



em eco|mate® RM

Circular, Rugged Metal Connectors for Industrial Applications



Available in 8 Shell Sizes and 28 Insert Arrangements

Amphenol Sine Systems' **ecomate® RM (Rugged Metal) Series** of circular, metal connectors provide an IP67 rating (in mated condition) for industrial applications, all in a sealed connector system. With a circular bayonet coupling system and a maximum current rating of 45A/600V, the ecomate® RM (Rugged Metal) Series is perfect for Indoor/Outdoor applications in Factory Automation, Industrial, Heavy Equipment, Heavy Duty, Transportation, and Entertainment/Lighting markets. Design is based on MIL-DTL-26482 specifications. All ecomate® RM products are compatible with other industry standard mating connectors.

Contacts are available in Machined or PCB (loose piece/bagged), or Stamped & Formed (reels) options and can be shared with the ecomate® Aquarius™, Aquarius™ Fathom Lock, and RSSM series.

Also available in an **ecomate® RM High Amperage** option with up to 300A/630V featuring **RADSOK®** Contact Technology.

Key Features

- IP67 rated (in mated condition)
- Circular Bayonet Coupling System
- Machined, Stamped & Formed, and PCB Contacts
- MIL-DTL-26482-based Design
- EMI/RMI Shielding Capabilities
- Kits Available



Potential Applications: Factory Automation, Industrial, Heavy Equipment, Heavy Duty, Transportation, and Entertainment/Lighting markets.

ecomate® RM - Specifications
(See individual datasheets for exact specs)

IP Rating	IP67 (in mated condition)
Max. Current Amperage	Up to 45A
Max. Voltage Rating (AC/DC)	600V
Operating Temperature	-40°C to +125°C
Coupling System	Circular Bayonet
Housing Body	Body-Zinc Alloy; Coupling-Nickel Alum.
Contact Types	Machined, Stamped & Formed, PCB
Contact Termination	Crimp, Solder
Contact Material	Copper Alloy (Gold, Tin & Silver Plating are available)
Wire Range	30 - 8AWG (0.05 - 10.0 mm ²)
Sealing Material	Nitrile Buna Rubber/Silicone Rubber
Min. Mating Cycles	>500

Shielding	EMI/RMI Available
Flammability Rating	UL94-VO
Fluid Resistance	Gas, oil, mineral oil, acid bath, basic bath
Test Voltage Rating	1500V/2000V
Overvoltage Category	III
Strain Relief Clamp Range	1.5 - 14.0mm
Insulation Resistance	5000 megohms
Thermal Shock	No cracking, chipping or leaking after 20 test cycles from -55°C to 125°C
RoHS Compliant	RoHS ALL materials meet the requirements of the European Directive. (See website for documentation)
Approvals	UL ECBT2 & ECBT8

Connector Configurations



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Contact Legend (Size (mm²) Amperage)

Size 20 (0.5mm ²) 7.5A	Size 16 (1.5mm ²) 13A	Size 12 (2.5mm ²) 23A	Size 8 (3.6mm ²) 45A

Recommended Wire Insulation Overall Diameter (OD) for End Caps

Contact Size	Typical Wire Range	(N) Normal Wire Seal	(R) Reduced Wire Seal
20	30-20AWG (0.05-0.50mm ²)	1.6mm-2.6mm (0.063-0.102 in)	1.2mm-1.6mm (0.047-0.063 in)
16	24-14AWG (0.14-2.5mm ²)	2.0mm-3.2mm (0.079-0.126 in)	1.2mm-2.1mm (0.047-.083 in)
12	14-12AWG (2.5-3.5mm ²)	3.3mm-4.3mm (0.130-0.169 in)	-
8	12-10AWG (10.0-16.0mm ²)	2.8mm-5.8mm (0.110-0.228 in)	-
8*	16-8AWG (1.5-10.0mm ²)	2.8mm-4.1mm (0.110-0.161 in)	-

NOTE: * Applies to 14-3 insert arrangement only. See chart below.

