communication between the chemical injection management system 118 and the well 114. The chemical injection management system 118 further includes a flow valve or flow regulator assembly 120, and as explained below, the chemical injection management system 118 may be configured to regulate the flow of a fluid through the tree 108 and into the well 114 using the flow valve assembly 120.

[0025] Referring now to Figure 3, a perspective and partial phantom view of the flow meter and valve assembly 120 is shown. The flow valve assembly 120 includes a housing 122 with a handle 124, a first coupling interface 126, and a second coupling interface 128. In some embodiments, the coupling interfaces 126, 128 are used to couple to the chemical injection management system 118, the tree 108, an ROV (remotely operated vehicle), or other portions of the wellhead 115 equipment. The housing 122 contains a flow meter 130, a valve actuator assembly 132, and a conduit or flowline 134 fluidly coupling an inlet 150 of the valve actuator assembly 132 to an outlet 138 of the flow meter 130. The housing 122 may also contain other mechanical, electrical, and hydraulic components of the flow meter and valve assembly 120. For example, and referring to Figure 4, the flow meter and valve assembly 120 includes an inlet or hydraulic coupler 136 fluidly coupled to the flow meter 130. A control module 146 and a first pressure sensor 142 are electrically coupled to the flow meter 130. In some embodiments, the flow meter 130 is an ultrasonic flow meter, and thus the control module 146 is an ultrasonic control module. An electronic control module 148 and a second pressure sensor 144 are also electrically coupled to the flow meter 130. Fluid directed through the flow meter 130 exits the flow meter 130 at the outlet 138, travels through the flowline 134, and enters the valve actuator assembly 132 at the inlet 150. In some embodiments, the valve actuator assembly 132 is a motor actuated control valve with position feedback. The valve actuator assembly 132 is fluidly coupled to an outlet or hydraulic coupler 152 of the flow valve assembly 120. The ultrasonic control module 146, the electronic control module 148, and the pressure sensors 142, 144 are used to operate the flow valve assembly 120, and are electrically coupled to an electrical connector 140 for signal and power communication to and from the flow valve assembly 120.

[0026] Referring next to Figure 5, a side and end views of an embodiment of a flow meter system 200 is shown in accordance with principles of the present disclosure. In some embodiments, the flow meter system 200 is an ultrasonic flow meter system. In some embodiments, the flow meter system 200 can be used to replace the flow meter 130 of the above-described flow valve assembly 120. The flow meter system 200 includes a first sensor or transducer end 202 and a second sensor or transducer end 204. Coupled between the sensor

8. The flow meter system of claim 1 further comprising:

a housing surrounding the first flow sensor; and

a fluid inlet in the first flow sensor housing having an angled junction to reduce fluid cavitation.

9. The flow meter system of claim 1 further comprising a flow meter assembly, the flow meter assembly having a plurality of cores, wherein each core comprises the flow meter system of claim 1.

10. The flow meter system of claim 1 wherein the noise attenuation of the second fluid flow conduit allows the first flow sensor to measure a laminar flow rate at high pressure.

11. The flow meter system of claim 1 wherein the first flow sensor is configured to measure a fluid viscosity.

12. The flow meter system of claim 1 wherein the first flow sensor is configured to measure a fluid pressure.

13. The flow meter system of claim 1 further comprising an internal bore of the second fluid flow conduit wherein the internal bore is adjustable.

14. The flow meter system of claim 13 wherein the internal bore is configured to flow a fluid in a viscosity range of 0.1 cP to 500 cP.

15. The flow meter system of claim 1 further comprising a seal disposed between the first and second fluid flow conduits to stagnate the received fluid in the fluid annulus.

16. The flow meter system of claim 1 further comprising:

a housing surrounding the first flow sensor and having a first metal seal between the housing and the first flow sensor; and

a second metal seal between the housing and the first fluid flow conduit;

wherein the first and second metal seals are axially offset relative to a crystal of the first flow sensor.