

108-19074

NUMBER

AMP SECURITY CLASSIFICATION

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**Product Specification
ECONOSEAL EHM Connectors**

1. SCOPE:

This specification covers the performance, test and quality requirements for the:

- 4 position Ø 4 mm socket contact connector with bayonet coupling ring (P.N. 100201)
- 2 and 3 position Ø 4 mm socket contact connector with M24 or M27 coupling ring (P.N. 100283 / 100284 / 100285 / 100286).

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. I.E.C. Specifications:

- I.E.C. 529 : IP Code
- I.E.C. 68 : Basic environmental testing procedure
- I.E.C. 512 : Basic testing procedures and measuring methods for electromechanical components for electronic equipment.

3. PRODUCT DESCRIPTION.

3.1. Design and Construction.

Connector shall be of the design, construction and physical dimensions, specified on the applicable AMP product drawing. When applicable, the connector mating part for performance evaluations shall be according figure 1, 2 and 3.

The connector system consists of the following connector types:

- 3.1.1.** A 4 position connector housing assembly with a bayonet coupling ring (P.N. 100201) with a 90° isolation tube adapter (P.N. 100130) or:

- A 2 and 3 position connector housing assembly (P.N. 100283/284/285/286) with:
 - a M24 or M27 coupling ring
 - a 90° isolation tube adapter (P.N. 100291)
- or a 180° isolation tube adapter (P.N. 100292)

DOC. CENTRE

27 JUNI 1995

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					DR.	DATE	AMP	AMP-HOLLAND B.V. s-Hertogenbosch, The Netherlands.		
					R. Op ten Berg			NAME	ECONOSEAL EHM CONNECTOR, for 4 mm socket contacts (2, 3 and position)	
					CHK.	DATE				
							APP.	NO.	SHEET	REV.
							H. van Wezel	108-19074	1 OF 9	0

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All connectors are suitable for a \varnothing 4 mm socket contacts and wire seals with the following wire sizes:

Contacts:

P.N. 962956	> 2,5-4 mm ²	FLR
962954	> 1,0-2,5 mm ²	FLR
962952	0,5-1,0 mm ²	FLR

Wire Seals:

P.N.	Isolation dia. mm.	Color
963245-1	3,4-3,7	yellow
963244-1	2,2-3,0	white
963243-1	1,4-2,1	blue
100132-1	----	black (cavity plug)

3.2. Materials:

Contact material	: CuFe2 or CuNiSi
Spring material	: Stainles steel
Plating material	: Tin or Silver
Wire seal material	: silicon rubber
Housing material	: PBT black UL 94HB

3.3. Performance Rating:

3.3.1. Voltage rating:

The voltage rating shall be: 100 V.DC or AC peak

**3.3.2. Current Temperature Derating: Δt is 30° max.
or (see also page 7)**

Conductor Size		2,5mm ²	4,0 mm ²	
Ambient temp. °C.	20°	20	25	2 pos
	90°	14	18	
	20°	20	25	3 pos
	90°	14	18	

3.3.3. Temperature Rating:

Maximum temperature housing: NOT APPLICABLE

Contacts: -40°C to 105°C. tin plated
-40°C to 130°C. silver plated

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3.4. Performance and test description.

	Test Description	Performance requirement or severity	Procedure
3.4.0.	Visual Inspection		
3.4.1.	Contact retention in housing	90 N minimum	Wired contacts (2,5 mm ²) inserted into housing. Apply pull out force axially to wire untill pull out. Ref: IEC 512-8 test 5a
3.4.2.	Mechanical Operation	Number of cycles: 5x	In accordance with IEC 512-5 test 9a. Frequency 5 cycles/min. Minimum time between 2 operations: 1 sec.
3.4.3.	Damp heat cycle	25/55°C. 12 hrs/12 hrs mated. No water inside connector.	Ref.: IEC 512-6 test 11m
3.4.4.	Cold	-40°C. 2 hours mated	Ref.: IEC 512-6 test 11j
3.4.5.	Dry heat	130°C. 16 hrs mated	Ref.: IEC 512-6 test 11i
3.4.6.	Rapid change of temperature	-40°C - 105/130°C. 30 min/30 min., 10 cycles mated	Ref.: IEC 512-6 test 11d
3.4.7.	Current temperature derating	Current 0 - 40 A DC 1 hour Δ T max. 30° max. inside connector	IEC 512-3 test 5b see page 7
3.4.8.	Water protection	Pressure: 0,1 bar Duration: 1 hour No water inside connector	Ref.: IP 67
3.4.9.	Mechanical impact	No visual damage. No functional damage.	Wired assembly with 1m wire length will fall freely by pendulum action. See figure 4 IEC 512-5 test 7b
3.4.10	Axial coupling strength (without adapter)	Minimum: 400N/10 sec. No disconnection. No physical damage	See figure 5.
3.4.11	Radial coupling strength (without adapter)	Minimum: 200N/10 sec applied force radial on connector axis. No disconnection. No physical damage	See figure 6
3.4.12	Tube retention force in adapter	Minimum: 100N/10 sec. applied force on tube in radial and axial direction. No loosening or damage	See figure 7

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3.4. Performance and test description (continued).