ecomate® RM - Shell Sizes & Insert Arrangements

(Front view of pin insert/rear view of socket insert shown for reference only)

Shell Size 10					Shell Size 12			
3 Pos 3 x Size 16 (1.5mm ²) 13A/500V	4 Pos 4 x Size 12 (2.5mm ²) 23A/500V	4(2+2) Pos MIX 2 x Size 12 (2.5mm ²) 23A 2 x Size 20 (0.5mm ²) 7.5A 500V	6 Pos 6 x Size 20 (0.5mm ²) 7.5A/250V	6(3+3) Pos MIX 3 x Size 16 (1.5mm ²) 13A 3 x Size 20 (0.5mm ²) 7.5A 500V	3 Pos 3 x Size 16 (1.5mm ²) 13A/600V	4 Pos 4 x Size 16 (1.5mm ²) 13A/500V	4(2+2) Pos MIX 2 x Size 12 (2.5mm ²) 23A 2 x Size 20 (0.5mm ²) 7.5A 500V	8 Pos 8 x Size 16 (1.5mm ²) 13A/500V
-	N	N	N	-	N	R	N	R

Shell Size 12	Shell Size 14						Shell Size 16	
10 Pos 10 x Size 20 (0.5mm ²) 7.5A/250V	3 Pos 3 x Size 8* (3.6mm ²) 45A/600V	4 Pos 4 x Size 12 (2.5mm ²) 23A/500V	4 Pos MIX 2 x Size 12 (2.5mm ²) 23A 2 x Size 16 (1.5mm ²) 13A 500V	7 Pos 7 x Size 16 (1.5mm ²) 13A/500V	8 Pos 8 x Size 16 (1.5mm ²) 13A/500V	12 Pos 12 x Size 16 (1.5mm ²) 13A/500V	19 Pos 19 x Size 20 (0.5mm ²) 7.5A/250V	4 Pos 4 x Size 8 (3.6mm ²) 45A/600V
R	N	N	N	R	N	N R	N	N

Shell Size 16			Shell Size 18			Shell Size 20	Shell Size 22	
9 Pos MIX 4 x Size 12 (2.5mm ²) 23A 5 x Size 16 (1.5mm ²) 13A 500V	19 Pos 19 x Size 16 (1.5mm ²) 13A/500V	26 Pos 26 x Size 20 (0.5mm ²) 7.5A/250V	8 Pos 8 x Size 12 (2.5mm ²) 23A/500V	23 Pos 23 x Size 16 (1.5mm ²) 13A/500V	32 Pos 32 x Size 20 (0.5mm ²) 7.5A/250V	28 Pos* 28 x Size 16 (1.5mm ²) 13A/500V	35 Pos 35 x Size 16 (1.5mm ²) 13A/500V	38 Pos 38 x Size 16 (1.5mm ²) 13A/500V
N R	N	N	N	N R	N	N R	-	-

Shell Size 24
48 Pos 48 x Size 16 (1.5mm ²) 13A/500V
-

Backshell Cable Diameters

Shell Size 10	3.0 - 8.5mm
Shell Size 12	6.5 - 12.5mm
Shell Size 14	6.5 - 12.5mm
Shell Size 16	10.0 - 17.0mm
Shell Size 18	10.0 - 17.0mm
Shell Size 20	11.0 - 22.5mm
Shell Size 22	13.5 - 24.0mm
Shell Size 24	20.5 - 22.5mm



em eco|mate® RSSM

Circular, Rugged, Superior Seal, Metal Connectors for Industrial Applications



Available in 8 Shell Sizes and 28 Insert Arrangements

Amphenol Sine Systems' **ecomate® RSSM** (Rugged **Superior Seal** Metal) **Series** of circular metal connectors matches all the specifications of the **ecomate® RM** (Rugged Metal) series with the addition of **Superior Seals** (+125°C) which increase the IP ratings to IP67/69K (in mated condition). **ecomate® RSSM** Plugs are only to be mated with **ecomate® RSSM** Receptacles to ensure an IP69K rating.

