

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 Charts

For tube outside diameter		AMI-1	Part No.	MIA	Part No.	CIA	Part No.
6		AMI-1 TT2 MM	805697	MIA M06	805880	CIA M06	805914
	1/4	AMI-1 TT2	805655	MIA 014	805883	CIA 014	805910
10		AMI-1 TT3 MM	805698	MIA M10	805881	CIA M10	805915
	3/8	AMI-1 TT3	805654	MIA 038	805884	CIA 038	805911
12		AMI-1 TT4 MM	805699	MIA M12	805882	CIA M12	805916
	1/2	AMI-1 TT4	805653	MIA 012	805885	CIA 012	805912
16	5/8	AMI-1 TT5	805652	MIA M16 / 058	805886	CIA M16 / 058	805913
22	7/8	AMI-1 TT7	805656	MIA 078	805887		
28		AMI-1 TT9 MM	805700	MIA M28	805891		
	1 1/8	AMI-1 TT9	805651	MIA 118	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		
10	3/8	AMI-1 FM3	805711	Female flare x male flare	
12	1/2	AMI-1 FM4	805712		
35	1 3/8	AMI-2 S11	805704		
42	1 5/8	AMI-2 S13	805659	Male solder ODM (for soldering into fittings)	
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 31 bar MIA 45 bar CIA 60 bar
Test pressure PT:	AMI 39 bar MIA 49.5 bar CIA 66 bar
Medium compatibility: (Not released for use with caustic, poisonous or flammable substances)	R134a, R22, R404A, R407C, R507 R410A (MIA), R744 (CIA). Not suitable for R11 or Ammonia. Mineral, Alkyl benzene and ester lubricants.
Operating temperature TS:	-40 to 100°C

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 EAC
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).

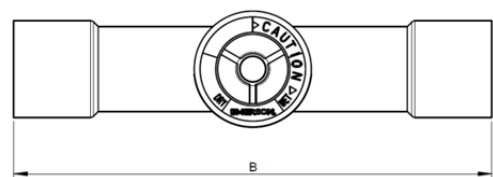
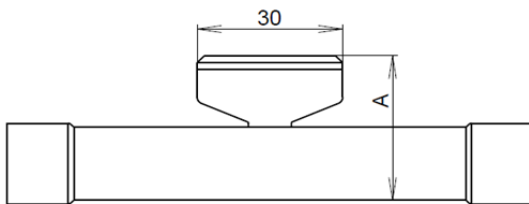
Moisture Contents by Indicator Colour

Refrigerant	Liquid temperature °C	Moisture content in mg Water per kg refrigerant (ppm)			
		blue Dry	purple	fuchsia Caution	rose 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, not to scale)



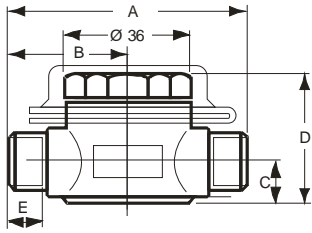
Type	Part No.	For tube outside diameter	Height A (mm)	Length B (mm)	Weight (g)
MIA 014 CIA 014	805 883 805 910	1/4"	25,7	98,0	60
MIA 038 CIA 038	805 884 805 911	3/8"	28,5	109,0	70
MIA 012 CIA 012	805 885 805 912	1/2"	31,8	113,0	75
MIA 058 CIA 058	805 886 805 913	5/8"	31,8	108,5	85
MIA 078	805 887	7/8"	37,8	122,5	150
MIA 118	805 892	1 1/8"	43,5	122,5	190

Type	Part No.	For tube outside diameter	Height A (mm)	Length B (mm)	Weight (g)
MIA M06 CIA M06	805 880 805 914	6 mm	25,9	98,0	60
MIA M10 CIA M10	805 881 805 915	10 mm	28,5	109,0	70
MIA M12 CIA M12	805 882 805 916	12 mm	28,5	113,0	75
MIA M16 CIA M16	805 886 805 913	16 mm	28,5	108,5	85
MIA M28	805 891	28 mm	43,5	122,5	190
MIA M10 S Female/Male	805 888	10 mm	28,7	119	75
MIA M12 S Female/Male	805 889	12 mm	28,5	113	75

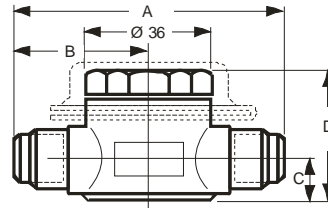
AMI / MIA / CIA Moisture Indicators

Dimensions AMI series (mm, not to scale)

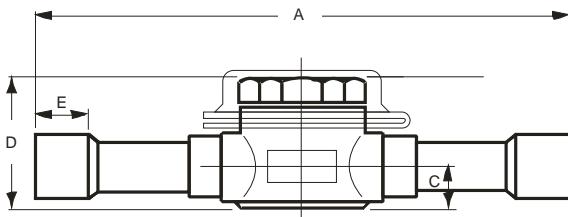
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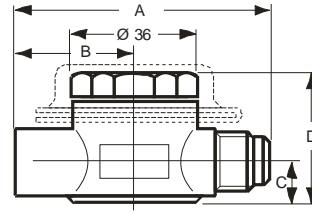
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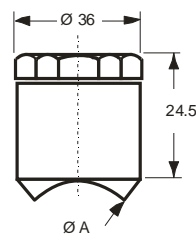
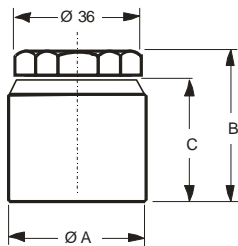
AMI-1 SS:



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	805 742
O-Ring	x 99995	805 643

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