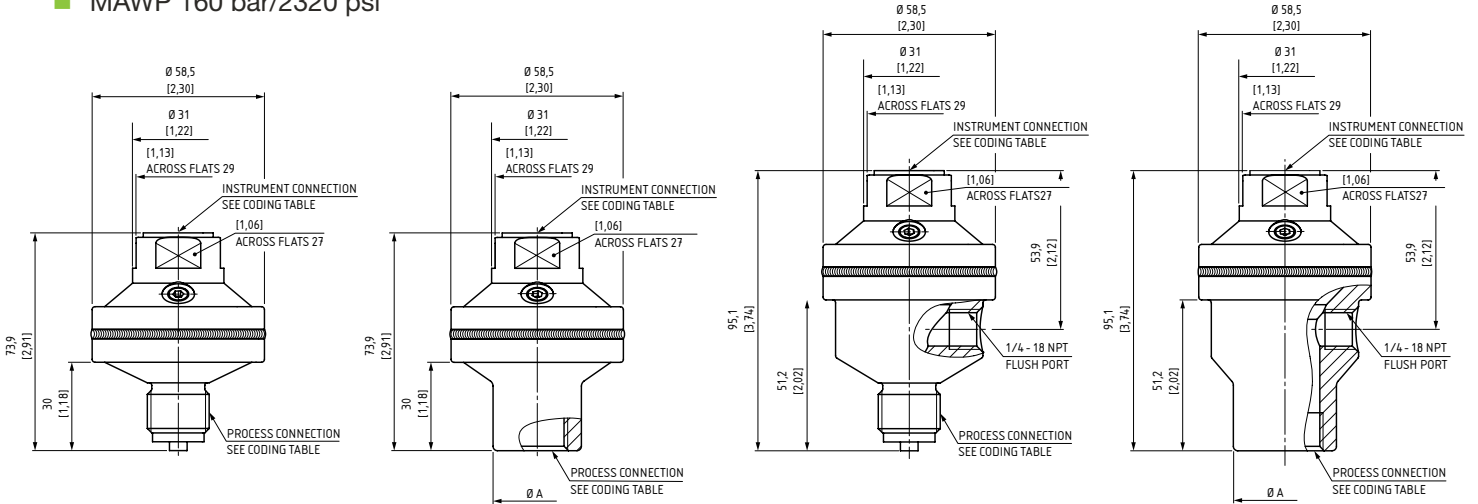
| ORDERING CODE                          | EXAMPLE:  | 04                         | 510C | S | S | 00T | CK | HP | PU | 6B | CD2 | HY |
|--|---|----------------------------|------|---|---|-----|----|----|----|----|-----|----|
| <b>Process Connection</b>              |   |                            |      |   |   |     |    |    |    |    |     |    |
| 02                                     | ¼ NPT male  |                            |      |   |   |     |    |    |    |    |     |    |
| 04                                     | ½ NPT male  | 04                         |      |   |   |     |    |    |    |    |     |    |
| 06                                     | ¾ NPT male  |                            |      |   |   |     |    |    |    |    |     |    |
| 08                                     | 1 NPT male (NOT available for 510C-HP/511C-HP)  |                            |      |   |   |     |    |    |    |    |     |    |
| 67                                     | 1-½ NPT male (NOT available for 510C-HP/511C-HP)  |                            |      |   |   |     |    |    |    |    |     |    |
| 25                                     | ¼ NPT female  |                            |      |   |   |     |    |    |    |    |     |    |
| 50                                     | ½ NPT female  |                            |      |   |   |     |    |    |    |    |     |    |
| 75                                     | ¾ NPT female  |                            |      |   |   |     |    |    |    |    |     |    |
| 10                                     | 1 NPT female (NOT available for 510C-HP/511C-HP)  |                            |      |   |   |     |    |    |    |    |     |    |
| 13                                     | G ¼ male  |                            |      |   |   |     |    |    |    |    |     |    |
| 18                                     | G ½ male  |                            |      |   |   |     |    |    |    |    |     |    |
| 23                                     | G ¾ male  |                            |      |   |   |     |    |    |    |    |     |    |
| 16                                     | M20x1.5 male  |                            |      |   |   |     |    |    |    |    |     |    |
| RF                                     | 9/16-18UNF for 3/8 OD tubing  |                            |      |   |   |     |    |    |    |    |     |    |
| <b>Model Code</b>                      |   |                            |      |   |   |     |    |    |    |    |     |    |
| 510C                                   | All-welded threaded compact seal  |                            | 510C |   |   |     |    |    |    |    |     |    |
| 511C                                   | All-welded threaded compact seal, with flushing port  |                            |      |   |   |     |    |    |    |    |     |    |
| <b>Diaphragm Material</b>              |   |                            |      |   |   |     |    |    |    |    |     |    |
| S                                      | Stainless steel 316L  |                            |      | S |   |     |    |    |    |    |     |    |
| M                                      | Inconel <sup>®</sup> 625  |                            |      |   |   |     |    |    |    |    |     |    |
| H                                      | Hastelloy <sup>®</sup> C-276  |                            |      |   |   |     |    |    |    |    |     |    |
| P                                      | Monel <sup>®</sup> 400  |                            |      |   |   |     |    |    |    |    |     |    |
| Z                                      | Duplex 2205   |                            |      |   |   |     |    |    |    |    |     |    |
| TI                                     | Titanium  |                            |      |   |   |     |    |    |    |    |     |    |
| <b>Bottom Housing Material</b>         |   |                            |      |   |   |     |    |    |    |    |     |    |
| S                                      | Stainless steel 316L  |                            |      |   | S |     |    |    |    |    |     |    |
| W                                      | Inconel <sup>®</sup> 625  |                            |      |   |   |     |    |    |    |    |     |    |
| H                                      | Hastelloy <sup>®</sup> C-276  |                            |      |   |   |     |    |    |    |    |     |    |
| P                                      | Monel <sup>®</sup> 400  |                            |      |   |   |     |    |    |    |    |     |    |
| Z                                      | Duplex 2205   |                            |      |   |   |     |    |    |    |    |     |    |
| TI                                     | Titanium  |                            |      |   |   |     |    |    |    |    |     |    |
| <b>Instrument Connection</b>           |   |                            |      |   |   |     |    |    |    |    |     |    |
| 00T                                    | Welding (Not available for 510C-HP/511C-HP)   |                            |      |   |   | 00T |    |    |    |    |     |    |
| 02T                                    | ¼ NPT female  |                            |      |   |   |     |    |    |    |    |     |    |
| 04T                                    | ½ NPT female  |                            |      |   |   |     |    |    |    |    |     |    |