Contacts are available in Machined or PCB (loose piece/bagged), or Stamped & Formed (reels) options and can be shared with the **ecomate® Aquarius™**, **Aquarius™ Fathom Lock**, and **RM** series.

Key Features

- IP67/69K rated (in mated condition)
- Circular Bayonet Coupling System
- Machined, Stamped & Formed, RADSOK® and PCB Contacts
- MIL-DTL-26482-based Design
- EMI/RMI Shielding Capabilities
- Kits Available



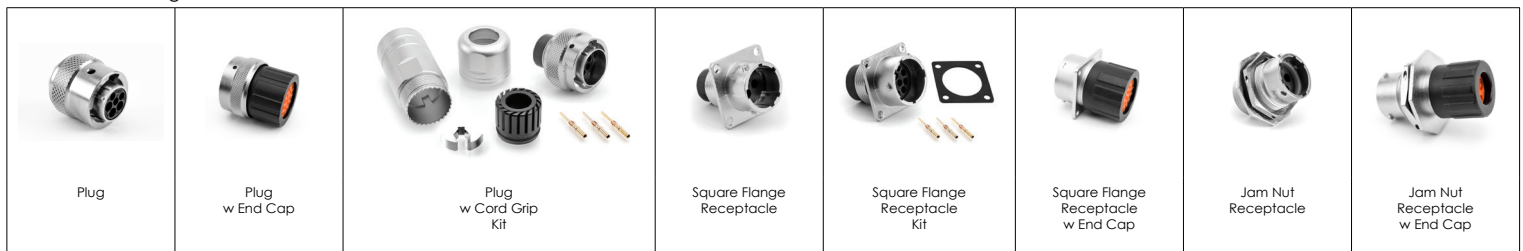
Potential Applications: Factory Automation, Industrial, Heavy Equipment, Heavy Duty, Transportation, Entertainment/Lighting markets, On-Machine, Robotics, Rail Transit, EV Bus/Truck, I/O Module, Servo Motor, Servo Drive, PLC Programmable Logic Controller, HMI/CNC.

ecomate® RSSM - Specifications
(See individual datasheets for exact specs)

IP Rating	IP67/69K (in mated condition)
Max. Current Amperage	Up to 45A
Max. Voltage Rating (AC/DC)	600V
Operating Temperature	-40°C to +125°C
Coupling System	Circular Bayonet
Housing Body	Body-Zinc Alloy; Coupling-Nickel Alum.
Contact Types	Machined, Stamped & Formed, RADSOK®, PCB
Contact Termination	Crimp, Solder
Contact Material	Copper Alloy (Gold, Tin & Silver Plating are available)
Wire Range	30 - 8AWG (0.05 - 10.0 mm ²)
Sealing Material	Silicone Rubber
Min. Mating Cycles	>500

Shielding	EMI/RMI Available
Flammability Rating	UL94-VO
Fluid Resistance	Gas, oil, mineral oil, acid bath, basic bath
Test Voltage Rating	1500V/2000V
Overvoltage Category	III
Strain Relief Clamp Range	1.5 - 14.0mm
Insulation Resistance	5000 megohms
Thermal Shock	No cracking, chipping or leaking after 20 test cycles from -55°C to 125°C
RoHS Compliant	RoHS ALL materials meet the requirements of the European Directive. (See website for documentation)
Approvals	UL ECBT2 & ECBT8

Connector Configurations



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Contact Legend (Size (mm²) Amperage)

Size 20 (0.5mm ²) 7.5A	Size 16 (1.5mm ²) 13A	Size 12 (2.5mm ²) 23A	Size 8 (3.6mm ²) 45A

