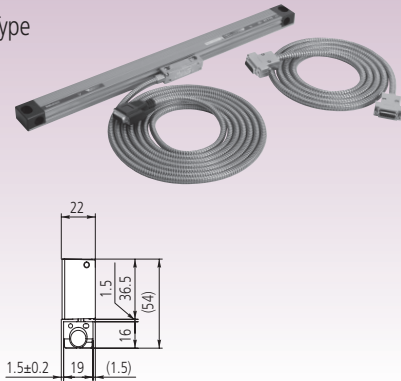


Scale Unit Selection Guide

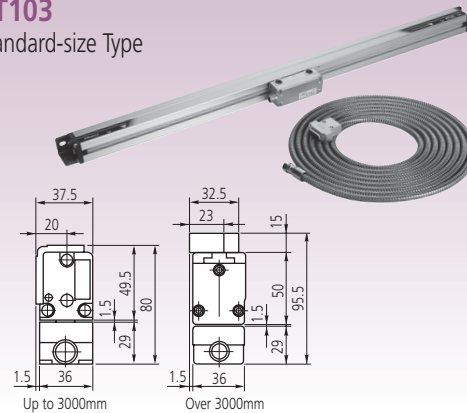
AT715

Absolute Type



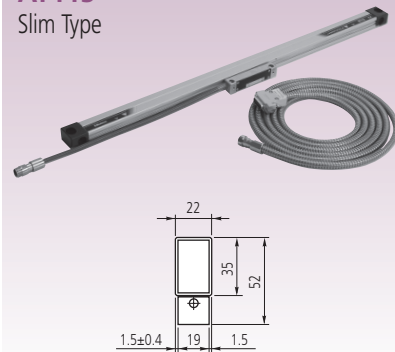
AT103

Standard-size Type



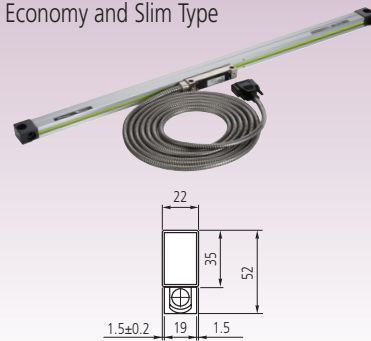
AT113

Slim Type



AT116

Economy and Slim Type



Specifications

Model	AT715	AT103	AT113, AT116
Measurement method	Electromagnetic induction system	Photoelectric (transparent linear encoder)	
Light source	—	LED	
Receptor	—	Phototransistor	
Output wave form	—	2-phase sine curves with a phase difference of 90°	
Max Resolution	.000020" (20μm)/0.5μm	.000005" (5μm)/0.1μm	
Effective length (for high-accuracy type)	100 - 3000mm	100 - 6000mm (100 - 2000mm)	100 - 1500mm (100 - 1500mm)
Accuracy* [high-accuracy type]	±5μm (Effective length: 100 - 500mm) ±7μm (Effective length: 600 - 1800mm) ±10μm (Effective length: 2000 - 3000mm)	(5+5L ₀ /1000)μm* ¹ [(3+3L ₀ /1000)μm]	(5+5L ₀ /1000)μm [(3+3L ₀ /1000)μm* ²]
Maximum response speed	50m/min.	120m/min.* ³	120m/min. (50m/min.: AT116)
Scale reference point	Absolute system	At every 50mm interval	
Linear expansion coefficient	—	(8±1)×10 ⁻⁶ /°C	
Power supply	5V±5% DC	5V±5% DC	
Max. current consumption	70mA	70mA* ⁴ (60mA: AT113, AT116)	
Operating temperature	—	0°C to 45°C	
Storage temperature	—	-20°C to 70°C	
Relative humidity	—	20 - 80%RH	
Head cable length	—	—	* ⁶
Sliding force	5N or less	5N or less	
Single cable* ⁵	Standard accessory (refer to individual specifications for the length)		
Dust/water protection level	IP67	IP53	

*1: (5+8L₀/1000)μm for models over 3250mm effective length

*2: not available for AT116

*3: 50m/min. for models over 3250mm effective length

*4: 140mA for models over 3250mm effective length

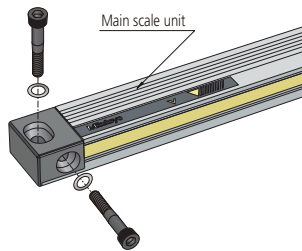
*5: Vinyl-coated type single cable and extension cable are available on request.

