

ABS AT1100 Series

(Resolution 0.05 μm Specification)

ABSOLUTE™



Introduction video available here.



Features

- This series has adopted a new structure not easily subject to infiltration of coolant and a dust-proof rubber highly resistant to coolant attack. It offers a field support type linear scale with higher reliability than before.
- The sensor-to-scale air gap in this series of electromagnetic induction scales is approximately 0.4 mm – around 4 times as wide as that of a conventional optical or electromagnetic sensor. The increased air gap reduces the likelihood of failure due to the accumulation of contaminants and is one of the world's largest to be found in a machine tool scale.
- The de facto standard frame multipoint mounting method has been adopted to provide high resistance to vibration and shock.
- The improvement of signal processing technology in the electromagnetic induction type absolute linear encoder has achieved approximately 6 times higher accuracy than that of previous scales.
- This series is compatible with the high-speed serial interface from leading machine-tool companies, allowing direct connection to an NC controller.

Meaning of Model No.

ABS AT11 **3** -

Effective range

Interface specifications

Applicable system	Scale model
FANUC CORPORATION, Serial αi Series	ABS AT1153
Mitsubishi Electric Corporation MDS-D/MDS-DH Series	ABS AT1143
Siemens AG DRIVE-CLiQ	ABS AT1123
Mitutoyo ENSIS	ABS AT1103A

Note 1: For the details of applicable systems, inquiries should be made of each manufacturer.

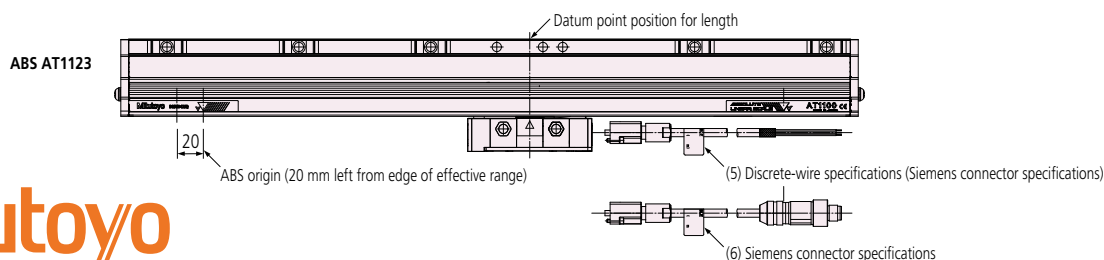
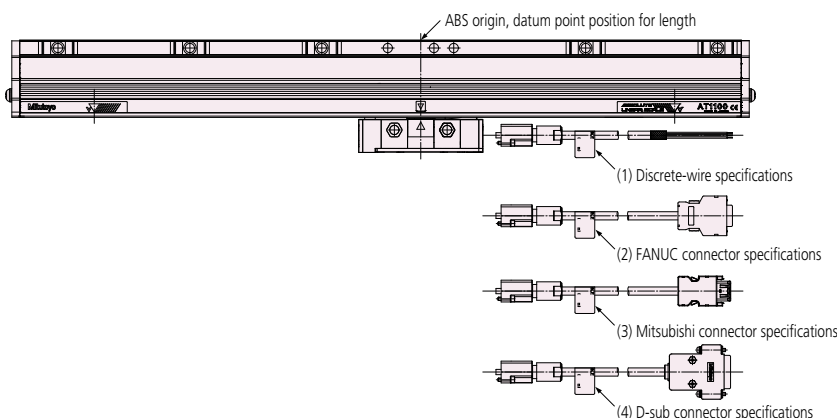
Note 2: **ABS AT11** **3**

Transmission method
 Nothing: Full duplex communication
 A: Half-duplex communication

Scale configuration

[ABS AT1100 Series]

