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Application Engineering Europe

MOISTURE / LIQUID INDICATORS AMI / MIA / CIA

General information

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

MIA & 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

- 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 colours
- Large clear viewing area
- AMI sight glass with grooves to distinguish between pure liquid and pure vapor

NOTE: Product types for safety class A3, please refer to separate documents.

A1 A2L A3



AMI




MIA / CIA

Selection Table - MIA





Tube Outside Ø		Type	Part No.	Max. allowable Pressure PS	Markings				Medium	Configuration	Illustration
(mm)	(Inch)				UL	CSA	CE	UK CA			
					SA4876	Canada	Cat. I PED				
6		MIA M06	805880	45 bar	✓	✓		A1 R134a R22 R404A R407C R507 R513A R410A	female solder x female solder ODF x ODF		
	1/4	MIA 014	805883								
10		MIA M10	805881								
	3/8	MIA 038	805884								
12		MIA M12	805882								
	1/2	MIA 012	805885								
16	5/8	MIA M16 / 058	805886								
22	7/8	MIA 078	805887								
28		MIA M28	805891	✓	✓		A2L R452B R454A R454B R123yf R454C	female solder x male solder			
	1-1/8	MIA 118	805892								
10		MIA M10S	805888	45 bar	✓	✓					
12		MIA M12S	805889								

NOTE: For assistance with selection, please contact your local Emerson Sales offices.

Selection Table - CIA

For Tube Outside Diameter		Type	Part No.	Max. allowable Pressure PS	Markings				Medium	Configutration	Illustration
(mm)	(Inch)				UL	CSA	CE	UK CA			
					SA4876	Canada	Cat. I PED				
6		CIA M06	805914	60 bar	√	√			(A1) R744 (A2L) R32	female solder x female solder ODF x ODF	
	1/4	CIA 014	805910								
10		CIA M10	805915								
	3/8	CIA 038	805911								
12		CIA M12	805916								
	1/2	CIA 012	805912								
16	5/8	CIA M16 / 058	805913								

Selection Table - AMI

Tube Outside Ø		Type	Part No.	Max. allowable Pressure PS	Markings				Medium	Configutration	Illustration
(mm)	(Inch)				UL	CSA	CE	UK CA			
					SA4876	Canada	Cat. I PED				
6		AMI-1 TT2 MM	805697	35 bar	√	√			(A1) R134a R22 R404A R407C R507 R513A	female solder x female solder ODF x ODF	
	1/4	AMI-1 TT2	805655								
10		AMI-1 TT3 MM	805698								
	3/8	AMI-1 TT3	805654								
12		AMI-1 TT4 MM	805699								
	1/2	AMI-1 TT4	805653								
16	5/8	AMI-1 TT5	805652								
22	7/8	AMI-1 TT7	805656								
28		AMI-1 TT9 MM	805700								
	1-1/8	AMI-1 TT9	805651								
6		AMI-1 SS2 MM	805732	35 bar	√	√			(A1) R134a R22 R404A R407C R507 R513A	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	35 bar	√	√				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	35 bar	√	√				female flare x male flare	
10	3/8	AMI-1 FM3	805711								
12	1/2	AMI-1 FM4	805712								

NOTE: For assistance with selection, please contact your local Emerson Sales offices.

Selection Table – AMI-2... / AMI-3...

Tube Outside Ø		Type	Part No.	Max. allowable Pressure PS	Markings				Medium	Configutration	Illustration
(mm)	(Inch)				UL	CSA	CE	UK CA			
35	1-3/8	AMI-2 S11	805704	35 bar	✓	✓		R134a R22	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	35 bar	✓			R404A R407C R507 R513A	saddle type (for soldering onto the pipe)		
28	1-1/8	AMI-3 S9	805649								
35	1-3/8	AMI-3 S11	805648								

T Selection Table Accessory – AMI

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

NOTE: For assistance with selection, please contact your local Emerson Sales offices.

Crystal Colour 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).



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

AMI / MIA		A1 (AMI / MIA)						A2L (MIA only)				
Ppm**	Refr. (°C)*	R22	R404A R507	R134a	R407C	R410A	R513A	R452B	R454B	R454A	R454C	R123yf
		Blue/ Dry	25	25	15	20	26	30	15	22	24	22
	38	35	25	35	40	55	20	34	34	30	28	14
	52	50	45	50	64	75	24	46	46	38	35	16
Purple	25	40	33	35	42	50	19	28	28	27	27	14
	38	65	50	55	68	85	25	42	42	37	35	17
	52	90	60	85	109	120	30	58	58	48	44	20
Fuchsia/ Caution	25	80	60	90	94	110	44	66	68	64	64	34
	38	130	110	120	144	190	58	99	101	87	82	40
	52	185	140	150	230	270	71	136	138	122	105	46
Rose/ Caution WET!	25	145	120	130	151	165	75	112	119	108	108	58
	38	205	150	160	232	290	98	168	170	148	138	68
	52	290	180	190	371	420	121	230	232	190	177	78

