

# EPIC® Series R

## CIRCULAR CONNECTORS

This range of connectors has been designed for application in mechanical engineering as well as in measurement and control engineering and in medical electronics.

No of Contacts	Termination Type	Numeration	Working Current	Page of Brochure
8 + ⊕	Solder cup	Clockwise/ Anti-clockwise	7.5 amps	7/8
	Solder pin			available on request
12	Solder cup	Clockwise/ Anti-clockwise	7.5 amps	7/8
	Solder pin			9
	Crimp		5.0 amps	available on request
16	Solder cup	Clockwise/ Anti-clockwise	7.5 amps	7
	Solder pin			9
	Crimp		5.0 amps	available on request
21	Solder cup	Clockwise	7.5 amps	13
	Solder pin			available on request
26	Solder cup	Clockwise	7.5 amps	13
	Solder pin			available on request

<p><b>Temperature:</b> -40°C to +125°C</p> <p><b>Cable entry:</b> Sealing and strain relief by means of PG cable gland</p> <p><b>Interlocking:</b> Screw lock by means of coupling nut</p>	<p><b>Protection:</b> IP65 – IP67 according to DIN 40050 depending on the cable gland (when mated)</p> <p><b>Materials:</b> Insulation body: Thermoplastic resin, fibreglass reinforced, flame retardant to UL94 V-O</p>	<p><b>Contacts:</b> Copper alloy, nickel plated gold or silver finish</p> <p><b>Sealing:</b> Neoprene, light and oil resistant</p> <p><b>Housing/Plating:</b> Copper Alloy/nickel plated</p>
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### NEW E.M.C. INNOVATIONS:

The European Commission Directive on E.M.C. comes completely into force on 1st January 1996. Contact Connectors' Series LS and Series R circular connectors will both have a version available with 360 degree protection early next year. In the meantime our extensive range of Cable Glands includes various types that have been specially designed for use with braided cable. Please call our technical helpline on 0181-453 0199 for further information.

# The R-Series Part Numbers Explained

## Example part number & breakdown

20 . 10 10 AA + 40 . 15 0 0 16

**BODY**

**SERIES**

10 - R2.5  
20 - R3.0

**BODY STYLE / SHAPE**

10 - Base (drilled holes front mount)  
20 - Base (tapped holes rear mount)  
30 - Base (drilled holes rear mount)  
40 - Hood (type D)  
50 - Coupler hood (type F)  
60 - Base (locknut on rear - type G)

**CABLE ENTRY IF ANY**

AA - Base  
AB - PG7 (with gland)  
AC - PG9 (with gland)  
AD - PG11 (with gland)  
AE - PG13.5 (with gland)  
CA - PG7 (without gland)  
CB - PG9 (without gland)  
CC - PG11 (without gland)  
CD - PG13.5 (without gland)

**INSERT**

**TERMINATION / TYPE**

10 - Solder Cup, Male  
11 - Solder Pin, Male  
14 - Crimp, Male  
15 - Solder Cup, Female  
16 - Solder Pin, Female  
19 - Crimp Female

**PLATING**

0 - Silver  
1 - 0.2um Gold  
2 - 0.8um Gold

**PIN LENGTH**

0 - Standard  
4 - 1.00mm  
1 - 1.2mm

**CONFIGURATION**

A1 - 8+1 (Male clockwise)  
A0 - 8+1 (Female anticlockwise)  
B1 - 8+1 (Male anticlockwise)  
B0 - 8+1 (Female clockwise)

**09 / 1D / 1C - Refer to cats**

12 - 12 (Male clockwise)  
12 - 12 (Female anticlockwise)  
0B - 12 (Male anticlockwise)  
0A - 12 (Female clockwise)

16 - 16 (male clockwise)  
16 - 16 (Female anticlockwise)  
1B - 16 (Male anticlockwise)  
1A - 16 (Female clockwise)