ABS AT1153
 ABS AT1143
 ABS AT1103A

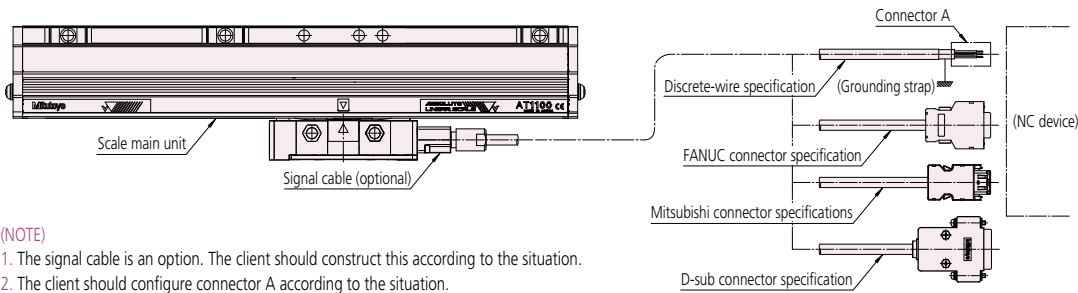


Specifications

Items	Model	ABS AT11□3(A)
Detection method		Electromagnetic induction
Mounting method		Frame multipoint
Reference position for expansion due to temperature variation		Refer to the External View diagram (L5)
Effective range		24 types: 140, 240, 340, 440, 540, 640, 740, 840, 940, 1040, 1140, 1240, 1340, 1440, 1540, 1640, 1740, 1840, 2040, 2240, 2440, 2640, 2840, 3040 mm
Resolution		0.05 μm
Maximum response speed		3000 mm/s
Indication accuracy (20 °C)		Effective range L ₀ =140 - 2040 mm: 3 + 5L ₀ /1000 (μm) Effective range L ₀ =2240 - 3040 mm: 5 + 5L ₀ /1000 (μm)
Expansion coefficient		≈8×10 ⁻⁶ /K
Vibration resistance		≤196 m/s ² (55 - 2000 Hz)
Shock resistance		Effective range L ₀ =140 - 2040 mm: ≤343 m/s ² Effective range L ₀ =2240 - 3040 mm: ≤294 m/s ² (1/2 sin 11 ms)
Power supply voltage		ABS AT1153/1143/AT1103A : 5 VDC ± 10% ABS AT1123 : 24 VDC (Conforming to DRIVE-CLiQ)
Maximum current consumption		AT1153 : 300 mA (Max.) AT1143 : 290 mA (Max.) AT1123 : 140 mA (Max.) AT1103A : 300 mA (Max.)
Operational temperature/humidity ranges		0 to 50 °C 20 - 80%RH (non-condensing)
Storage temperature/humidity ranges		-20 to 70 °C 20 - 80%RH (non-condensing)

System Configuration (Example)

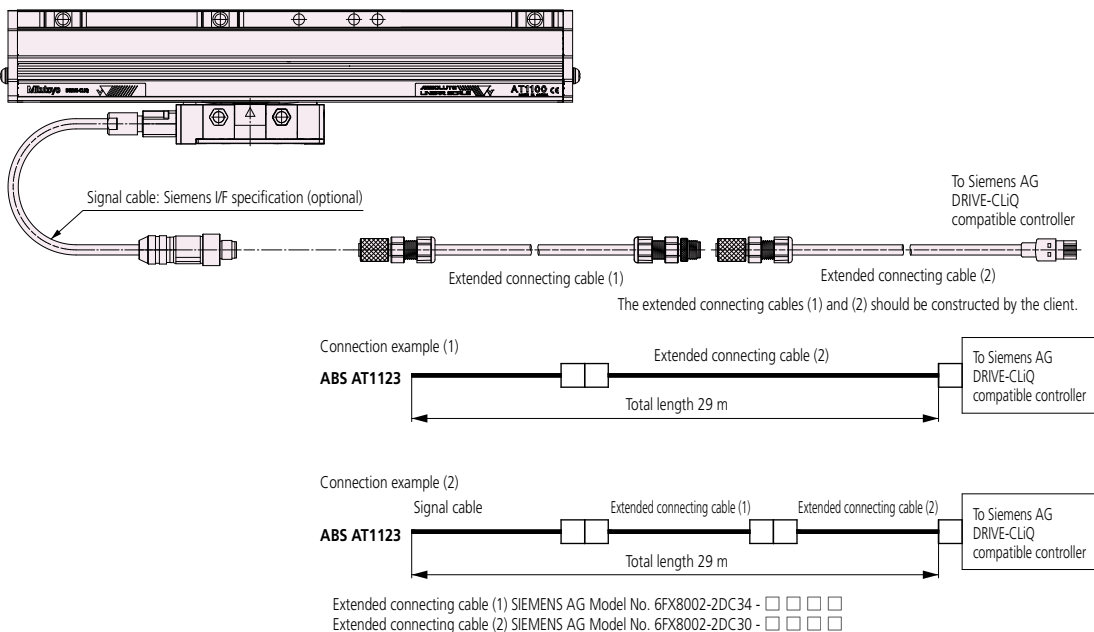
[Connection example 1] [ABS AT1153/AT1143/AT1103A]



(NOTE)

1. The signal cable is an option. The client should construct this according to the situation.
2. The client should configure connector A according to the situation.
3. Installation of connector A and the grounding strap is the responsibility of the client.
4. Each cable length in the above system configuration must be up to 12 m. If any cable length exceeds 12 m, use the cable configuration as shown in [Connection example 2].

[ABS AT1123]



(NOTE)

1. The extended connecting cables should be constructed by the client.
2. Keep the total length of signal cable and extended connecting cable(s) less than 29 m.
3. For the signal cable specification and how to obtain, contact Siemens AG.

Output specifications

• ABS AT1153 / 1143 / AT1103A (discrete-wire)

Wire color	Signal
Brown	SD
Red	*SD
Orange	RQ (REQ)
Yellow	*RQ (REQ)
White (2P)	+5 V
Black (2P)	GND
Shield wire	F.G

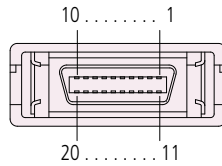
* Cable to be constructed by the client (A total of 29 m with the signal cable).

• ABS AT1153

FANUC connector specifications (FI-20)

Pin No.	Signal
1	SD
2	*SD
5	RQ (REQ)
6	*RQ (REQ)
12, 14	GND
18, 20	+5 V
16	F.G
3, 4, 7 - 11, 13, 15, 17, 19	Not used

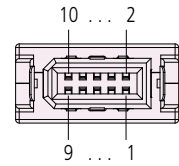
* Cable to be constructed by the client (A total of 29 m with the signal cable).