	Test Description	Performance requirement or severity	Procedure
3.4.13.	Locking torque for bajonet coupling	Maximum 3,5 Nm	Torque for locking and unlocking of bajonet coupling should be measured with an appropriate measuring tool (p.e. torque wrench) (fig. 6.)
3.4.14	Unlocking torque for bajonet coupling	Max. 3,5Nm. Min. 1,0 Nm.	
3.4.15.	Withstanding torque for bajonet coupling	Min. 5 N for 10 sec No damage	Apply torque in locking direction with torque wrench (see fig. 6)

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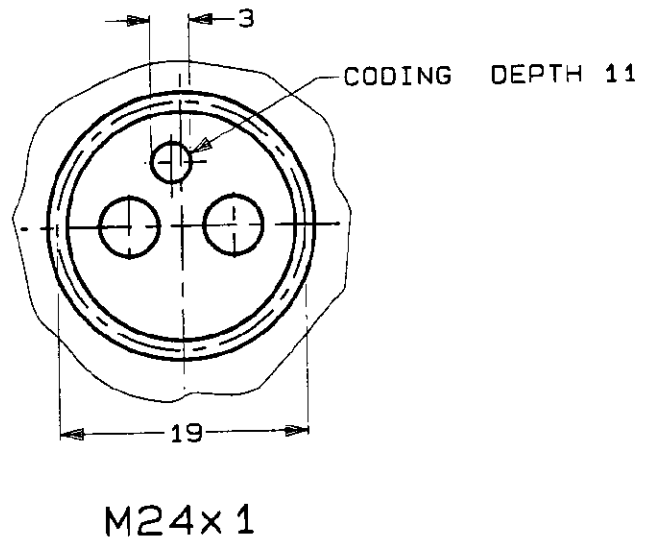
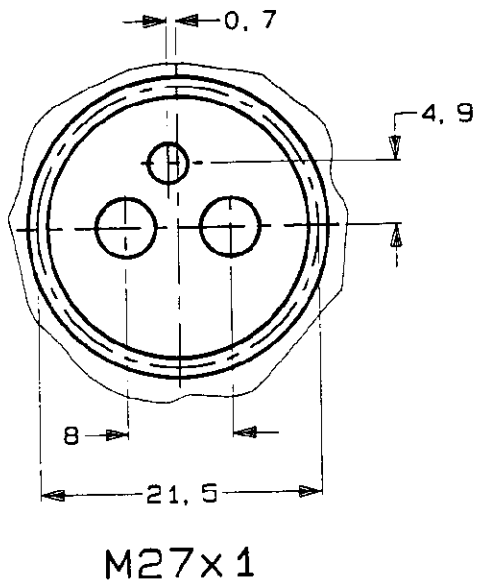
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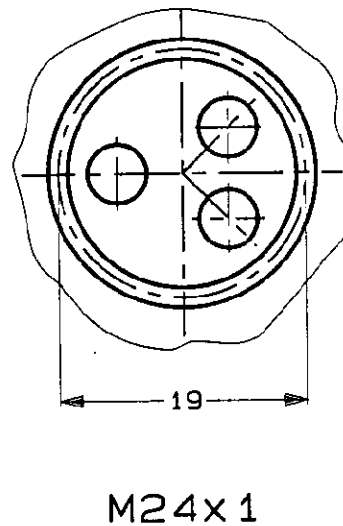
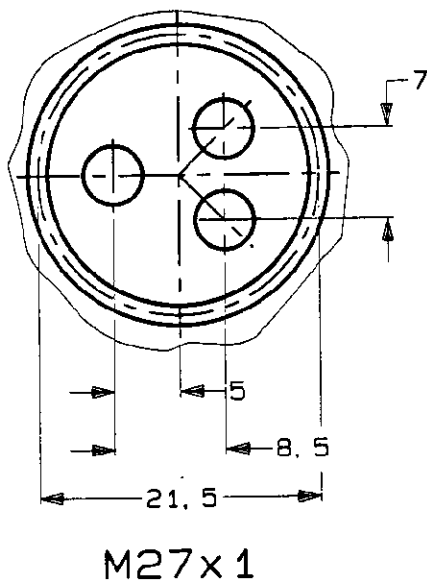
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2 Pos. PIN HOUSING

