INTERPLANT STANDARD - STEEL INDUSTRY		
IPSS	**SPECIFICATION FOR MECHANICAL FLOW SWITCHS**	**IPSS: 2-07-101-15**
	No Corresponding IS Exists	Formerly-: *(New Standard)*

1. FOREWARD

a. Interplant standardization: Standardization activity in steel industry is being pursued under the aegis of Steel Authority of India Limited (SAIL). This Interplant Standard has been prepared by the Standards Committee on Instrumentation and Automation IPSS 2:7, with the active participation of representatives from the steel plants, other concerned organizations and established manufacturer in the field, and was adopted on May 2015.

b. Interplant standards on design parameters primarily aim at achieving rationalization and unification of parts and assemblies of process and auxiliary equipment used in steel plants and these are intended to provide guidance to the steel plant engineers, consultants and manufacturers in their design activities.

c. Objective – Objective of this standard is to give specification of Flow Switches to help selection of the same for the purpose to get information regarding flow of the liquid and alarm at various locations in the steel plant to monitor as well as control action.

2. SCOPE:

This interplant standard covers the specification of mechanical flow switch.

3. SAFETY PRECAUTIONS:

i. To allow the switch to detect changesin the fluid flow, the flow paddle must not touch the pipe or any restrictions in the pipe.
ii. To avoid damaging the switch, Switch shall be tightened to the TEE using wrench flat only

4. SPECIFICATION

i) Type: Target type paddle type with magnetically coupled switching system.

ii) Material: Body, flapper/ piston and wetted parts
- a) For non corrosive liquids: AISI 304 SS/ 316 SS
- b) For corrosive liquids:Brass/ Teflon/ PVC/ Polypropylene

iii) Repeatability: ± 2.0%

iv) Hysteresis: Between increasing and decreasing flow 10 to 30%

v) Switch: Reed type, shielded against outer magnetic field , SPDT, 20VA

vi) Contacts: 1 NO + 1 NC (2 NO + 2 NC optional)

vii) Contact rating: 240 V, 2A ac or 230 V, 0.5A dc

viii) Operating pressure: 0-15 kg/cm2

ix) Operating temperature: - 30°C to + 150°C

x) Set point: Adjustable, on line

xi) Mounting: a) Vertical with flow in upward direction
b) Horizontal, as desired

xii) Process connection: IS 6392:1971 Steel pipe flanges 1" BSP/ NPT or 1.5" flanged

xiii) Electrical connection: ¾ inch ET conduit through double compression type cable gland

xiv) Optional feature: a) Intrinsically safe as desired

xv) Termination: Through terminal block for external wiring suitable for full ring lugs, polymeric lead wires.

xvii) Switch enclosure: To conform to IP 65 or better weather proof housing.

5. INSTALLATION GUIDELINES:

i. Install the switch so that the cover and interior are accessible.
ii. Mount the switch so that the flow of fluid is in the direction of the arrow on the switch casing.
iii. Use a pipe union on each side of the flow switch to allow easy removal or replacement, where ever applicable.
iv. Mount the switch so that the pipe does not extend too far into the flow switch casing.
v. Use pipe thread sealer on male threads only.
vi. Do not remove the cover gasket or the wire grommet from the conduit opening.
vii. For larger sizes of pipe, use a reducing tee to keep the flow switch close to the pipe and provide adequate paddle length in the flow stream.