| 13T                                    | G ¼ female  |                            |      |   |   |     |    |    |    |    |     |    |
| 51T                                    | G ½ female  |                            |      |   |   |     |    |    |    |    |     |    |
| 16T                                    | M20x1.5 female  |                            |      |   |   |     |    |    |    |    |     |    |
| <b>Options - Fill Fluid</b>            |   |                            |      |   |   |     |    |    |    |    |     |    |
| CF                                     | Halocarbon <sup>®</sup>   | (-57~199 C <sup>°</sup> )  |      |   |   |     |    |    |    |    |     |    |
| CK                                     | Silicone oil  | (-40~260 C <sup>°</sup> )  |      |   |   |     | CK |    |    |    |     |    |
| DI                                     | Distilled water   | (4~85 C <sup>°</sup> )     |      |   |   |     |    |    |    |    |     |    |
| KG                                     | High temperature silicone oil   | (20~315 C <sup>°</sup> )   |      |   |   |     |    |    |    |    |     |    |
| LT                                     | Low temperature silicone oil  | (-100~180 C <sup>°</sup> ) |      |   |   |     |    |    |    |    |     |    |
| MY                                     | White oil   | (-10~205 C <sup>°</sup> )  |      |   |   |     |    |    |    |    |     |    |
| For others, please consult factory     |   |                            |      |   |   |     |    |    |    |    |     |    |
| <b>Options - Rating</b>                |   |                            |      |   |   |     |    |    |    |    |     |    |
| =                                      | Standard (no data)  |                            |      |   |   |     |    |    |    |    |     |    |
| HP                                     | High pressure design (689 bar / 10000 psi)  |                            |      |   |   |     |    | HP |    |    |     |    |
| <b>Other Option</b>                    |   |                            |      |   |   |     |    |    |    |    |     |    |
| =                                      | Standard (no data)  |                            |      |   |   |     |    |    |    |    |     |    |
| PU                                     | Pipe plug for flushing connection, same material as wetted parts (1/4 NPT male and for high pressure design 1/8 NPT male) |                            |      |   |   |     |    |    | PU |    |     |    |
| <b>Options - Cleaning</b>              |   |                            |      |   |   |     |    |    |    |    |     |    |
| 6B                                     | Cleaned for gaseous Oxygen or other strong oxidizing agents [generally inadmissible for ranges > 10.000 psi]              |                            |      |   |   |     |    |    |    | 6B |     |    |
| 6W                                     | Product clean and degrease, not for strong oxidation application  |                            |      |   |   |     |    |    |    |    |     |    |
| YF                                     | Silicone free product   |                            |      |   |   |     |    |    |    |    |     |    |
| <b>Options - Material Certificates</b> |   |                            |      |   |   |     |    |    |    |    |     |    |
| CD2                                    | Material test report according to EN 10204 / 2.2  |                            |      |   |   |     |    |    |    |    | CD2 |    |
| C3                                     | Material report according to EN 10204 / 3.1 (Please consult factory)  |                            |      |   |   |     |    |    |    |    |     |    |
| CD5                                    | Certificate according to NACE for Oilfields MR0175 / ISO 15156 and Refineries MR0103 / ISO17945                           |                            |      |   |   |     |    |    |    |    |     |    |
| CD6                                    | Typical material certification  |                            |      |   |   |     |    |    |    |    |     |    |
| MQ                                     | Positive Material Identification (PMI)  |                            |      |   |   |     |    |    |    |    |     |    |
| <b>Options - Test Certificate</b>      |   |                            |      |   |   |     |    |    |    |    |     |    |
| =                                      | Standard (no data)  |                            |      |   |   |     |    |    |    |    |     |    |
| HY                                     | Hydrostatic testing   |                            |      |   |   |     |    |    |    |    |     | HY |
| ML                                     | Test report of mass spectrometer leak   |                            |      |   |   |     |    |    |    |    |     |    |

## 510C/511C All Welded Diaphragm Seal

### DIMENSIONS IN MM [INCH]

For reference only, consult Ashcroft for specific dimensional drawings

#### ■ MAWP 160 bar/2320 psi



| PROCESS CONNECTION              | CODE | Ø A       |
|---------------------------------|------|-----------|
| 1/4 - 18 NPT Female             | 25   | 25 [0,98] |
| G 1/4 Female; EN 837            | 26   | 25 [0,98] |
| 1/2 - 14 NPT Female             | 50   | 30 [1,18] |
| G1/2 Female; EN 837             | 51   | 30 [1,18] |
| 3/4 - 14 NPT Female             | 75   | 35 [1,38] |
| 9/16 - 18 UNF for 3/8 OD tubing | RF   | 25 [0,98] |

#### ■ MAWP 689 bar/10000 psi

#### ■ MAWP 345 bar/5000 psi