FIGURE 1



3 Pos. PIN HOUSING

FIGURE 2

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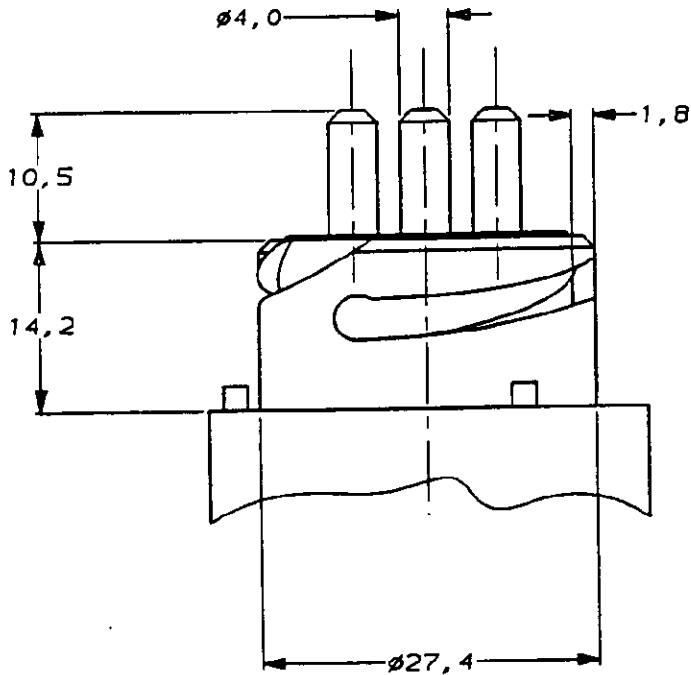
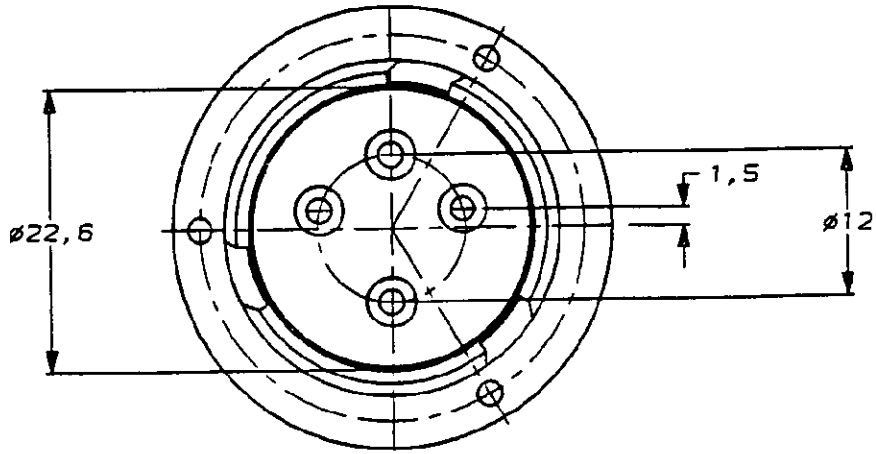
Design Objectives

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4 Pos. BAYONET HOUSING

FIGURE 3

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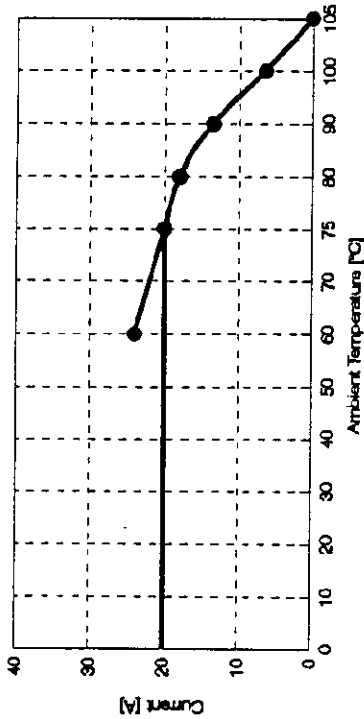
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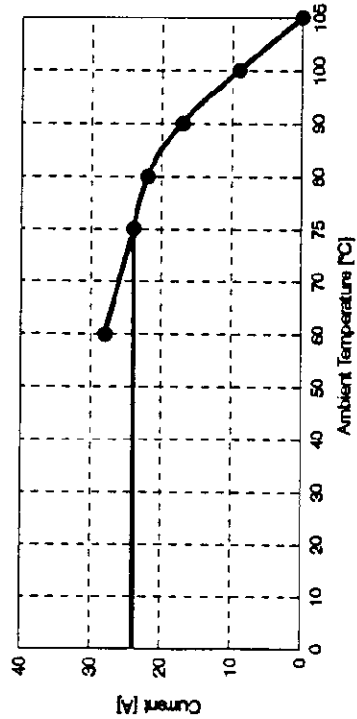
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Derating Curve
 3 Position on 2,5 mm² wire.