• ABS AT1143

Mitsubishi connector specifications (MDR)

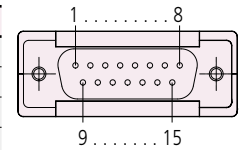
Pin No.	Signal
1	5 V
2	GND
3	RQDT
4	RQDT̄
7	DT
8	DT̄
5, 6, 9, 10	Not used
Connector shell	F.G



• ABS AT1103A

Mitutoyo connector specifications (D-sub 15-pin)

Pin No.	Signal
1, 2	GND
3, 4	+5 V
5	DT
6	DT̄
7	RQDT
8	RQDT̄
9 - 14	Not used
15	F.G
Connector shell	F.G



• ABS AT1123 (discrete-wire)

Siemens connector specifications

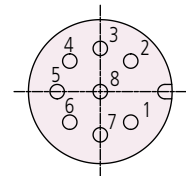
Wire color	Signal
White/Brown	+24 V
Brown	GND
White/Blue	TEST
Blue	TEST̄
White/Orange	TXP
Orange	TXN
White/Green	RXP
Green	RXN
Shield	F.G

Note: Leave test terminals (TEST, TEST̄) disconnected during use.

• ABS AT1123

M12 connector specifications

Pin No.	Signal
1	+24 V
2	TEST
3	RXP
4	RXN
5	GND
6	TXN
7	TXP
8	TEST̄
Shield sleeve	F.G



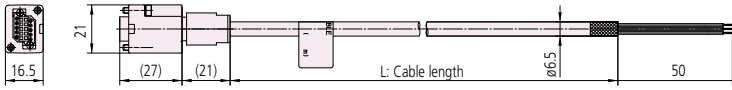
Note: Leave test terminals (TEST, TEST̄) disconnected during use.

Cable Dimensions FANUC connector specifications (AT1153 Series)

Unit: mm

Discrete-wire specification

Detector head (custom) side: Water-proof type



PVC sheath

Order No.	Model	Cable length (m)
06AFG596-1	AT1100F/M discrete-wire cable 1 m	1
06AFG596-3	AT1100F/M discrete-wire cable 3 m	3
06AFG596-6	AT1100F/M discrete-wire cable 6 m	6
06AFG596-9	AT1100F/M discrete-wire cable 9 m	9
06AFG596-12	AT1100F/M discrete-wire cable 12 m	12

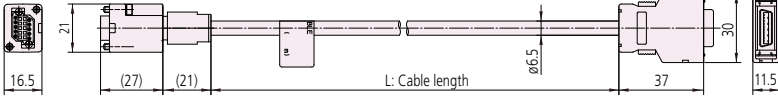
PUR sheath

Order No.	Model	Cable length (m)
06AFX744-1	AT1100PUR discrete-wire cable 1 m	1
06AFX744-3	AT1100PUR discrete-wire cable 3 m	3
06AFX744-6	AT1100PUR discrete-wire cable 6 m	6
06AFX744-9	AT1100PUR discrete-wire cable 9 m	9
06AFX744-12	AT1100PUR discrete-wire cable 12 m	12

FANUC connector specifications

Detector head (custom) side: Water-proof type

NC (FI-20) side: Non-waterproof



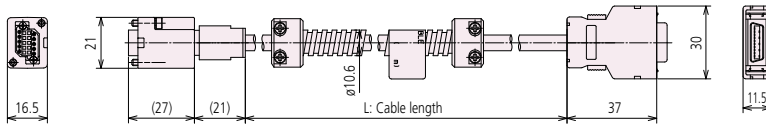
PVC sheath

Order No.	Model	Cable length (m)
06AFF921-1	AT1100F Cable FUNUC 1 m	1
06AFF921-3	AT1100F Cable FUNUC 3 m	3
06AFF921-6	AT1100F Cable FUNUC 6 m	6
06AFF921-9	AT1100F Cable FUNUC 9 m	9
06AFF921-12	AT1100F Cable FUNUC 12 m	12

PUR sheath

Order No.	Model	Cable length (m)
06AGB149-1	AT1150PUR Cable F 1 m	1
06AGB149-3	AT1150PUR Cable F 3 m	3
06AGB149-6	AT1150PUR Cable F 6 m	6
06AGB149-9	AT1150PUR Cable F 9 m	9
06AGB149-12	AT1150PUR Cable F 12 m	12

FANUC connector specifications Conduit



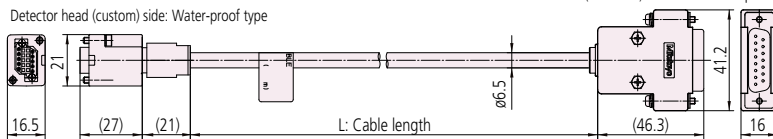
PVC sheath

Order No.	Model	Cable length (m)
06AFX739-1	AT1100F C Cable F 1 m	1
06AFX739-3	AT1100F C Cable F 3 m	3
06AFX739-6	AT1100F C Cable F 6 m	6
06AFX739-9	AT1100F C Cable F 9 m	9
06AFX739-12	AT1100F C Cable F 12 m	12

D-sub 15-pin connector

Detector head (custom) side: Water-proof type

NC (Dsub 15) side: Non-waterproof



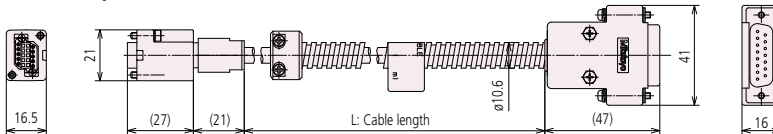
PVC sheath

Order No.	Model	Cable length (m)
06AFY915-1	AT1100E Cable D15 1 m	1
06AFY915-3	AT1100E Cable D15 3 m	3
06AFY915-6	AT1100E Cable D15 6 m	6
06AFY915-9	AT1100E Cable D15 9 m	9
06AFY915-12	AT1100E Cable D15 12 m	12

PUR sheath

Order No.	Model	Cable length (m)
06AFX743-1	AT1100PUR C Cable D15 1 m	1
06AFX743-3	AT1100PUR C Cable D15 3 m	3
06AFX743-6	AT1100PUR C Cable D15 6 m	6
06AFX743-9	AT1100PUR C Cable D15 9 m	9
06AFX743-12	AT1100PUR C Cable D15 12 m	12

D-sub 15-pin connector Conduit



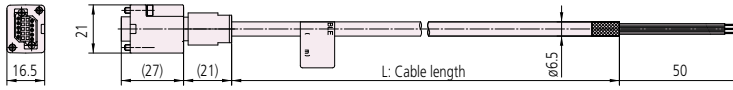
PVC sheath

Order No.	Model	Cable length (m)
06AFY916-1	AT1100E C Cable D15 1 m	1
06AFY916-3	AT1100E C Cable D15 3 m	3
06AFY916-6	AT1100E C Cable D15 6 m	6
06AFY916-9	AT1100E C Cable D15 9 m	9
06AFY916-12	AT1100E C Cable D15 12 m	12

Cable Dimensions Mitsubishi connector specifications (AT1143 Series)

Discrete-wire specification

Detector head (custom) side: Water-proof type



PVC sheath

Order No.	Model	Cable length (m)
06AFG596-1	AT1100F/M discrete-wire cable 1 m	1
06AFG596-3	AT1100F/M discrete-wire cable 3 m	3
06AFG596-6	AT1100F/M discrete-wire cable 6 m	6
06AFG596-9	AT1100F/M discrete-wire cable 9 m	9
06AFG596-12	AT1100F/M discrete-wire cable 12 m	12

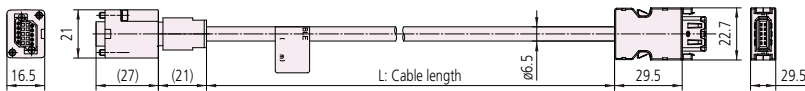
PUR sheath

Order No.	Model	Cable length (m)
06AFX744-1	AT1100PUR discrete-wire cable 1 m	1
06AFX744-3	AT1100PUR discrete-wire cable 3 m	3
06AFX744-6	AT1100PUR discrete-wire cable 6 m	6
06AFX744-9	AT1100PUR discrete-wire cable 9 m	9
06AFX744-12	AT1100PUR discrete-wire cable 12 m	12

Mitsubishi connector specifications

Detector head (custom) side: Water-proof type

NC (MDR) side: Non-waterproof



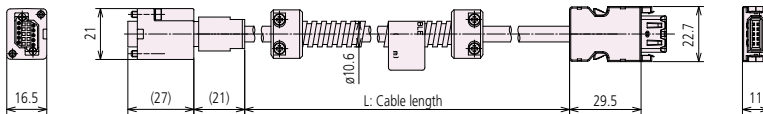
PVC sheath

Order No.	Model	Cable length (m)
06AFF957-1	AT1100M Cable MDS-D 1 m	1
06AFF957-3	AT1100M Cable MDS-D 3 m	3
06AFF957-6	AT1100M Cable MDS-D 6 m	6
06AFF957-9	AT1100M Cable MDS-D 9 m	9
06AFF957-12	AT1100M Cable MDS-D 12 m	12

PUR sheath

Order No.	Model	Cable length (m)
06AFX746-1	AT1140PUR Cable M 1 m	1
06AFX746-3	AT1140PUR Cable M 3 m	3
06AFX746-6	AT1140PUR Cable M 6 m	6
06AFX746-9	AT1140PUR Cable M 9 m	9
06AFX746-12	AT1140PUR Cable M 12 m	12

Mitsubishi connector specifications Conduit



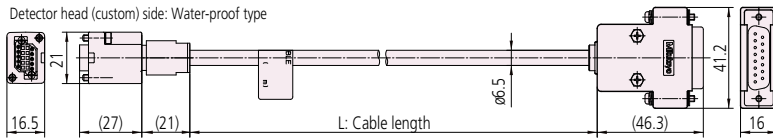
PVC sheath

Order No.	Model	Cable length (m)
06AFX740-1	AT1100M C Cable M 1 m	1
06AFX740-3	AT1100M C Cable M 3 m	3
06AFX740-6	AT1100M C Cable M 6 m	6
06AFX740-9	AT1100M C Cable M 9 m	9
06AFX740-12	AT1100M C Cable M 12 m	12

D-sub 15-pin connector

Detector head (custom) side: Water-proof type

NC (Dsub 15) side: Non-waterproof



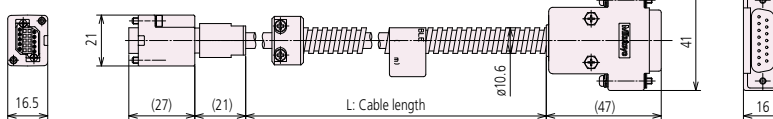
PVC sheath

Order No.	Model	Cable length (m)
06AFY915-1	AT1100E Cable D15 1 m	1
06AFY915-3	AT1100E Cable D15 3 m	3
06AFY915-6	AT1100E Cable D15 6 m	6
06AFY915-9	AT1100E Cable D15 9 m	9
06AFY915-12	AT1100E Cable D15 12 m	12

PUR sheath

Order No.	Model	Cable length (m)
06AFX743-1	AT1100PUR Cable D15 1 m	1
06AFX743-3	AT1100PUR Cable D15 3 m	3
06AFX743-6	AT1100PUR Cable D15 6 m	6
06AFX743-9	AT1100PUR Cable D15 9 m	9
06AFX743-12	AT1100PUR Cable D15 12 m	12

D-sub 15-pin connector Conduit



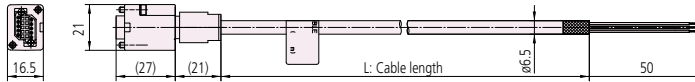
PVC sheath

Order No.	Model	Cable length (m)
06AFY916-1	AT1100E C Cable D15 1m	1
06AFY916-3	AT1100E C Cable D15 3 m	3
06AFY916-6	AT1100E C Cable D15 6 m	6
06AFY916-9	AT1100E C Cable D15 9 m	9
06AFY916-12	AT1100E C Cable D15 12 m	12

Cable Dimensions Siemens connector specifications (AT1123 Series)

Discrete-wire specification

Detector head (custom) side: Water-proof type



PVC sheath

Order No.	Model	Cable length (m)
06AFM103-1	AT1100S discrete-wire cable 1 m	1
06AFM103-3	AT1100S discrete-wire cable 3 m	3
06AFM103-6	AT1100S discrete-wire cable 6 m	6
06AFM103-9	AT1100S discrete-wire cable 9 m	9
06AFM103-12	AT1100S discrete-wire cable 12 m	12

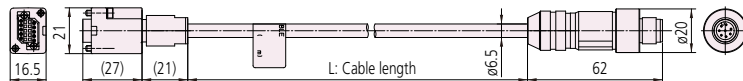
PUR sheath

Order No.	Model	Cable length (m)
06AFX747-1	AT1120PUR discrete-wire cable 1 m	1
06AFX747-3	AT1120PUR discrete-wire cable 3 m	3
06AFX747-6	AT1120PUR discrete-wire cable 6 m	6
06AFX747-9	AT1120PUR discrete-wire cable 9 m	9
06AFX747-12	AT1120PUR discrete-wire cable 12 m	12

M12 connector

Detector head (custom) side: Water-proof type

NC (M12) side: Water-proof type



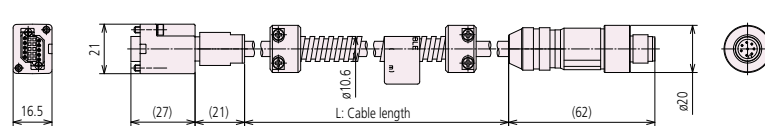
PVC sheath

Order No.	Model	Cable length (m)
06AFL121-1	AT1100S Cable M12 1 m	1
06AFL121-3	AT1100S Cable M12 3 m	3
06AFL121-6	AT1100S Cable M12 6 m	6
06AFL121-9	AT1100S Cable M12 9 m	9
06AFL121-12	AT1100S Cable M12 12 m	12

PUR sheath

Order No.	Model	Cable length (m)
06AFX748-1	AT1120PUR Cable M12 1 m	1
06AFX748-3	AT1120PUR Cable M12 3 m	3
06AFX748-6	AT1120PUR Cable M12 6 m	6
06AFX748-9	AT1120PUR Cable M12 9 m	9
06AFX748-12	AT1120PUR Cable M12 12 m	12

M12 connector Conduit



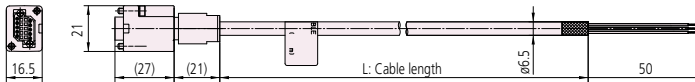
PVC sheath

Order No.	Model	Cable length (m)
06AFX741-1	AT1100S C Cable M12 1 m	1
06AFX741-3	AT1100S C Cable M12 3 m	3
06AFX741-6	AT1100S C Cable M12 6 m	6
06AFX741-9	AT1100S C Cable M12 9 m	9
06AFX741-12	AT1100S C Cable M12 12 m	12

Cable Dimensions ENSIS connector specifications (AT1103A Series)

Discrete-wire specification

Detector head (custom) side: Water-proof type



PVC sheath

Order No.	Model	Cable length (m)
06AFG596-1	AT1100F/M discrete-wire cable 1 m	1
06AFG596-3	AT1100F/M discrete-wire cable 3 m	3
06AFG596-6	AT1100F/M discrete-wire cable 6 m	6
06AFG596-9	AT1100F/M discrete-wire cable 9 m	9
06AFG596-12	AT1100F/M discrete-wire cable 12 m	12

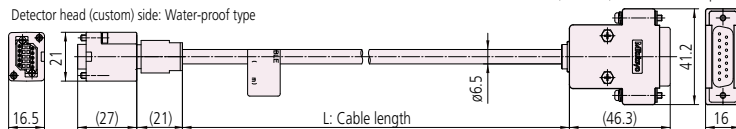
PUR sheath

Order No.	Model	Cable length (m)
06AFX744-1	AT1100PUR discrete-wire cable 1 m	1
06AFX744-3	AT1100PUR discrete-wire cable 3 m	3
06AFX744-6	AT1100PUR discrete-wire cable 6 m	6
06AFX744-9	AT1100PUR discrete-wire cable 9 m	9
06AFX744-12	AT1100PUR discrete-wire cable 12 m	12

D-sub 15-pin connector

Detector head (custom) side: Water-proof type

NC (Dsub 15) side: Non-waterproof



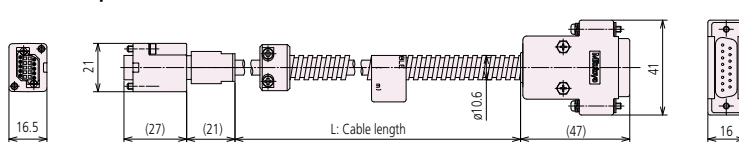
PVC sheath

Order No.	Model	Cable length (m)
06AFY915-1	AT1100E Cable D15 1 m	1
06AFY915-3	AT1100E Cable D15 3 m	3
06AFY915-6	AT1100E Cable D15 6 m	6
06AFY915-9	AT1100E Cable D15 9 m	9
06AFY915-12	AT1100E Cable D15 12 m	12

PUR sheath

Order No.	Model	Cable length (m)
06AFX743-1	AT1100PUR Cable D15 1 m	1
06AFX743-3	AT1100PUR Cable D15 3 m	3
06AFX743-6	AT1100PUR Cable D15 6 m	6
06AFX743-9	AT1100PUR Cable D15 9 m	9
06AFX743-12	AT1100PUR Cable D15 12 m	12

D-sub 15-pin connector Conduit



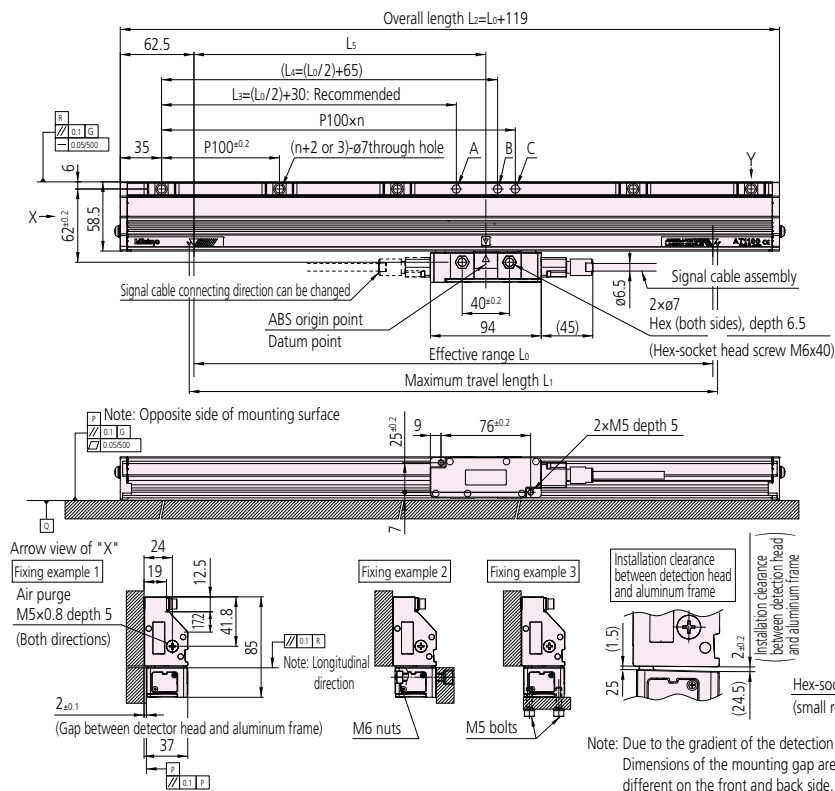
PVC sheath

Order No.	Model	Cable length (m)
06AFY916-1	AT1100E C Cable D15 1 m	1
06AFY916-3	AT1100E C Cable D15 3 m	3
06AFY916-6	AT1100E C Cable D15 6 m	6
06AFY916-9	AT1100E C Cable D15 9 m	9
06AFY916-12	AT1100E C Cable D15 12 m	12

External View

Unit: mm

• ABS AT1153/AT1143/AT1103A



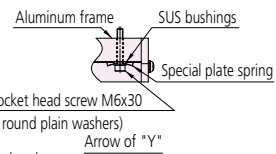
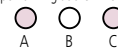
Note:

1. G represents the machine guide.
2. P represents the opposite side of the aluminum frame mounting surface.
- Also, S represents the opposite side of the detector head mounting surface.
3. Q and R represent the linear scale's reference surfaces for mounting.
4. For descriptions of L₀ to L₅ in the figure, refer to the table below.
5. Check the mounting dimensions using the head clamping tool.
6. For the center ø7, it is recommended that it be fastened at two points, A and C.
7. A-ø7 is identical to position C due to its effective range. At this time, the center ø7 will be 2 points.
8. The number of holes at complete fixing positions differs depending on the overall scale length. For details, refer to the following description.

For 2 holes: 2-point fixing at both hole positions



For 3 holes: 2-point fixing at the 2-hole positions of A and C (recommended)



Note: Due to the gradient of the detection head, Dimensions of the mounting gap are different on the front and back side.

Dimensions

Order No.	Model	Effective range L ₀ (mm)	Maximum travel length L ₁ (mm)	Overall length L ₂ (mm)	Mounting pitch			n
					L ₃ (mm)	L ₄ (mm)	L ₅ (mm)	
559-100-□3	AT11□3(A)-140	140	148	259	100	135	90	2
559-101-□3	AT11□3(A)-240	240	248	359	150	185	147.5	3
559-102-□3	AT11□3(A)-340	340	348	459	200	235	190	4
559-103-□3	AT11□3(A)-440	440	448	559	250	285	247.5	5
559-104-□3	AT11□3(A)-540	540	548	659	300	335	290	6
559-105-□3	AT11□3(A)-640	640	648	759	350	385	347.5	7
559-106-□3	AT11□3(A)-740	740	748	859	400	435	390	8
559-107-□3	AT11□3(A)-840	840	848	959	450	485	447.5	9
559-108-□3	AT11□3(A)-940	940	948	1059	500	535	490	10
559-109-□3	AT11□3(A)-1040	1040	1048	1159	550	585	547.5	11
559-110-□3	AT11□3(A)-1140	1140	1148	1259	600	635	590	12
559-111-□3	AT11□3(A)-1240	1240	1248	1359	650	685	647.5	13
559-112-□3	AT11□3(A)-1340	1340	1348	1459	700	735	690	14
559-113-□3	AT11□3(A)-1440	1440	1448	1559	750	785	747.5	15
559-114-□3	AT11□3(A)-1540	1540	1548	1659	800	835	790	16
559-115-□3	AT11□3(A)-1640	1640	1648	1759	850	885	847.5	17
559-116-□3	AT11□3(A)-1740	1740	1748	1859	900	935	890	18
559-117-□3	AT11□3(A)-1840	1840	1848	1959	950	985	947.5	19
559-118-□3	AT11□3(A)-2040	2040	2048	2159	1050	1085	1047.5	21
559-119-□3	AT11□3(A)-2240	2240	2248	2359	1150	1185	1147.5	23
559-120-□3	AT11□3(A)-2440	2440	2448	2559	1250	1285	1247.5	25
559-121-□3	AT11□3(A)-2640	2640	2648	2759	1350	1385	1347.5	27
559-122-□3	AT11□3(A)-2840	2840	2848	2959	1450	1485	1447.5	29
559-123-□3	AT11□3(A)-3040	3040	3048	3159	1550	1585	1547.5	31

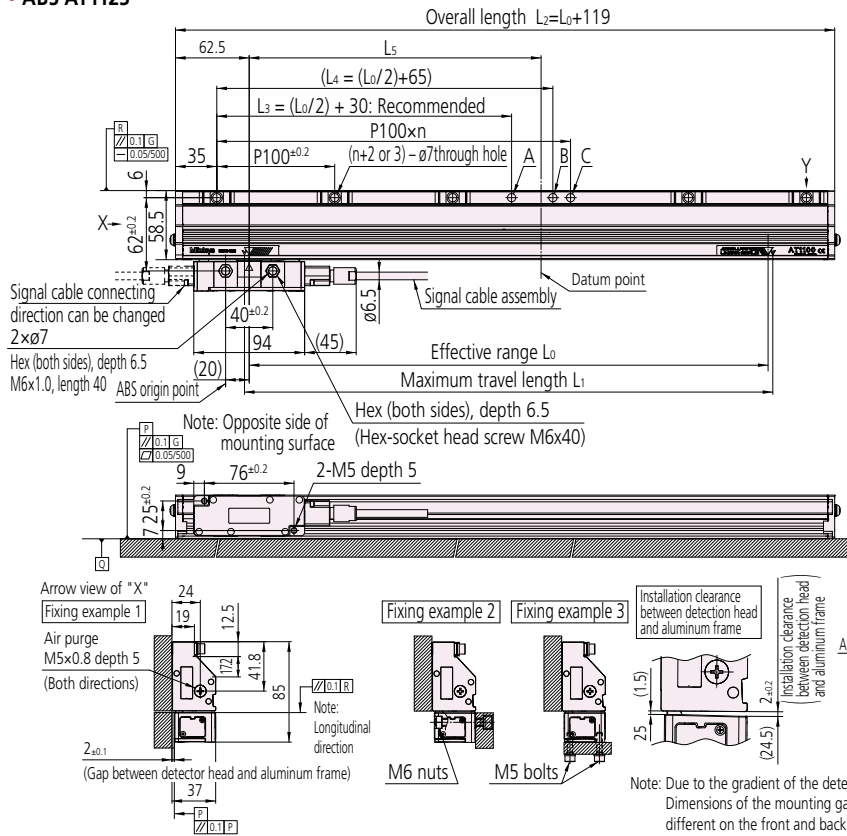
Note: □ in Order No. and Model indicates the interface specification as follows:

AT1143: 4
AT1153: 5
AT1103A: 0

External View

Unit: mm

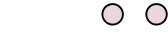
• ABS AT1123



Notes:

1. G represents the machine guide.
2. P represents the opposite side of the aluminum frame mounting surface. Also, S represents the opposite side of the detector head mounting surface.
3. Q and R represent the linear scale's reference surfaces for mounting.
4. For descriptions of L_0 to L_5 in the figure, refer to the table below.
5. Check the mounting dimensions using the head clamping tool.
6. For the center $\phi 7$, it is recommended that it be fastened at two points, A and C.
7. A- $\phi 7$ is identical to position C due to its effective range. At this time, the center $\phi 7$ will be 2 points.
8. The number of holes at complete fixing positions differs depending on the overall scale length. For details, refer to the following description.

For 2 holes: 2-point fixing at both hole positions



For 3 holes: 2-point fixing at the 2-hole positions of A and C (recommended)



Dimensions

Order No.	Model	Effective range L_0 (mm)	Maximum travel length L_1 (mm)	Overall length L_2 (mm)	Mounting pitch			n
					L_3 (mm)	L_4 (mm)	L_5 (mm)	
559-100-23	AT1123-140	140	148	259	100	135	90	2
559-101-23	AT1123-240	240	248	359	150	185	147.5	3
559-102-23	AT1123-340	340	348	459	200	235	190	4
559-103-23	AT1123-440	440	448	559	250	285	247.5	5
559-104-23	AT1123-540	540	548	659	300	335	290	6
559-105-23	AT1123-640	640	648	759	350	385	347.5	7
559-106-23	AT1123-740	740	748	859	400	435	390	8
559-107-23	AT1123-840	840	848	959	450	485	447.5	9
559-108-23	AT1123-940	940	948	1059	500	535	490	10
559-109-23	AT1123-1040	1040	1048	1159	550	585	547.5	11
559-110-23	AT1123-1140	1140	1148	1259	600	635	590	12
559-111-23	AT1123-1240	1240	1248	1359	650	685	647.5	13
559-112-23	AT1123-1340	1340	1348	1459	700	735	690	14
559-113-23	AT1123-1440	1440	1448	1559	750	785	747.5	15
559-114-23	AT1123-1540	1540	1548	1659	800	835	790	16
559-115-23	AT1123-1640	1640	1648	1759	850	885	847.5	17
559-116-23	AT1123-1740	1740	1748	1859	900	935	890	18
559-117-23	AT1123-1840	1840	1848	1959	950	985	947.5	19
559-118-23	AT1123-2040	2040	2048	2159	1050	1085	1047.5	21
559-119-23	AT1123-2240	2240	2248	2359	1150	1185	1147.5	23
559-120-23	AT1123-2440	2440	2448	2559	1250	1285	1247.5	25
559-121-23	AT1123-2640	2640	2648	2759	1350	1385	1347.5	27
559-122-23	AT1123-2840	2840	2848	2959	1450	1485	1447.5	29
559-123-23	AT1123-3040	3040	3048	3159	1550	1585	1547.5	31

ABS AT1100 Signal Check Program

The ABS AT1100 signal check program can diagnose the scale signal by connecting the ABS AT1100 Series to the conversion unit connected to a PC with the "ABS AT1100 signal check program" installed.

The AT1100 signal check program allows the PC to execute the following.

- 1) Confirm the signal display with "Signal Monitor"
- 2) Confirm the track status with "Track Error Monitor"
- 3) Confirmation of position data with "Position Monitor"
- 4) Check error history by "Error History Check"

• Required items

Item	Quantity	Details	Notes
PC*	1	DOS/V (Windows version)	Provided by user
Conversion unit	1	USB-485 (422) DS15P (System Sacom Industry Corp.)	Optional (bundle)
Connection cable A	1	USB cable	
Connection cable B	1	RS-485 cable or RS-422 cable	
Application software	1	ABS AT1100 Signal Check Program	

* This program requires a PC with the following operating environment.

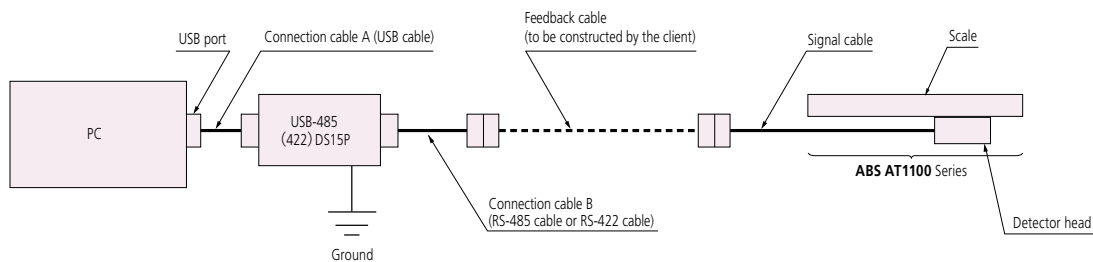
CPU	: 1 GHz or faster
Memory	: 1 GB min.
Program size	: 10 MB
OS	: Windows 7 or later
Monitor	: 1024x768 or higher is recommended

• "Conversion unit, application software" set

Order No.	Applicable model	Conversion unit	Connecting cable B
06AGD689	AT1103A	USB-485 DS15P	MIT cable (Mitutoyo ENSIS)
06AGD690	AT1143	USB-422 DS15P	MDS cable (Mitsubishi Electric Corporation)
06AGD691	AT1153	USB-422 DS15P	FANUC cable

Note: Each manufacture I/F has different Order No., since connection cable B and Conversion unit are different for each I/F.

• Connection details



Note 1: To prevent the possibility of electric shock the device must be grounded.

Note 2: The conversion unit's power source is supplied via connection cable A from the PC USB port.