**17 / 1E / 1F - Refer to cats**

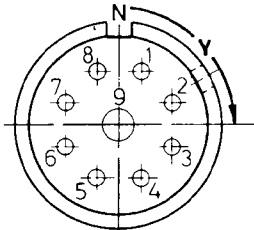
# EPIC® Series R

## SIZE 2.5

### CONNECTORS WITH SOLDER CUP TERMINATION CONTACT INSERTS (CLOCKWISE NUMERATION)

No. of contacts: 8/1  
Contact size: pin Ø 1 mm  
pin Ø 2 mm  
Termination: Solder Cups

View of mating side  
of male insert



Working current 7,5 A  
Rated voltage (VDE 0110)  
Insulation Group A 380 V ac  
Insulation Group B 60 V ac  
Insulation Group C — V ac  
Test voltage  
(according to VDE 0110)  
Contact/Contact 1.5 kV ac  
Contact/Ground 2.5 kV ac  
Insulating resistance  
≥ M Ohm 10°

#### Plug Connector

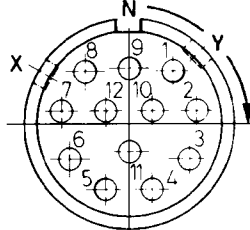
Contact Termination: Solder Cups  
40.1000 A1  
Contact Plating:  
3–4 µm hard silver  
40.1001 A1  
Contact Plating:  
0.2 µm hard gold  
40.1002 A1  
Contact Plating:  
0.8 µm hard gold

#### Receptacle

Contact Termination: Solder Cups  
40.1500 A0  
Contact Plating:  
3–4 µm hard silver  
40.1501 A0  
Contact Plating  
0.2 µm hard gold  
40.1502 A0  
Contact Plating:  
0.8 µm hard gold

No. of contacts: 12  
Contact size: pin Ø 1 mm  
Termination: Solder Cups

View of mating side  
of male insert



Working current 7,5 A  
Rated voltage (VDE 0110)  
Insulation Group A 380 V ac  
Insulation Group B 60 V ac  
Insulation Group C — V ac  
Test voltage  
(according to VDE 0110)  
Contact/Contact 1.5 kV ac  
Contact/Ground 1.5 kV ac  
Insulating resistance  
≥ M Ohm 10°

#### Plug Connector

Contact Termination: Solder Cups  
40.1000 12  
Contact Plating:  
3–4 µm hard silver  
40.1001 12  
Contact Plating:  
0.2 µm hard gold  
40.1002 12  
Contact Plating:  
0.8 µm hard gold

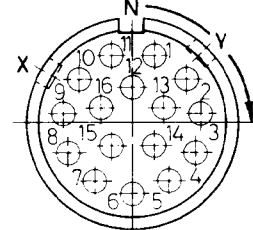
#### Receptacle

Contact Termination: Solder Cups  
40.1500 12  
Contact Plating:  
3–4 µm hard silver  
40.1501 12  
Contact Plating  
0.2 µm hard gold  
40.1502 12  
Contact Plating:  
0.8 µm hard gold

No. of contacts: 16  
Contact size: pin Ø 1 mm

Termination: Solder Cups

View of mating side  
of male insert



Working current 7,5 A  
Rated voltage (VDE 0110)  
Insulation Group A 250 V ac  
Insulation Group B 60 V ac  
Insulation Group C — V ac  
Test voltage  
(according to VDE 0110)  
Contact/Contact 1.15 kV ac  
Contact/Ground 1.15 kV ac  
Insulating resistance  
≥ M Ohm 10°

#### Plug Connector

Contact Termination: Solder Cups  
40.1000 16  
Contact Plating:  
3–4 µm hard silver  
40.1001 16  
Contact Plating:  
0.2 µm hard gold  
40.1002 16  
Contact Plating:  
0.8 µm hard gold

#### Receptacle

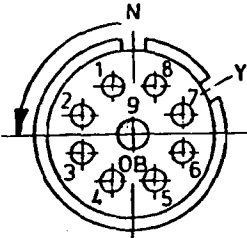
Contact Termination: Solder Cups  
40.1500 16  
Contact Plating:  
3–4 µm hard silver  
40.1501 16  
Contact Plating  
0.2 µm hard gold  
40.1502 16  
Contact Plating:  
0.8 µm hard gold

