



1. This standard establishes the allocation and designation of the ratios and gauges of model railroads.
2. The **relative size** of railroad models is expressed by the term "**scale**." Each scale ratio is given a "name" which consists of one or more letters or a Roman numeral (table 1).  
 The distance between the rails of a railroad (model or prototype) is indicated by the term "**gauge**." In the model world, the various prototype track gauges are grouped in four subsets. The scale without auxiliary letter denotes all "standard" track gauges 1250 mm and larger. Models of narrow-gauge railroads having prototype gauges less than 1250 mm are designated by one of three auxiliary letters m, e, or i appended to the scale. For this combined scale and gauge designation the term "gauge" is used.

Examples:

Modeling a standard gauge railroad at 1 : 87 ratio:  
 H0 Scale, H0 (Standard) Gauge (Track Gauge 16.5 mm)

Modeling a meter-gauge railroad at 1 : 45 ratio:  
 0 Scale, 0m (Meter) Gauge (Track Gauge 22.5 mm)

**Table 1**

Ratio <sup>1)2)</sup>	Scale Meter in mm	Scale	Corresponding model gauge for given prototype gauge			
			1250 to 1700	850 to < 1250	650 to < 850	400 to < 650
1:220	4,5	Z	6,5	-	-	-
1:160	6,3	N	9	6,5	-	-
1:120	8,3	TT	12	9	6,5	-
1:87	11,5	H0	16,5	12	9	6,5
1:64	15,6	S	22,5	16,5	12	9
1:45 <sup>3)</sup>	22,2	0	32	22,5	16,5	12
1:32	31,3	I	45	32	22,5	16,5
1:22,5	44,4	II	64	45	32	22,5
1:16	62,5	III	89	64	45	32
1:11	90,9	IV	127	89	64	45
1:8	125	V	184	127	89	64
1:5,5	181,8	VI	260	184	127	89
Auxiliary letter to be appended to the scale:			-	<b>m</b>	<b>e</b>	<b>i</b>

- Notes:**
- 1) Individual functional components can deviate from established standards which, in turn, may be outside of tolerance values specified in applicable datasheets..
  - 2) For broad-gauge (prototype track gauge greater than 1435 mm), scale can be computed starting with the track gauge (prototype compared to model). This can be particularly useful for scales greater than scale I.
  - 3) In some countries the ratio 1 : 43,5 is used. In such case, a scale meter equals 23,0 mm.

3. Previously, the track gauges specified in table 1 corresponded to the following:

mm	32	45	64	89	127	184	260
Inches	1 ¼	1 ¾	2 ½	3 ½	5	7 ¼	10 ¼

4. Besides the track gauges listed in Table 1, large scale exhibition models of standard gauge railroad vehicles are often built to the gauges 72 mm and 144 mm (being respectively 1:20 and 1:10 ratio).

5. The model ratios specified in table 1 differ somewhat from those used in earlier years. Also, it was sometimes the practice to measure track gauge as the distance between the center (electrical pick-up) rail and the outer (running) rail.

Prior to 1950, H0 scale and 00 scale were indistinguishable. Today, 00 scale is largely confined to Great Britain and indicates 1:76 ratio models running on 16.5 mm gauge track.

Previously, Gauge II indicated 1:27 ratio models and 51 mm gauge track; this ratio and gauge is no longer common.

6. In Anglo-Saxon countries, the ratio is often expressed in terms of "mm per foot."

For example, the ratio indicated by the terminology

3,5 mm scale is 1:87,

4 mm scale is 1:76, and

7 mm scale is 1:43,5.

7. To convert measurements from one scale into another determine the multiplicative factor by dividing the design ratio by the desired scale ratio. The example below shows the conversion factor from 0 to H0 scale.

Example:	Drawing	M 1:45	Multiplicative factor =	$\frac{45}{87}$	= 0,517 (or 51.7%)
	Model	M 1:87			