

Alco Controls™

AMI / MIA / CIA Moisture Indicators

Technical Bulletin

The **AMI / MIA / CIA** series of Moisture Indicators are designed to monitor the moisture content within the liquid line of a refrigeration system.

MIA and CIA series with stainless steel body and extended copper tube connections are fully hermetic products without the use of any gasket.

AMI is a highly serviceable product with exchangeable lens assembly and indicator element. available in various configurations including saddle type.

Features

- Maximum working Pressure PS:
 - AMI: 35 bar
 - MIA: 45 bar
 - CIA: 60 bar for subcritical CO₂
- Crystal indicator element for long lifetime and reliability
- Highest sensitivity moisture indicator available
- Indication of dryness according to ASERCOM recommendation
- Easy determination of moisture content with calibrated four colors
- Large clear viewing area
- AMI sight glass with grooves to distinguish between pure liquid and pure vapor





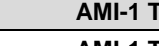
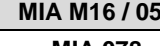

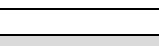
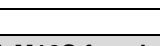


AMI








MIA/CIA

Selection table

For tube outside diameter		AMI-1	Part No.	MIA	Part No.	CIA	Part No.
6			AMI-1 TT2 MM		MIA M06		CIA M06
	1/4		805697		805880		805914
			805655		805883		805910
10			AMI-1 TT3 MM		MIA M10		CIA M10
	3/8		805698		805881		805915
			805654		805884		805911
12			AMI-1 TT4 MM		MIA M12		CIA M12
	1/2		805699		805882		805916
			805653		805885		805912
16	5/8		AMI-1 TT5		MIA M16 / 058		CIA M16 / 058
			805652		805886		805913
22	7/8		AMI-1 TT7		MIA 078		
			805656		805887		
28			AMI-1 TT9 MM		MIA M28		
	1 1/8		805700		805891		
			805651		805892		
10				MIA M10S female/male	805888		
12				MIA M12S female/male	805889		

Selection Charts AMI continuation

For tube outside diameter		Type	Part No.	Configuration	Picture
mm	inch				
6		AMI-1 SS2 MM	805732	Female solder x female solder ODF x ODF	
	1/4	AMI-1 SS2	805713		
10		AMI-1 SS3 MM	805733		
	3/8	AMI-1 SS3	805714		
12		AMI-1 SS4 MM	805734		
	1/2	AMI-1 SS4	805715		
16	5/8	AMI-1 SS5	805716		
22	7/8	AMI-1 SS7	805717		
28		AMI-1 SS9 MM	805703		
	1 1/8	AMI-1 SS9	805705		
6	1/4	AMI-1 MM2	805706	Male flare x male flare	
10	3/8	AMI-1 MM3	805707		
12	1/2	AMI-1 MM4	805708		
16	5/8	AMI-1 MM5	805709		
6	1/4	AMI-1 FM2	805710	Female flare x male flare	
10	3/8	AMI-1 FM3	805711		
12	1/2	AMI-1 FM4	805712		
35	1 3/8	AMI-2 S11	805704	Male solder ODM (for soldering into fittings)	
42	1 5/8	AMI-2 S13	805659		
54	2 1/8	AMI-2 S17	805687		
22	7/8	AMI-3 S7	805650	Saddle type (for soldering onto the pipe)	
28	1 1/8	AMI-3 S9	805649		
35	1 3/8	AMI-3 S11	805648		

Technical Data

Maximum working pressure PS:	AMI 35 bar MIA 45 bar CIA 60 bar
Test pressure PT:	MIA 49.5 bar CIA 66 bar AMI 39 bar
Operating temperature TS:	-40...+100°C
Medium compatibility: (Not released for use with caustic, poisonous or flammable substances)	R134a, R22, R404A, R407C, R507 R410A (MIA), R744 (CIA) Mineral, Alkyl benzene and ester lubricants

Marking:	UL: see SA 4876. CSA for Canada: AMI series except AMI-3 MIA series except MIA-078 CE : AMI types with connection >32mm belong to Cat. I of the PED 97/23/EC and are CE-marked ERC
Standards:	EN 12178
Pressure drop:	negligible
Installation location:	In any position

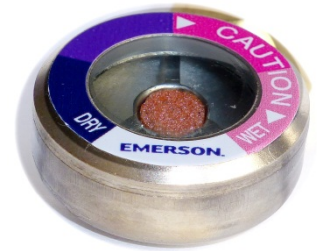
AMI / MIA / CIA Moisture Indicators

Crystal Indicator

Where many products in the market use insensitive and technically simple paper indicators, Emerson has retained the long established crystal moisture indicators in all existing product series because of its known advantages. This guarantees system performance by providing a sensitive and durable monitoring of the systems moisture content, enabling the indicator to react to a minimum moisture level of 50 ppm specified by leading compressor manufacturers (see Asercom statement: www.asercom.org).

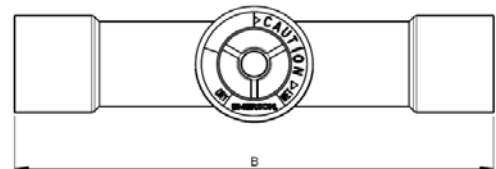
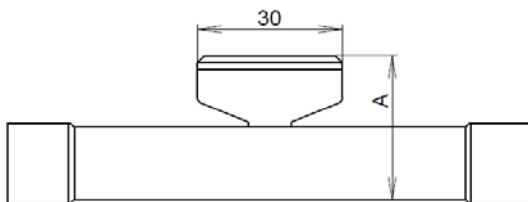
Moisture Contents by Indicator Colour

Refrigerant	Liquid temperature °C	Moisture content in mg Water per kg refrigerant (ppm)			
		blue	purple	fuchsia	rose
		Dry		Caution	Caution wet
R22	25	25	40	80	145
	38	35	65	130	205
	52	50	90	185	290
R404A / R507	25	15	33	60	120
	38	25	50	110	150
	52	45	60	140	180
R134a	25	20	35	90	130
	38	35	55	120	160
	52	50	85	150	190
R407C	25	26	42	94	151
	38	40	68	144	232
	52	64	109	230	371
R410A	25	30	50	110	165
	38	55	85	190	290
	52	75	120	270	420
R744	-40	3	5	10	16
	-20	6	10	20	32
	-10	8	14	29	46
	0	11	19	39	63
	5	13	22	46	75
	20	20	34	72	116



Note: In area "Caution" and "Caution wet" filter drier should be changed.

