



The difference is measurable

HYDRAULIC SERVICE MANIFOLD AC-03-SMXX

The Instron Hydraulic Service Manifold (HSM) is engineered to streamline hydraulic power distribution across various test systems, including automotive and aerospace applications. Positioned between a hydraulic power source—such as a Hydraulic Power Unit (HPU)—and downstream hydraulic devices, the HSM efficiently distributes hydraulic pressure to multiple actuators. It ensures system safety and performance with a built-in discharge circuit that rapidly dumps oil within 50 to 150 milliseconds in case of abnormal loading.

To optimize reliability and performance, the HSM is equipped with bladder type accumulators to minimize pressure fluctuations and a main filter that protects the system by reducing the risk of contamination during hydraulic line changes or fixture additions. This design allows for a clean, simplified hydraulic layout while enhancing control and safety. It includes an electrical junction box with a built-in 24V interface for seamless integration with control systems, and all supplied hydraulic interfaces are made from stainless steel for durability and corrosion resistance.

KEY FEATURES

- **DURABLE CONSTRUCTION:**
Metallic block with Electroless Nickel plating for enhanced corrosion resistance, mounted on a rigid free-standing frame.
- **PRESSURE DISTRIBUTION:**
Distributes and controls pressure to independent systems or actuators.
- **SMOOTH TRANSITION:**
Adjustable transitions between low to high, and high to low pressure modes.
- **PRESSURE STABILIZATION:**
Accumulators in pressure and return lines reduce fluctuations, ensuring quiet and reliable performance.
- **LOGIC AND SEQUENCE OPERATION:**
Features a cartridge-type pilot-operated sequence valve and a cartridge-type flow and kick-down logic control valve.
- **FLOW RATE OPTIONS:**
Available in four models with flow rates ranging from 100 to 500 lpm.
- **RAPID PRESSURE REDUCTION:**
Fast response pressure reduction system for immediate adjustments.
- **ADVANCED FILTRATION:**
Filtration down to 3 μ non bypass type pressure, pilot, and return lines.
- **INTEGRATED LED INDICATORS:**
LED illumination signals filter clogging for easy maintenance.
- **PRESSURE MONITORING:**
Inlet and outlet pressure gauges with indicators, supported by isolation check valves, and a pressure switch to provide feedback to the control system.
- **SAFETY FEATURES:**
Emergency shut down via safety dump valve, with a bleed valve for maintenance.
- **PRESSURE CONTROL:**
Cartridge-type valve for adjusting flow and pressure.
- **OPTIONAL DRIP TRAY:**
Available with an optional drip tray for added protection against leaks.

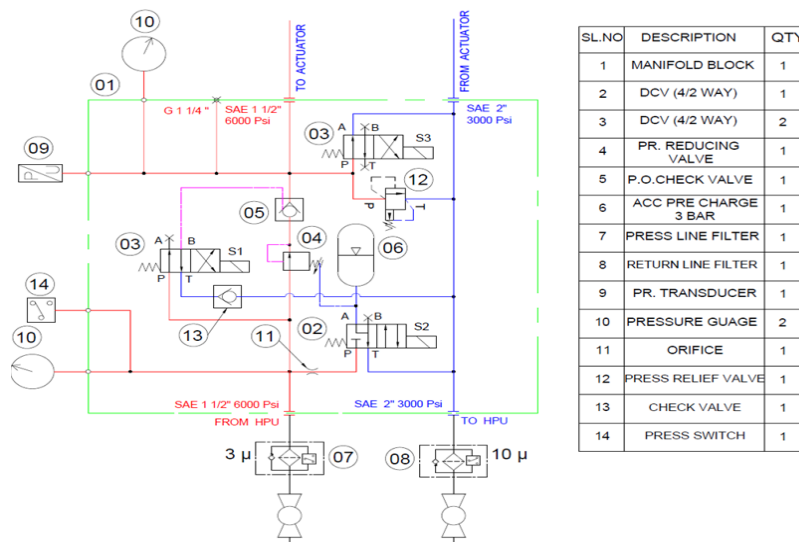


*Image for reference only

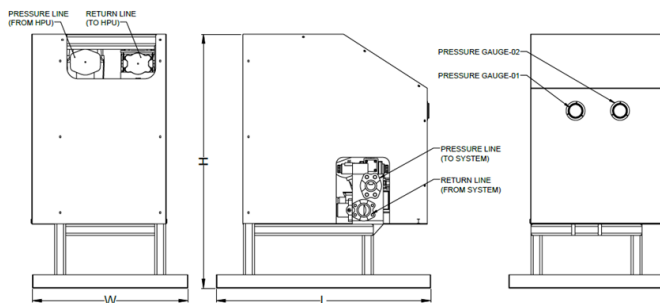
SPECIFICATIONS

| Model | AC-03-SM10 | AC-03-SM20 | AC-03-SM30 | AC-03-SM50 |
|---------------------------------|---|------------|------------|------------|
| Nominal Flow, lpm | 100 | 200 | 300 | 500 |
| Operating Pressure, bar | 210 | | | |
| Test Pressure, bar | 315 | | | |
| Transition time b/w modes | 5-10s | | | |
| Control Signal | 1A @ 24-28VDC | | | |
| Variable Pressure | 35 to 75 bar variable using a manual type -pressure-setting valve | | | |
| Operating fluid temperature, °C | 25 to +50 | | | |
| Hydraulic Oil Cleanliness | ISO4406, 18/15/12 (NAS-6). | | | |

HSM HYDRAULIC CIRCUIT



HSM DIMENSIONS



| S/N | HSM SIZE | L (mm) | W (mm) | H (mm) |
|-----|----------|--------|--------|--------|
| 1 | 100 lpm | 820 | 650 | 670 |
| 2 | 200 lpm | 970 | 700 | 1150 |
| 3 | 300 lpm | 1000 | 750 | 1150 |
| 4 | 500 lpm | - | - | - |

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