# EPIC® Series R

## SIZE 2.5 CONNECTORS WITH SOLDER CUP TERMINATION CONTACT INSERTS (ANTI CLOCKWISE NUMERATION)

**No. of contacts: 8/1**  
 Contact size: pin Ø 1 mm  
 pin Ø 2 mm  
**Termination: Solder Cups**

View of mating side  
 of male insert



Working current 7,5 A  
 Rated voltage (VDE 0110)  
 Insulation Group A 380 V ac  
 Insulation Group B 60 V ac  
 Insulation Group C — V ac  
 Test voltage  
 (according to VDE 0110)  
 Contact/Contact 1.5 kV ac  
 Contact/Ground 2.5 kV ac  
 Insulating resistance  
 ≥ M Ohm 10<sup>9</sup>

### Plug Connector

Contact Termination: Solder Cups  
 40.1000 B1  
 Contact Plating:  
 3–4 µm hard silver  
 40.1001 B1  
 Contact Plating:  
 0.2 µm hard gold  
 40.1002 B1  
 Contact Plating:  
 0.8 µm hard gold

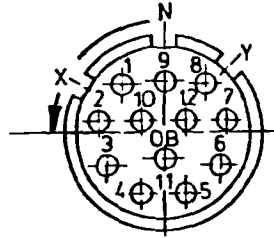
### Receptacle

Contact Termination: Solder Cups  
 40.1500 B0  
 Contact Plating:  
 3–4 µm hard silver  
 40.1501 B0  
 Contact Plating  
 0.2 µm hard gold  
 40.1502 B0  
 Contact Plating:  
 0.8 µm hard gold

**No. of contacts: 12**  
 Contact size: pin Ø 1 mm

**Termination: Solder Cups**

View of mating side  
 of male insert



Working current 7,5 A  
 Rated voltage (VDE 0110)  
 Insulation Group A 380 V ac  
 Insulation Group B 60 V ac  
 Insulation Group C — V ac  
 Test voltage  
 (according to VDE 0110)  
 Contact/Contact 1.5 kV ac  
 Contact/Ground 1.5 kV ac  
 Insulating resistance  
 ≥ M Ohm 10<sup>9</sup>

### Plug Connector

Contact Termination: Solder Cups  
 40.1000 0B  
 Contact Plating:  
 3–4 µm hard silver  
 40.1001 0B  
 Contact Plating:  
 0.2 µm hard gold  
 40.1002 0B  
 Contact Plating:  
 0.8 µm hard gold

### Receptacle

Contact Termination: Solder Cups  
 40.1500 0A  
 Contact Plating:  
 3–4 µm hard silver  
 40.1501 0A  
 Contact Plating  
 0.2 µm hard gold  
 40.1502 0A  
 Contact Plating:  
 0.8 µm hard gold

# EPIC® Series R

SIZE 2.5

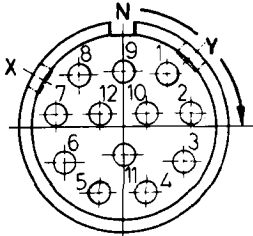
CONNECTORS WITH SOLDER PIN TERMINATION  
CONTACT INSERTS (CLOCKWISE NUMERATION)

**No. of contacts: 12**

Contact size: pin  $\varnothing$  1 mm

Termination: Solder pins  $\varnothing$  0.6 x 3.5

View of mating side  
of male insert



Working current 7,5 A

Rated voltage (VDE 0110)

Insulation Group A 380 V ac

Insulation Group B 60 V ac

Insulation Group C — V ac

Test voltage

(according to VDE 0110)

Contact/Contact 1.5 kV ac

Contact/Ground 1.5 kV ac

Insulating resistance  $\geq$  M Ohm 10<sup>8</sup>

**Plug Connector**

Contact Termination: Solder pins

40.1100 12

Contact Plating:  
3–4  $\mu$ m hard silver

40.1101 12

Contact Plating:  
0.2  $\mu$ m hard gold

40.1102 12

Contact Plating:  
0.8  $\mu$ m hard gold

**Receptacle**

Contact Termination: Solder pins

40.1600 12

Contact Plating:  
3–4  $\mu$ m hard silver

40.1601 12

Contact Plating:  
0.2  $\mu$ m hard gold

40.1602 12

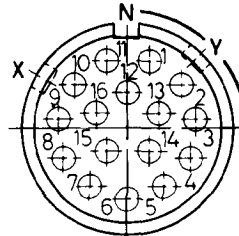
Contact Plating:  
0.8  $\mu$ m hard gold