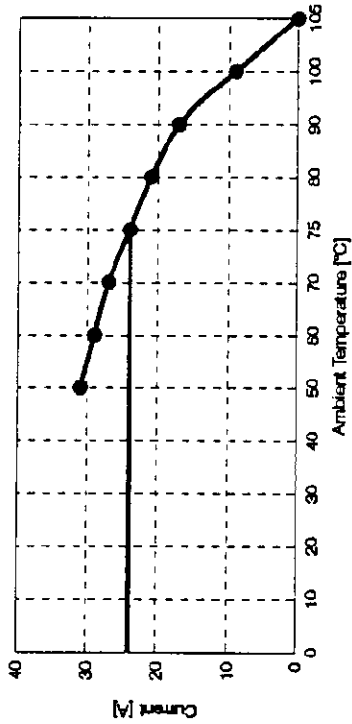
ECONOSEAL (EHM)

Derating Curve
 3 Position on 4 mm² wire.



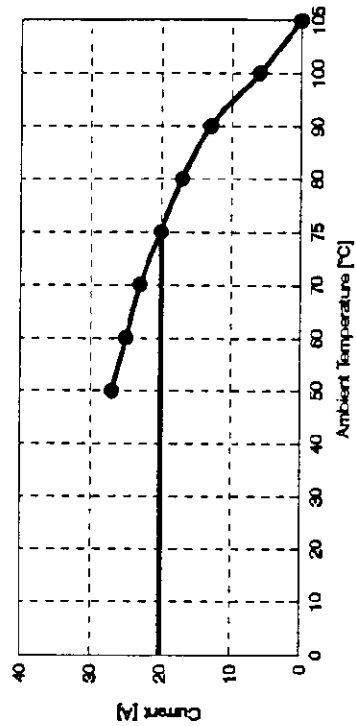
ECONOSEAL (EHM)

Derating Curve
 2 Position on 4 mm² wire.



ECONOSEAL (EHM)

Derating Curve
 2 Position on 2,5 mm² wire.



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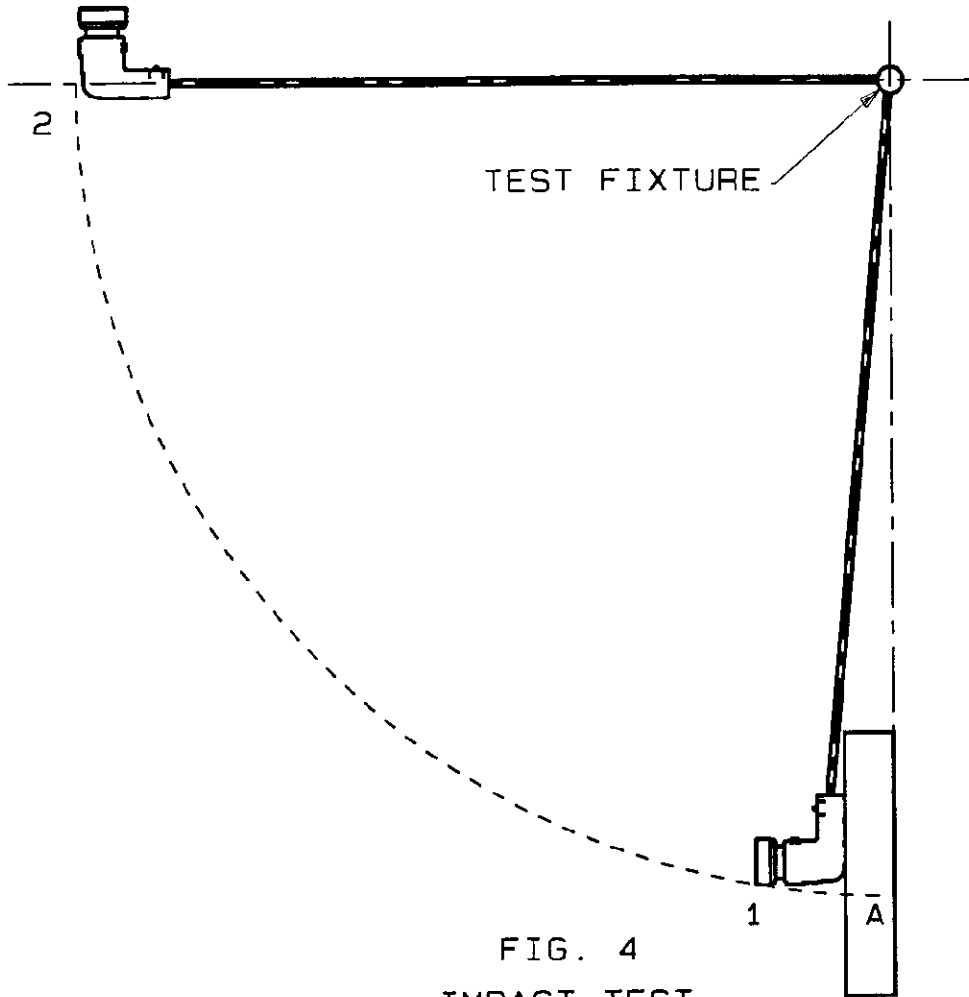