*6: AT103:0.3m AT116: Without head cable

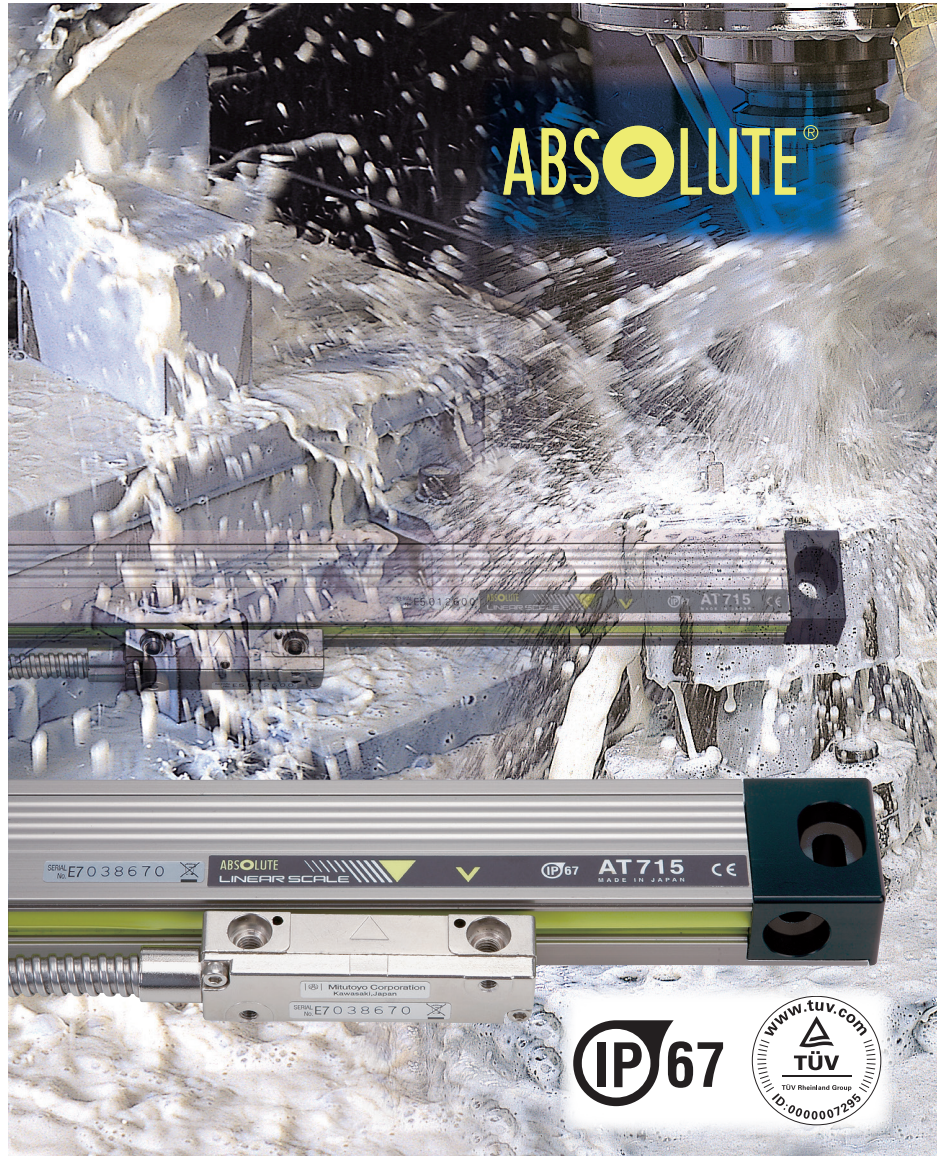
AT715, ABSOLUTE and High Environmental Resistance Type Using ABSOLUTE® Electromagnetic Induction System

Features

- Employs the ABSOLUTE® electromagnetic induction system* to achieve IP67 environmental resistance.
- Detects and outputs an absolute position - reference point setup not necessary every time unit is turned on.
- An abnormal calculation doesn't accumulate even if the calculation mistake is generated by electrical noise.
- Two mounting directions of the main scale unit allows easy mounting on a machine tool with difficult mounting arrangements.
- Resolution: down to .000020" (20µin)/0.5µm (selectable resolution per display)



* Patent registered (Japan, USA, India, China, Germany, UK, France, Switzerland)



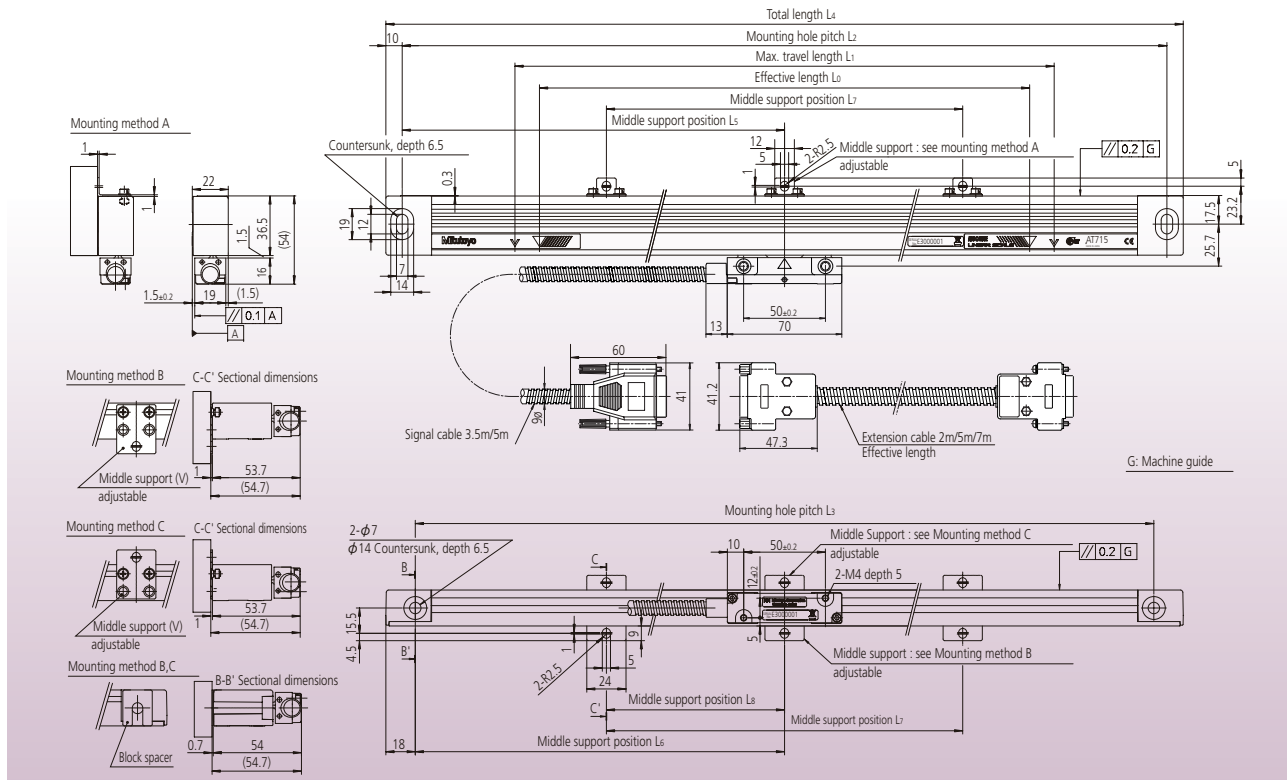
Extension cable*

Order No.	Cable length
09AAB674A	2m (6.5 feet)
09AAB674B	5m (16.4 feet)
09AAB674C	7m (22.9 feet)

Mounting parts (provided as standard)

Items included	Quantity	Items included	Quantity
• Hex-socket head screw (M6x25)	2 pcs.	• Plain washer (4mm nominal)	2 pcs.
• Hex-socket head screw (M4x25)	2 pcs.	• Cable clip	6 pcs.
• Hex-socket head screw (M4x8)	6 pcs.	• Spacer (0.3, 0.4, 0.5, 0.6mm)	1 pc. each
• Plain washer (6mm nominal)	2 pcs.		

*: Max total length including the signal cable : 15m.



Order No. and mounting dimensions

mm (inch)

Order No. / Model No.	Effective length L_0	Maximum travel length L_1	Mounting hole pitch L_2	Mounting hole pitch L_3	Overall length L_4	L_5	Middle support positions L_6	L_7	Signal cable length
539-801R / AT715-100	100(4")	120(4.72")	258(10.16")	242 (9.53")	278(10.94")	—	—	—	3500 (137.80)
539-802R / AT715-150	150(6")	170(6.69")	308(12.13")	292 (11.50")	328(12.91")	—	—	—	
539-803R / AT715-200	200(8")	220(8.66")	358(14.09")	342 (13.46")	378(14.88")	—	—	—	
539-804R / AT715-250	250(10")	270(10.63")	408(16.06")	392 (15.43")	428(16.85")	—	—	—	
539-805R / AT715-300	300(12")	330(12.99")	468(18.43")	452 (17.80")	488(19.21")	—	—	—	
539-806R / AT715-350	350(14")	380(14.96")	518(20.39")	502 (19.76")	538(21.18")	—	—	—	
539-807R / AT715-400	400(16")	430(16.93")	568(22.36")	552 (21.73")	588(23.15")	—	—	—	
539-808R / AT715-450	450(18")	480(18.90")	618(24.33")	602 (23.70")	638(25.12")	—	—	—	
539-809R / AT715-500	500(20")	540(21.26")	678(26.69")	662 (26.06")	698(27.48")	339(13.35")	331(13.03")	—	
539-811R / AT715-600	600(24")	640(25.20")	778(30.63")	762 (30.00")	798(31.42")	389(15.31")	381(15.00")	—	
539-813R / AT715-700	700(28")	740(29.13")	878(34.57")	862 (33.94")	898(35.35")	439(17.28")	431(16.97")	—	
539-814R / AT715-750	750(30")	780(30.71")	918(36.14")	902 (35.51")	938(36.93")	459(18.07")	451(17.76")	—	
539-815R / AT715-800	800(32")	840(33.07")	978(38.50")	962 (37.87")	998(39.29")	489(19.25")	481(18.94")	—	
539-816R / AT715-900	900(36")	940(37.01")	1078(42.44")	1062 (41.81")	1098(43.23")	539(21.22")	531(20.91")	—	
539-817R / AT715-1000	1000(40")	1040(40.94")	1178(46.38")	1162 (45.75")	1198(47.17")	589(23.19")	581(22.87")	—	
539-818R / AT715-1100	1100(44")	1140(44.88")	1278(50.31")	1262 (49.69")	1298(51.10")	639(25.16")	631(24.87")	430(16.93")	
539-819R / AT715-1200	1200(48")	1240(48.82")	1378(54.25")	1362 (53.62")	1398(55.04")	689(27.13")	681(26.81")	460(18.11")	
539-820R / AT715-1300	1300(52")	1340(52.76")	1478(58.19")	1462 (57.56")	1498(58.98")	739(29.10")	731(28.77")	490(19.29")	
539-821R / AT715-1400	1400(56")	1440(56.69")	1578(62.13")	1562 (61.50")	1598(62.91")	789(31.07")	781(30.74")	520(20.47")	
539-822R / AT715-1500	1500(60")	1540(60.63")	1678(66.06")	1662 (65.43")	1698(66.85")	839(33.04")	831(32.71")	550(21.65")	
539-823R / AT715-1600	1600(64")	1640(64.57")	1778(70.00")	1762 (69.37")	1798(70.79")	889(35.01")	881(34.68")	580(22.83")	
539-824R / AT715-1700	1700(68")	1740(68.50")	1878(73.94")	1862 (73.31")	1898(74.72")	939(36.98")	931(36.65")	610(24.01")	
539-825R / AT715-1800	1800(72")	1840(72.44")	1978(77.87")	1962 (77.24")	1998(78.66")	989(38.95")	981(38.59")	640(25.19")	
539-860R / AT715-2000	2000(80")	2040(80.31")	2178(85.75")	2162 (85.12")	2198(86.54")	1039(40.92")	1031(40.57")	670(26.37")	
539-861R / AT715-2200	2200(88")	2240(88.19")	2378(93.62")	2362 (92.99")	2398(94.41")	1089(42.89")	1081(42.54")	700(27.55")	
539-862R / AT715-2400	2400(96")	2440(96.06")	2578(101.50")	2562 (100.87")	2598(102.28")	1139(44.86")	1131(44.51")	730(28.73")	
539-863R / AT715-2500	2500(100")	2540(100.00")	2678(105.43")	2662 (104.80")	2698(106.22")	1189(46.83")	1181(46.48")	760(29.91")	
539-864R / AT715-2600	2600(104")	2640(103.94")	2778(109.37")	2762 (108.74")	2798(110.16")	1239(48.80")	1231(48.45")	790(31.09")	
539-865R / AT715-2800	2800(112")	2840(111.81")	2978(117.24")	2962 (116.61")	2998(118.03")	1289(50.77")	1281(50.42")	820(32.27")	
539-866R / AT715-3000	3000(120")	3040(119.68")	3178(125.12")	3162 (124.49")	3198(125.91")	1339(52.74")	1331(52.39")	850(33.45")	

*1: Signal cable length is the combination of built-in signal cable and extension cable (2m).