Recommended Wire Insulation Overall Diameter (OD) for End Caps

Contact Size	Typical Wire Range	(N) Normal Wire Seal	(R) Reduced Wire Seal
20	30-20AWG (0.05-0.50mm ²)	1.6mm-2.6mm (0.063-0.102 in)	1.2mm-1.6mm (0.047-0.063 in)
16	24-14AWG (0.14-2.5mm ²)	2.0mm-3.2mm (0.079-0.126 in)	1.2mm-2.1mm (0.047-.083 in)
12	14-12AWG (2.5-3.5mm ²)	3.3mm-4.3mm (0.130-0.169 in)	-
8	12-10AWG (10.0-16.0mm ²)	2.8mm-5.8mm (0.110-0.228 in)	-
8*	16-8AWG (1.5-10.0mm ²)	2.8mm-4.1mm (0.110-0.161 in)	-

NOTE: * Applies to 14-3 insert arrangement only. See chart below.

ecomate® RSSM - Shell Sizes & Insert Arrangements

(Front view of pin insert/rear view of socket insert shown for reference only)

Shell Size 10					Shell Size 12			
3 Pos 3 x Size 16 (1.5mm ²) 13A/500V	4 Pos 4 x Size 12 (2.5mm ²) 23A/500V	4(2+2) Pos MIX 2 x Size 12 (2.5mm ²) 23A 2 x Size 20 (0.5mm ²) 7.5A 500V	6 Pos 6 x Size 20 (0.5mm ²) 7.5A/250V	6(3+3) Pos MIX 3 x Size 16 (1.5mm ²) 13A 3 x Size 20 (0.5mm ²) 7.5A 500V	3 Pos 3 x Size 16 (1.5mm ²) 13A/600V	4 Pos 4 x Size 16 (1.5mm ²) 13A/500V	4(2+2) Pos MIX 2 x Size 12 (2.5mm ²) 23A 2 x Size 20 (0.5mm ²) 7.5A 500V	8 Pos 8 x Size 16 (1.5mm ²) 13A/500V
-	N	N	N	-	N	R	N	R

Shell Size 12	Shell Size 14						Shell Size 16	
10 Pos 10 x Size 20 (0.5mm ²) 7.5A/250V	3 Pos 3 x Size 8* (3.6mm ²) 45A/600V	4 Pos 4 x Size 12 (2.5mm ²) 23A/500V	4 Pos MIX 2 x Size 12 (2.5mm ²) 23A 2 x Size 16 (1.5mm ²) 13A 500V	7 Pos 7 x Size 16 (1.5mm ²) 13A/500V	8 Pos 8 x Size 16 (1.5mm ²) 13A/500V	12 Pos 12 x Size 16 (1.5mm ²) 13A/500V	19 Pos 19 x Size 20 (0.5mm ²) 7.5A/250V	4 Pos 4 x Size 8 (3.6mm ²) 45A/600V
R	N	N	N	R	N	N	R	N

Shell Size 16			Shell Size 18			Shell Size 20	Shell Size 22	
9 Pos MIX 4 x Size 12 (2.5mm ²) 23A 5 x Size 16 (1.5mm ²) 13A 500V	19 Pos 19 x Size 16 (1.5mm ²) 13A/500V	26 Pos 26 x Size 20 (0.5mm ²) 7.5A/250V	8 Pos 8 x Size 12 (2.5mm ²) 23A/500V	23 Pos 23 x Size 16 (1.5mm ²) 13A/500V	32 Pos 32 x Size 20 (0.5mm ²) 7.5A/250V	28 Pos* 28 x Size 16 (1.5mm ²) 13A/500V	35 Pos 35 x Size 16 (1.5mm ²) 13A/500V	38 Pos 38 x Size 16 (1.5mm ²) 13A/500V
N	R	N	N	N	R	N	R	-