**No. of contacts: 16**

Contact size: pin  $\varnothing$  1 mm

Termination: Solder pins  $\varnothing$  0.6 x 3.5

View of mating side  
of male insert



Working current 7,5 A

Rated voltage (VDE 0110)

Insulation Group A 250 V ac

Insulation Group B 60 V ac

Insulation Group C — V ac

Test voltage

(according to VDE 0110)

Contact/Contact 1.15 kV ac

Contact/Ground 1.15 kV ac

Insulating resistance  $\geq$  M Ohm 10<sup>8</sup>

**Plug Connector**

Contact Termination: Solder pins

40.1100 16

Contact Plating:  
3–4  $\mu$ m hard silver

40.1101 16

Contact Plating:  
0.2  $\mu$ m hard gold

40.1102 16

Contact Plating:  
0.8  $\mu$ m hard gold

**Receptacle**

Contact Termination: Solder pins

40.1600 16

Contact Plating:  
3–4  $\mu$ m hard silver

40.1601 16

Contact Plating:  
0.2  $\mu$ m hard gold

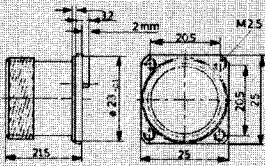
40.1602 16

Contact Plating:  
0.8  $\mu$ m hard gold

# EPIC® Series R

SIZE 2.5

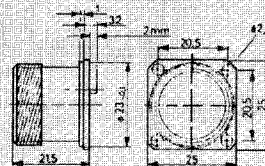
CONNECTOR – FOR FRONT AND BACK PANEL ASSEMBLY



### Type B 1

for panel mounting application  
back wall assembly, 4×M2.5 thread  
(wall thickness 4 mm max.)

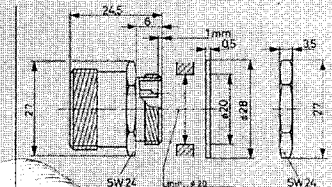
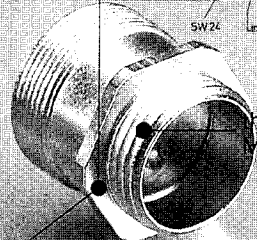
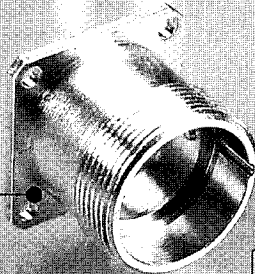
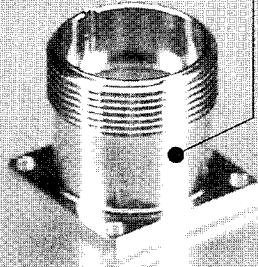
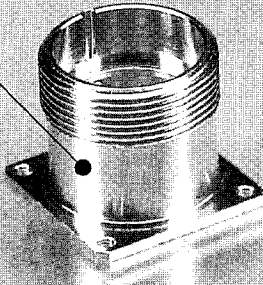
- 20.1020 AA  
insert in coding position N
- 20.1021 AA  
in coding position Y
- 20.1022 AA  
in coding position X



### Type B 2

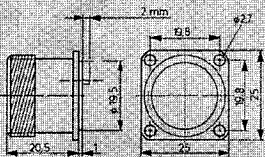
for panel mounting application  
back wall assembly, 4×through-hole  
(wall thickness 4 mm max.)

- 20.1030 AA  
insert in coding position N
- 20.1031 AA  
in coding position Y
- 20.1032 AA  
in coding position X



thread  
M 20 × 1.5

for sealing ring and flat  
gasket see "Accessories"



### Type A

for panel mounting application  
front assembly, 4 × through-hole  
(wall thickness 2 mm max.)