FIG. 4
IMPACT TEST

FIGURE 4
IMPACT TEST

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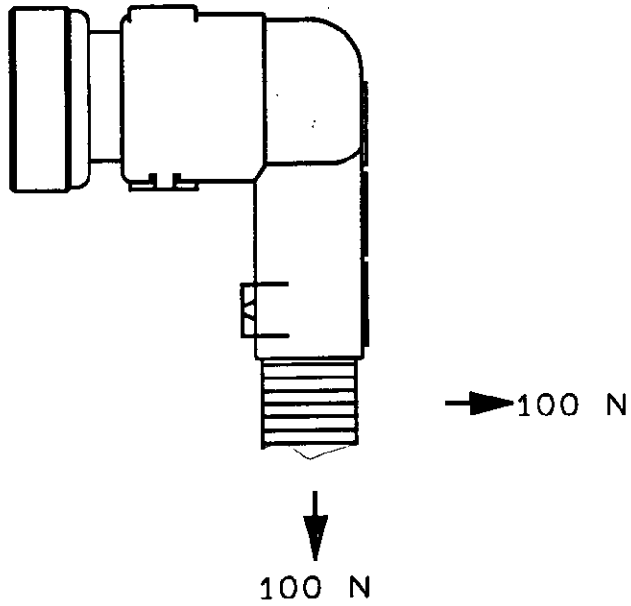


FIGURE 5

FIGURE 6

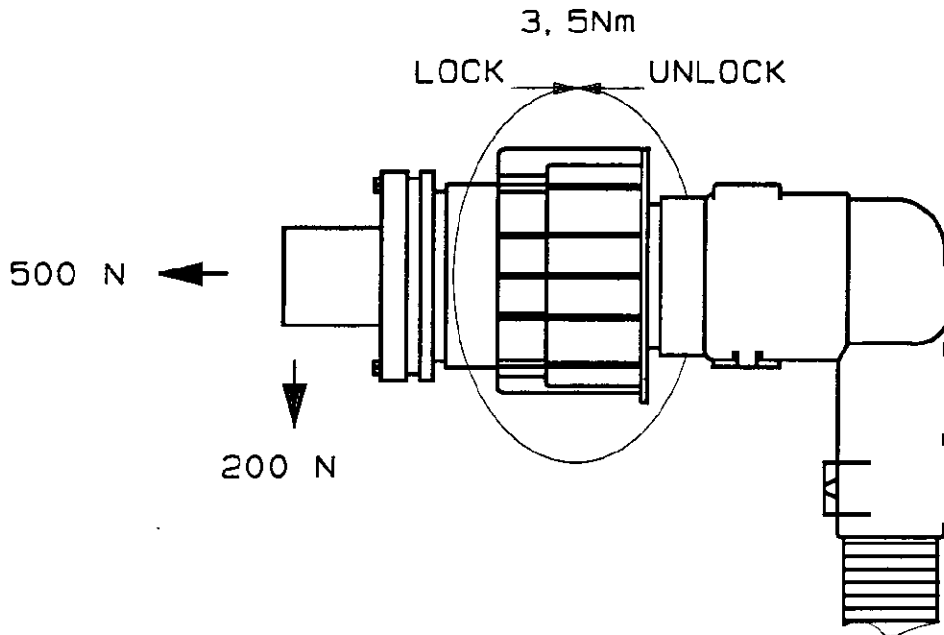


FIGURE 7

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