



## Serie "Classic"

The instruments measure direct and / or alternating current or voltage.

### Technical data

**Movement:** The sensitive moving-coil movement is made with taut-band bearing. The material of the torsional wire is a special alloy of high strength ensuring that no permanent deformations occurs, even when the pointer is kept deflected for a long time. The wires are protected by dampers so that shocks, which are unavoidable during transportation, cannot do any damage.

**Scale:** Practically linear calibration. *Scale length:* 120 mm.

**Safety:** IEC 1010/ EN 61010-1 class 2, degree of pollution 2., CAT III.

**Class of accuracy:** according to IEC-51 (see table).

**Position of application:** horizontal.

**Weight:** approx. 1,4 kg.

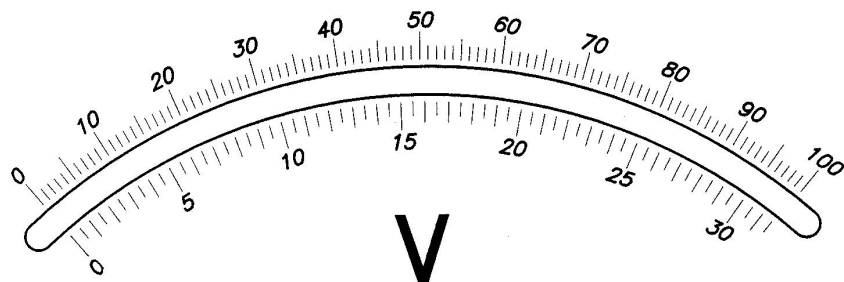


TYPE	Cat. No 1963-01-...	Class of acc.	Switchable current ranges		Switchable voltage ranges		Remark
			DC	AC	DC	AC	
HDA	001	0.5	15-30-75-150-750-300-1500 $\mu$ A				voltage drop max. 125mV
	002		(0.6mA/60mV)* 0.6-1.2-3-6-12-30-60 mA		60 mV		voltage drop max. 240mV
	010		(0.6mA/60mV)*-1.2-3-6-12-30-60-120-300 mA-0.6-1.2-3-6 A		60 mV		
	003		(0.6mA/60mV)* 0.06-0.12-0.3-0.6-1.2-3-6 A		60 mV		
	052		(250 $\mu$ A/60mV)*		60 mV		scale: 30-60-120 A
	004	1.5DC 2.5AC	(30 $\mu$ A/100mV)* 100-300 $\mu$ A 1-3-10-30-100-300 mA 1-3-10-20 A	1-3-10-30-100-300 mA 1-3-10-20 A	100 mV		voltage drop max. 300mV
	005		1-3-10-30-100-300 mA 1-3-10-20 A	1-3-10-30-100-300 mA 1-3-10-20 A			voltage drop max. 300mV
HDV	011	0.5			60-120-300-600 mV-1.2-3-6 V		internal resist. 4 k $\Omega$ /V DC
	012				6-12-30-60-120-300-600 V		
	016	1			60-100-300 mV-1-3-10-30-100-300-600 V		internal resist. 31.6k $\Omega$ /V DC
	054				30-100mV-1-3-10-30-100-300-1000V	1-3-10-30-100-300-1000V	internal resist. 31.6k $\Omega$ /V DC 5 k $\Omega$ /V AC
	013	1.5DC 2.5AC			30-100-300 mV 1-3-10-30-100-300-600 V	1-3-10-30-100-300-600 V	
	055				15-30-100-300 mV 1-3-10-30-100-300-1000 V	1-3-10-30-100-300-1000 V	internal resist. 100 k $\Omega$ /V DC 20 k $\Omega$ /V AC

\*For connection to separate (SH type) shunt.

### Ordering data:

- Portable moving-coil ammeter.
- Type: **HDA**.
- Portable moving-coil ammeter.
- Range : 15  $\mu$ A-1.5 mA DC.
- Cat. No. **1963-01-001**





# AMMETERS AND VOLTMETERS WITH MOVING-COIL MOVEMENT



## Addendum to the HDA-HDV series

The following table contains the new HDA – HDV models released on 01-12-2002..

TYPE	Cat. No 1963-01-...	Class of acc.	Switchable current ranges DC	Switchable voltage ranges DC	Remark
HDA	058	1	50-160-500 $\mu$ A-1,6-5-16-50mA- 1,6-5-10A	30-120mV	voltage drop max. 200mV
HDV	059			100-160-500 mV-1,6-5-16-50-160-500-1000V	internal resist. 20 k $\Omega$ /V DC
HDAV	057		(50 $\mu$ A /30mV)*- (160 $\mu$ A /120mV)*- 500 $\mu$ A-1,6-5-16-50mA-1,6-5-10A	30-100-120-160-500 mV-1,6-5-16-50-160- 500-1000 V	voltage drop max. 200mV internal resist. 20 k $\Omega$ /V DC

\*For connection to separate shunt.

## Scale of HDAV