- 20.1010 AA  
insert in coding position N
- 20.1011 AA  
in coding position Y
- 20.1012 AA  
in coding position X

### Type G 1

for panel mounting application  
front single-hole assembly,  
(wall thickness 2 mm max.)

- in application with  
the sealing ring
- 20.1060 AA  
insert in coding position N
- 20.1061 AA  
in coding position Y
- 20.1062 AA  
in coding position X

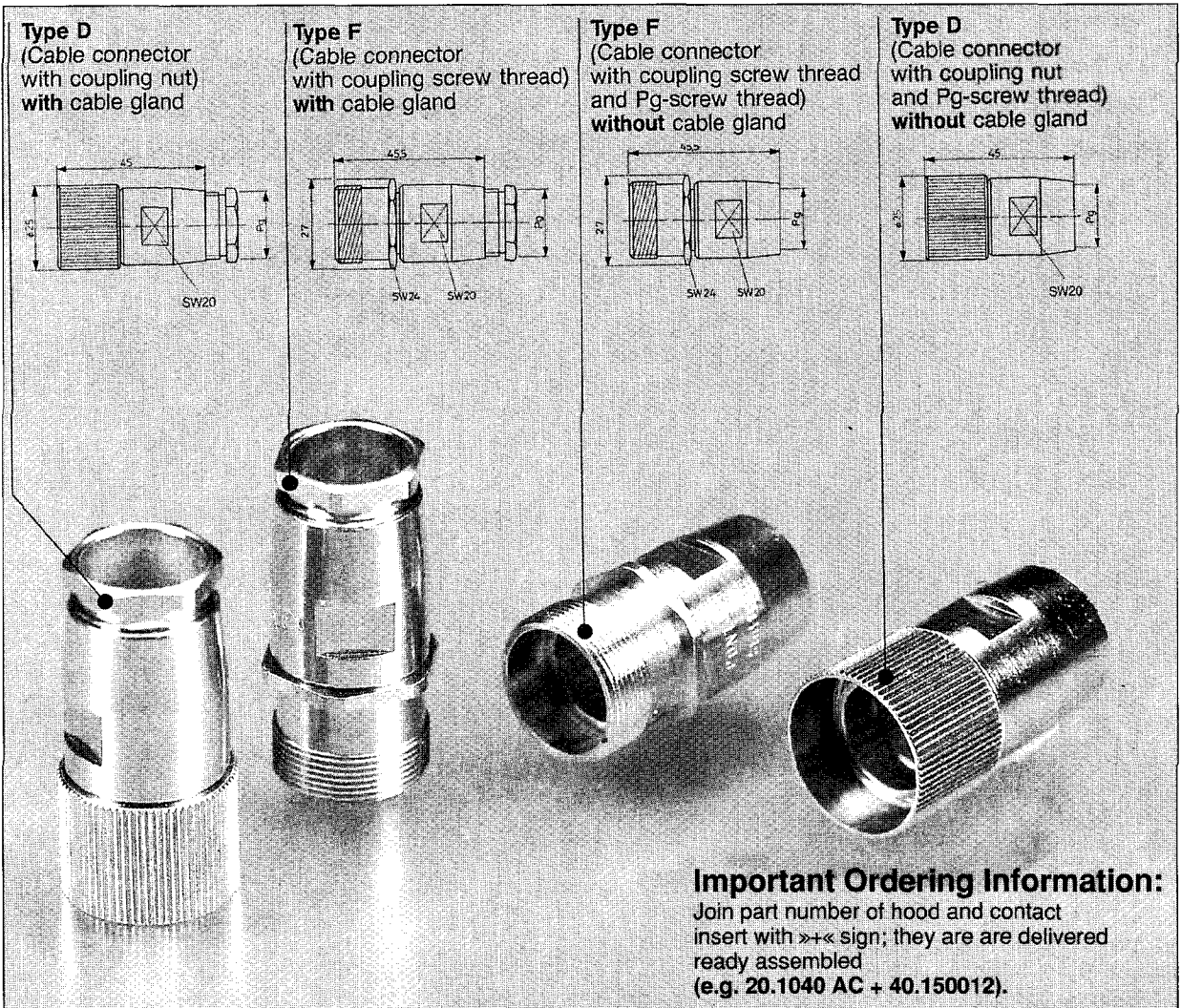


## Important Ordering Information:

Join part number of housing and contact  
insert with »+« sign; they are delivered  
ready assembled  
(e.g. 20.1040 AC + 40.150012).