NOTE: *) Liquid Temperature **) ppm = mg water per Kg refrigerant

CIA		A1 (CIA only)					A2L (CIA only)			
ppm	Refr. (°C)*	R744					R32			
		-40	-20	-10	0	+5	+20	25	38	52
Blue/ Dry		3	6	8	11	13	20	6	8	12
Purple		5	10	14	19	22	34	9	13	19
Fuchsia/ Caution		10	20	29	39	46	72	21	29	43
Rose/ Caution WET!		16	32	46	63	75	116	34	46	69

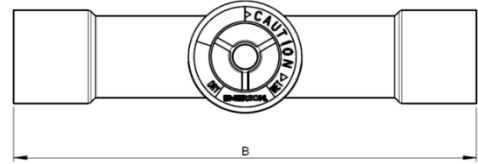
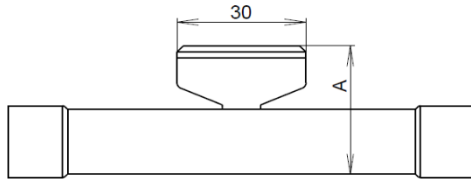
Technical Data

Max. allowable Pressure PS	AMI: 35 bar MIA: 45 bar CIA: 60 bar
Max. Test Pressure PT	AMI: 39 bar MIA: 49.5 bar CIA: 66 bar
Temperatures TS Medium	-40...+100 °C
Installation / Location	In any position
Pressure Drop	negligible
Standards	EN 12178

Released Refrigerants Fluid group II	AMI/ MIA: R134a, R22, R404A, R407C, R507, R513A MIA only: R410A CIA only: R744	A1
Fluid group I	MIA only: R452B, R454A, R454B, R454C, R123yf CIA only: R32	A2L
Markings	See Selection Table	

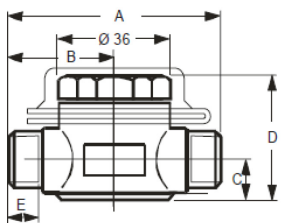
Dimension (mm)

MIA / CIA

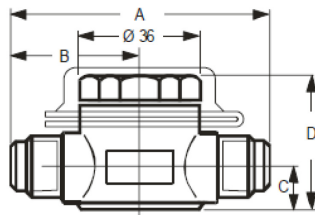


Type MIA	Type CIA	Tube Outside Ø	Height A (mm)	Length B (mm)	Weight (g)	Type MIA	Type CIA	Tube Outside Ø	Height A (mm)	Length B (mm)	Weight (g)
MIA 014	CIA 014	1/4"	25.7	98.0	60	MIA M06	CIA M06	6 mm	25.9	98.0	60
MIA 038	CIA 038	3/8"	28.5	109.0	70	MIA M10	CIA M10	10 mm	28.5	109.0	70
MIA 012	CIA 012	1/2"	31.8	113.0	75	MIA M12	CIA M12	12 mm	28.5	113.0	75
MIA 058	CIA 058	5/8"	31.8	108.5	85	MIA M16	CIA M16	16 mm	31.8	108.5	85
MIA 078		7/8"	37.8	122.5	150	MIA M28		28 mm	43.5	122.5	190
MIA 118		1-1/8"	43.5	122.5	190	MIA M10S		10 mm	28.7	119	75
						MIA M12S		12 mm	28.5	113	75

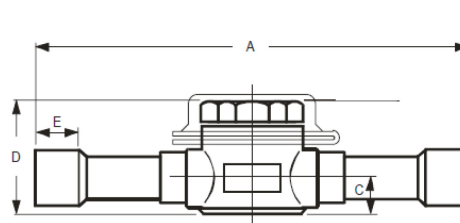
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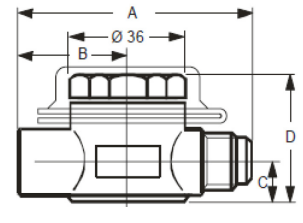
AMI-1MM



AMI-1TT

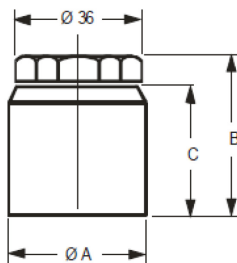


AMI-1FM

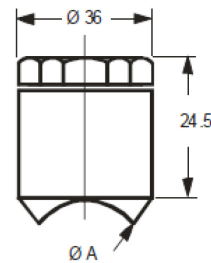


Type AMI-1...	Ø (mm)	Ø (Inch)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Type AMI-1...	Ø (mm)	Ø (Inch)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
AMI-1 SS 2	6	1/4"	57	29	9	30	8	AMI-1 TT 2	6	1/4"	124	62	9	30	8
AMI-1 SS 3	10	3/8"	57	29	9	30	8	AMI-1 TT 3	10	3/8"	124	62	9	30	8
AMI-1 SS 4	12	1/2"	67	33	12	37	10	AMI-1 TT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

AMI-2...



AMI-3...



Type AMI-2...	Ø (mm)	Ø (inch)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Type AMI-3...	Ø (mm)	Ø (inch)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
AMI-2 S 11	35	1-3/8"	35	40	34			AMI-3 S7	35	1-3/8"	22.4				
AMI-2 S 13	42	1-5/8"	42	43	37			AMI-3 S9	42	1-5/8"	28.8				
AMI-2 S 17	54	2-1/8"	54	50	43			AMI-3 S11	54	2-1/8"	35.2				

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