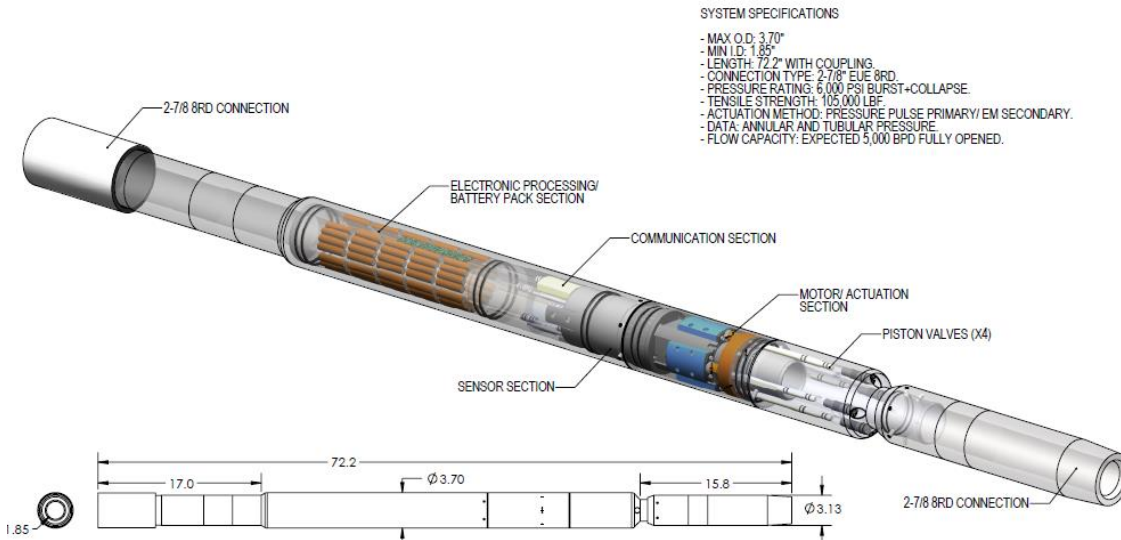




**WIRELESS THROUGH TUBIGN ELECTRIC DOWNHOLE FLOW CONTROL SYSTEM**  
**Tubel Energy**

**A. Existing Technology**

Tubel Energy has developed an Electric Downhole Flow Control Tool for multi zone applications in wellbores. The new system provides a new electrically operated Flow Control module with remote communications and actuation capabilities to control the movement of fluids from inside the pipe to the reservoir or from the reservoir to the production pipe. The system is also able to choke the flow for production optimization. The system uses a wireless communications technique for command transfer from the surface into the well. The system has ultralow power motors for the opening and closing of the pistons for the flow path.



**SPECIFICATIONS**

Wellbore Size: 4-1/2" Production Pipe



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**Flow Control Module**

Pressure Rating:	6,000 psi
Temperature Rating:	125°C
Dimensions: Diameter	3.7 inch OD and 1.85 inch ID
Length	6 ft
Flow path	4 holes Max
Communications Method:	Pressure pulses & wireless electromagnetics
Power:	6 Volts DC for the batteries 5 milli Amps when motor off and 100 milli Amps when motor is on
Useable Lifetime:	4 years at rated temperature
Duty Cycle for Flow:	One valve movement per month
Materials (flow wet):	AISI 4140 22Rc max and/or 17-4 or equivalent
Materials (long term sealing):	Tungsten Carbide

**Surface System**

Power	24 Volts DC@ 2 amps max
Communications	1,200 baud 2 way communications
Interface	USB to PC WAN