# EPIC® Series R

SIZE 2.5  
CABLE CONNECTOR




Part No.	Pg Size	Connector in coding position	Units / Pack		Part No.	Pg Size	Connector in coding position	Units / Pack	
20.1040 AB	7	N	10	Type D with cable gland	20.1050 AB	7	N	10	Type F with cable gland
20.1041 AB	7	Y	10		20.1051 AB	7	Y	10	
20.1042 AB	7	X	10		20.1052 AB	7	X	10	
20.1040 AC	9	N	10		20.1050 AC	9	N	10	
20.1041 AC	9	Y	10		20.1051 AC	9	Y	10	
20.1042 AC	9	X	10		20.1052 AC	9	X	10	
20.1040 AD	11	N	10		20.1050 AD	11	N	10	
20.1041 AD	11	Y	10		20.1051 AD	11	Y	10	
20.1042 AD	11	X	10		20.1052 AD	11	X	10	
20.1040 AE	13.5	N	10		20.1050 AE	13.5	N	10	
20.1041 AE	13.5	Y	10		20.1051 AE	13.5	Y	10	
20.1042 AE	13.5	X	10		20.1052 AE	13.5	X	10	
20.1040 CA	7	N	10	20.1050 CA	7	N	10	Type D without cable gland	Type F without cable gland
20.1041 CA	7	Y	10	20.1051 CA	7	Y	10		
20.1042 CA	7	X	10	20.1052 CA	7	X	10		
20.1040 CB	9	N	10	20.1050 CB	9	N	10		
20.1041 CB	9	Y	10	20.1051 CB	9	Y	10		
20.1042 CB	9	X	10	20.1052 CB	9	X	10		
20.1040 CC	11	N	10	20.1050 CC	11	N	10		
20.1041 CC	11	Y	10	20.1051 CC	11	Y	10		
20.1042 CC	11	X	10	20.1052 CC	11	X	10		
20.1040 CD	13.5	N	10	20.1050 CD	13.5	N	10		
20.1041 CD	13.5	Y	10	20.1051 CD	13.5	Y	10		
20.1042 CD	13.5	X	10	20.1052 CD	13.5	X	10		