Shell Size 24
48 Pos 48 x Size 16 (1.5mm ²) 13A/500V
-

Backshell Cable Diameters

Shell Size 10	3.0 - 8.5mm
Shell Size 12	6.5 - 12.5mm
Shell Size 14	6.5 - 12.5mm
Shell Size 16	10.0 - 17.0mm
Shell Size 18	10.0 - 17.0mm
Shell Size 20	11.0 - 22.5mm
Shell Size 22	13.5 - 24.0mm
Shell Size 24	20.5 - 22.5mm



em eco|mate® RM High Amp

Circular, Rugged Metal, High Amperage Connectors for Industrial Applications



Available in 4 Shell Sizes and 5 Insert Arrangements

Amphenol Sine Systems' **ecomate® RM High Amperage Series** of connectors matches all the specifications of the ecomate® RM (Rugged Metal) Series with the addition of high amperage connector options in 1 and 3 pole, high power arrangements featuring **RADSOK® Contact Technology**, up to 300A and 630V.

Key Features

- IP67 rated (in mated condition)
- Circular Bayonet Coupling System
- 3.6mm - 10mm Contact Sizes
- MIL-DTL-26482-based Design
- EMI/RMI Shielding Capabilities



Potential Applications: Factory Automation, Industrial, Heavy Equipment, Heavy Duty, Transportation, and Entertainment/Lighting markets.

ecomate® RM High Amp - Specifications
(See individual datasheets for exact specs)

IP Rating	IP67 (in mated condition)
Max. Current Amperage	Up to 300A
Max. Voltage Rating (AC/DC)	630V
Operating Temperature	-40°C to +125°C
Coupling System	Circular Bayonet
Housing Body	Body-Zinc Alloy; Coupling-Nickel Alum.
Contact Types	RADSOK® 3.6mm-10mm
Contact Termination	Crimp, Flat Tail, Screw Tail
Contact Material	RADSOK®
Wire Range	8 - 4/0AWG (10.0 - 95.0 mm²)
Sealing Material	Nitrile Buna Rubber
Min. Mating Cycles	>500

Shielding	EMI/RMI Available
Flammability Rating	UL94-V0
Fluid Resistance	Gas, oil, mineral oil, acid bath, basic bath
Test Voltage Rating	5000V
Overvoltage Category	III
Strain Relief Clamp Range	1.5 - 14.0mm
Insulation Resistance	5000 megohms
Thermal Shock	No cracking, chipping or leaking after 20 test cycles from -55°C to 125°C
RoHS Compliant	RoHS ALL materials meet the requirements of the European Directive. (See website for documentation)
Approvals	UL ECBT2 & ECBT8

Connector Configurations


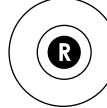


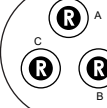
12-1, 14-1, 16-1 and 20-1				
Straight Plug Female w RADSOK® Socket	90 Right Angle Plug Female w RADSOK® Socket	Square Flange Receptacle Male w RADSOK® Crimp Pin	Square Flange Receptacle Male w RADSOK® Flat Tail Pin	Square Flange Receptacle Male w RADSOK® Screw Tail Pin

20-3			
Straight Plug Male w RADSOK® Pin	Straight Plug Female w RADSOK® Socket	Square Flange Receptacle Male w RADSOK® Pin	Square Flange Receptacle Female w RADSOK® Socket







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ecomate® RM High Amp - Shell Sizes & Insert Arrangements
(Front view of pin insert/rear view of socket insert shown for reference only)

Shell Size 12	Shell Size 14	Shell Size 16	Shell Size 20	
1 Pos 1 x 3.6mm ² 86A/630V	1 Pos 1 x 6.0mm ² 120A/630V	1 Pos 1 x 8.0mm ² 120A-180A/630V	1 Pos 1 x 10.0mm ² 120A-300A/630V	3 Pos 3 x 3.6mm ² 86A/630V
				

Contact Legend (Size mm² / Amperage)

			
3.6mm ² 86A	6.0mm ² 120A	8.0mm ² 120-180A	10.0mm ² 120-300A

Backshell Cable Diameters

Shell Size 12	9.0 - 12.5mm
Shell Size 14	9.0 - 14.0mm
Shell Size 16	9.0 - 17.0mm
Shell Size 20	13.5 - 22.5mm