Dimensions MIA / CIA [mm]



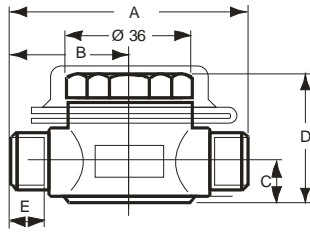
Type	Part No.	For tube outside diameter	Height A (mm)	Lenght B (mm)	Weight (g)
MIA 014	805883	1/4"	25.7	98.0	60
CIA 014	805910				
MIA 038	805884	3/8"	28.5	109.0	70
CIA 038	805911				
MIA 012	805885	1/2"	31.8	113.0	75
CIA 012	805912				
MIA 058	805886	5/8"	31.8	108.5	85
CIA 058	805913				
MIA 078	805887	7/8"	37.8	122.5	150
MIA 118	805892	1 1/8"	43.5	122.5	190

Type	Part No.	For tube outside diameter	Height A (mm)	Lenght B (mm)	Weight (g)
MIA M06	805880	6 mm	25.9	98.0	60
CIA M06	805914				
MIA M10	805881	10 mm	28.5	109.0	70
CIA M10	805915				
MIA M12	805882	12 mm	28.5	113.0	75
CIA M12	805916				
MIA M16	805886	16 mm	28.5	108.5	85
CIA M16	805913				
MIA M28	805891	28 mm	43.5	122.5	190
MIA M10 S Female/Male	805888	10 mm	28.7	119	75
MIA M12 S Female/Male	805889	12 mm	28.5	113	75

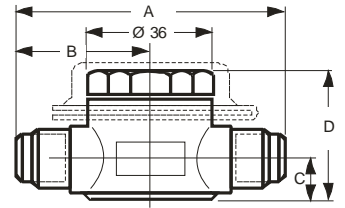
AMI / MIA / CIA Moisture Indicators

Dimensions AMI series [mm]

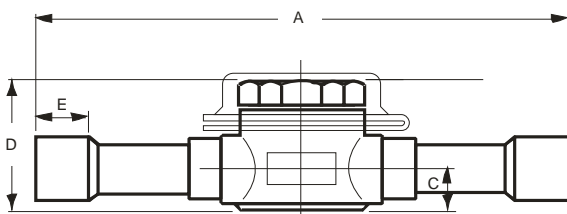
AMI-1 SS:



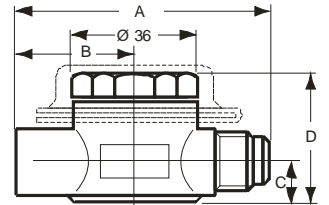
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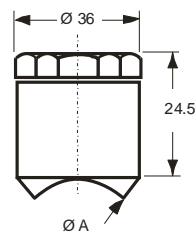
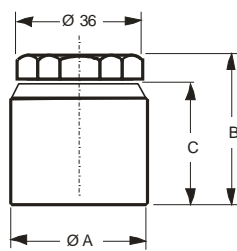
AMI-1 TT:



AMI-1 FM:



AMI-1	Ø mm	Ø Zoll	A	B	C	D	E
AMI-1 SS 2	6	1/4	57	29	9	30	8
AMI-1 SS 3	10	3/8	57	29	9	30	8
AMI-1 SS 4	12	1/2	67	33	12	37	10
AMI-1 SS 5	16	5/8	67	33	12	37	13
AMI-1 SS 7	22	7/8	80	40	15	44	20
AMI-1 SS 9	28	1-1/8	86	43	17	49	22
AMI-1 TT 2	6	1/4	124	62	9	30	8
AMI-1 TT 3	10	3/8	124	62	9	30	8
AMI-1 TT 4	12	1/2	126	63	12	37	10
AMI-1 TT 5	16	5/8	126	63	12	37	13
AMI-1 TT 7	22	7/8	164	82	15	44	19
AMI-1 TT 9	28	1-1/8	170	85	17	49	22
AMI-1 MM 2	6	1/4	79	40	9	30	
AMI-1 MM 3	10	3/8	86	43	9	30	
AMI-1 MM 4	12	1/2	92	46	12	37	
AMI-1 MM 5	16	5/8	98	49	12	37	
AMI-1 FM 2	6	1/4	70	30	9	30	
AMI-1 FM 3	10	3/8	76	33	12	37	
AMI-1 FM 4	12	1/2	82	36	12	37	



AMI-2	Ø mm	Ø Zoll	Ø A	B	C
AMI-2 S 11	35	1-3/8	35	40	34
AMI-2 S 13	42	1-5/8	42	43	37
AMI-2 S 17	54	2-1/8	54	50	43

AMI-3	Ø A
AMI-3 S7	22.4
AMI-3 S9	28.8
AMI-3 S11	35.2

Accessories for AMI

	Type	Part No.
Lens assembly kit	X 12978-1	805742
O-Ring	x 99995	805643

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