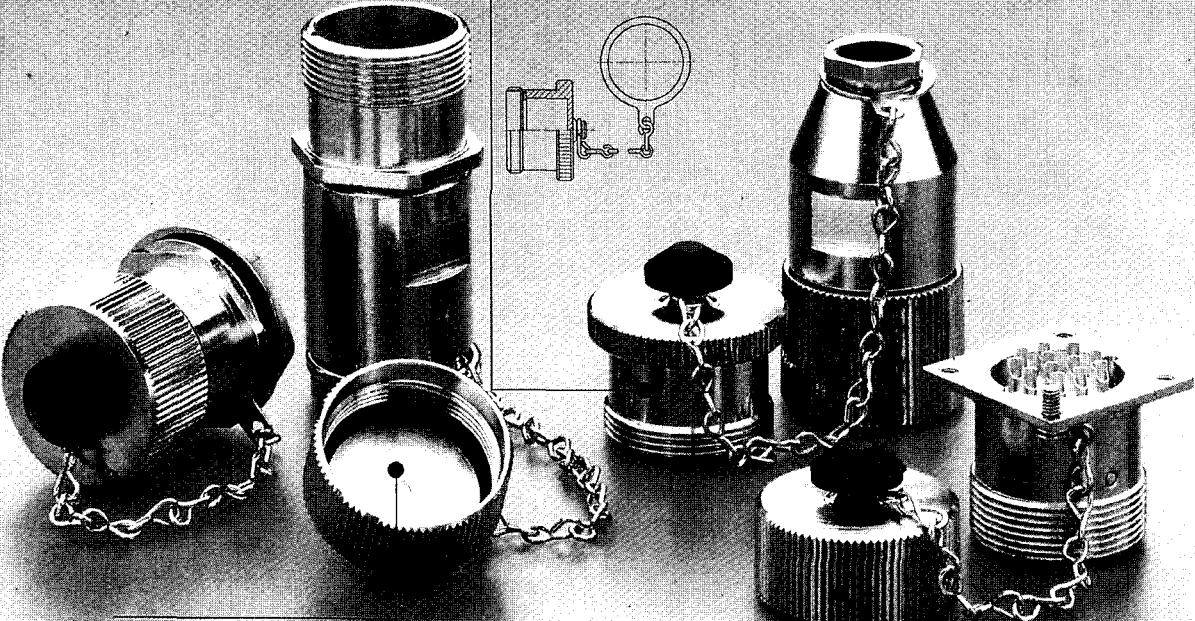
# EPIC® Series R

## SIZE 2.5 ACCESSORIES

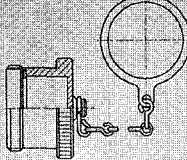
Part No.	Size	Type
50.101150	2,5	A
50.102150	2,5	B 1
50.103150	2,5	B 2
50.104151	2,5	D
50.105150	2,5	F
50.106150	2,5	G 1



Metal screw cap			
Part No.	Size	Type	Pg
50.104106	2,5	D	7
50.104105	2,5	D	9
50.104104	2,5	D	11
50.104103	2,5	D	13,5

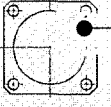


Metal screw cap			
Part No.	Size	Type	Pg
50.105106	2,5	F	7
50.105105	2,5	F	9
50.105104	2,5	F	11
50.105103	2,5	F	13,5
50.106107	2,5	G 1	-

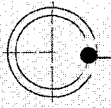


Metal screw cap		
Part No.	Size	Type
50.101102	2,5	A
50.102102	2,5	B 1
50.103102	2,5	B 2

Flat gasket		
Part No.	Size	Type
50.101200	2,5	A
50.102201	2,5	B 1
50.103201	2,5	B 2



Sealing ring		
Part No.	Size	Type
50.106202	2,5	G 1



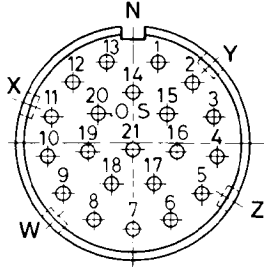
Part No.	Package	Part No.	Package
50.101102	10	50.104105	10
50.101150	10	50.104106	10
50.101200	10	50.104151	10
50.102102	10	50.105103	10
50.102150	10	50.105104	10
50.102201	10	50.105105	10
50.103102	10	50.105106	10
50.103150	10	50.105150	10
50.103201	10	50.106107	10
50.104103	10	50.106150	10
50.104104	10	50.106202	10



# EPIC® Series R

## SIZE 3.0 CONTACT INSERTS

No. of contacts: 21  
Contact size: pin Ø 1 mm



View of the connector side  
**Male** contact insert

Working current	7,5 A
Rated voltage (VDE 0110)	
Insulation Group A	380 V ac
Insulation Group B	60 V ac
Insulation Group C	— V ac
Test voltage (VDE 0110)	
Contact/Contact	1.5 kV ac
Contact/Earth	2.0 kV ac
Insulating resistance	10 <sup>9</sup> M Ohm

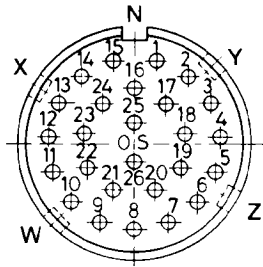
### Plug Connector

Connection: Solder cup  
40.200021  
Contact Plating:  
3–4 µm hard silver  
40.200121  
Contact Plating:  
0.2 µm hard gold  
40.200221  
Contact Plating:  
0.8 µm hard gold

### