



### **P3 Remotely Operated Smart Chemical Injection/Pressure Test System**

**P3-20-DA-SK (MWP 20,000 psig) P3-28-DA-SK (MWP 10,000 psig) P3-40-DA-SK (MWP 5,500 psig)**

The P3 Remotely Operated Smart Chemical Injection/Pressure Test Systems are modular in design to incorporate any one of the three available P3 pump models in the range, regardless of the pressure and flow making it a versatile and cost effective skid & pump system.

P3 Remotely Operated Smart Chemical Injection/Pressure Test Systems are available in three different pump models, 20mm, 28mm and 40mm to provide a wide range of pressures and flows up to 20,000 psig.

The P3 pump utilises a common air motor, shuttle valve assembly, double head hydraulic section housings and suction/discharge check valves and has been designed to be modular using interchangeable inserts, pistons and components permitting the pump to be economically reconfigured to either the 20mm, 28mm and 40mm model for different pressures and flows within a short period of time.

The P3 Remotely Operated Smart Chemical Injection/Pressure Test System is designed to be safe for use in Zone 1 hazardous areas, are constructed to a high standard and harmonised standards, where available, have been applied. The system has been designed with the ability to switch to manual operation as a back up to prevent any interruption in operation.



**Area Classification: Zone 1**

**II 2G Ex h IIB T4 Gb X**

All components (where required) are selected, and/or manufactured to ensure compliance with the ATEX Directive 2014/34/EU.

All remaining elements not covered above have been manufactured using the principles of "Good Engineering Practice".

#### **Control System for Air-Driven Pump:**

Advanced control system efficiently monitors and controls the status of up to four air-driven pump skids. This robust system utilizes a PC-based SCADA application, a programmable logic controller (PLC), and remote Ex-rated sensors and actuators to ensure optimal performance and safety. The operator interface is conveniently housed within a durable Pelican Case, featuring a touchscreen display for the SCADA application. This intuitive interface allows operators to easily execute commands such as starting or stopping the pumps and opening or closing valves, while also providing real-time monitoring of critical parameters including pressure, temperature and flow rate.

#### **Skid Overview:**

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frame Construction:</b> | 316 stainless steel 40x40x4mm box section frame designed and manufactured in accordance with DNVGL-ST-E271. Supplied with pad eyes and 4 leg wire rope sling assembly. 2mm S/S engraved schematic operational panel, protective GRP mini mesh, drip tray c/w ½" NPT F drain boss, four tie down points, four earth bonding points and forklift pockets.                                                                                                                                                                                             |
| <b>Pump Selection:</b>     | P3-20-DA-SK (MWP 20,000 psig) P3-28-DA-SK (MWP 10,000 psig) P3-40-DA-SK (MWP 5,500 psig)                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Air Drive:</b>          | Single 1" NPT F air inlet bulkhead, Norgren B68 Series Filter Regulator c/w 40 micron filter and auto drain, L68 Micro Fpg lubricator, T68 shut off valve and Norgren for manual operation (back up to remotely operated system). 1" XT13 SMC external pilot operated regulator (remote operation). Norgren F07 pilot air filter c/w auto drain, 6 digit panel mount pneumatic (manual operation) and electronic stroke counter (remote operation), 63mm 200 PSI S/S panel mounted air pressure gauge. 1" SS interconnecting fittings and pipework. |
| <b>Fluid Inlet:</b>        | 1" NPT SS (F) bulkhead, 1" OD SS isolation valve, 50 mesh SS Y strainer, 1" OD (0.065") SS pipework and interconnecting fittings. CM84 0.1 – 10 ltr/min 100 BAR electronic flow meter c/w panel mounted F018 electronic display/CM01 2-50 ltr/min 100 BAR electronic flowmeter c/w panel mounted F018 electronic display.                                                                                                                                                                                                                           |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|
| <b>Fluid Discharge:</b>     | 9/16" MP SS (F) bulkhead, 9/16" MP SS 2-way straight bi-directional system vent valve, 9/16" MP F pilot operated pneumatic system isolate needle valve, 9/16" MP F SS non return valve check valve metal to metal ball type, 50 series thermocouple & RTD temperature sensor, ESI high pressure transmitter, BIS RL25 400 – 15,000 PSI/10,000 – 20,000 PSI SS handwheel adjustable PRV, 100mm 20,000 PSI SS panel mounted pressure gauge, interconnecting 9/16" MP SS pipework & fittings. |                             |          |
| <b>Total Net Weight:</b>    | 300 KG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Maximum Noise Level:</b> | 94.0 DbA |
| <b>Ambient Temperature:</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |          |
| <b>Range:</b>               | -20oC to + 40oC                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |          |
| <b>Dimensions:</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |          |
|                             | 1244 x 800 x 820mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |          |

**Skid connection sizes:**

|                     |                         |                     |                         |                         |                         |
|---------------------|-------------------------|---------------------|-------------------------|-------------------------|-------------------------|
| <b>Air Inlet:</b>   | 1" NPT F S/S Bulkhead   | <b>Fluid Inlet:</b> | 1" NPT F S/S Bulkhead   | <b>Fluid Discharge:</b> | 9/16" MP F S/S Bulkhead |
| <b>System Vent:</b> | 3/8" NPT F S/S Bulkhead | <b>PRV Vent:</b>    | 3/8" NPT F S/S Bulkhead |                         |                         |

**Pump Performance:**

|                                       |                   |                              |                        |
|---------------------------------------|-------------------|------------------------------|------------------------|
| <b>Max Pump Air Supply</b>            | 100 PSI           | <b>Max Pilot Air Supply:</b> | 100 psig               |
| <b>Max Air Consumption:</b>           | 250 scfm          | <b>Air Quality Required:</b> | Cooled & dry plant air |
| <b>Pump Ratio:</b>                    | 20mm: 233 - 1     | 28mm: 118.4 - 1              | 40mm: 57.5 - 1         |
| <b>Max Discharge Pressure Static:</b> | 20mm: 20,000 psig | 28mm: 11,850 psig            | 40mm: 5,750 psig       |
| <b>Discharge Volume per Stroke:</b>   | 20mm: 61.5cc      | 28mm: 120.6cc                | 40mm: 246.2cc          |
| <b>Max Discharge Flow @ 0 psig:</b>   | 20mm: 8.6 ltr/min | 28mm: 16.0 ltr/min           | 40mm: 32.5 ltr/min     |

**General Arrangement Drawing: /cont.**