Specification of Glow Tube (Gas Discharge Tube) for Over Voltage Protection

1. Application:

For protection of low voltage control circuit from high over voltage. The glow tube or gas discharge tubes are inert gas filled protection devices that discharge or spark-overs due to ionization of the inert gas filled between two electrodes at a predetermined voltage. The shorting or arcing acts as a short-circuit to earth and brings the line voltage to zero or to low potential thus protecting low voltage measurement equipment and personals from accidental high voltage shock.

2. Construction:

The gas discharge tube is made in a button cell type of construction like a small disc. Two GDTs are mounted in a case as a single unit, termed as single pair protector, for easy and robust mounting.

3. Approved Makes and Grades:

The gas discharge tube, G.D. Tube CA8BB 300 V of M/s CITEL make is the Approved grade for this item. Any other grade or make should be first got approved by engineering before acceptance.

4. Characteristics:

4.1 Mechanical Characteristics

4 1.1	**Dimensions, mm**	As per drawing no. NFD 43/IND

4.2 Initial Characteristics

4.2.1	**Breakdown Voltage**	
	-Static (@ 100 V/s) : (DC)	**240-360 V**

	Impulse (@ 1 KV/μsec) : (Peak)	≤ 1000 V
4.2.2	Insulation Resistance, (100 V DC)	≥ 5000 MΩ
4.2.3	Capacitance, (at 1 KHz)	≤ 10 pF
4.2.4	Arc Voltage (at I = 2 Arms)	≤ 25 V
4.2.5	Glow Voltage (at I ≤ 1.5 A)	≤ 390 V
4.2	**Performance Test Characteristics**	
4.3.1	Breakdown Voltage Static (@ 100 V/s) : (DC)	240-350 V (at 80%)
4.3.2	Insulation Resistance, (100 V DC)	≥ 5000 MΩ
4.3.3	Impulse Discharge Current, (8/20 impulse) Interval 3 min. 10 times	10 kA
4.3.3	AC Discharge Current, (50/60 Hz) Interval 3 min. 10 times, 1 sec	20 A
4.4	**Destruction Characteristics**	
	At I ≥ 2 Amp AC rms	t ≤ 20 sec.

5. Supply Condition:

The supplies should bear the type no., BHEL order no., guarantee certificate and test-certificate with tested values as per Sl. no. 4 of this specification. The single pair protector should be properly packed to avoid damage due to transit.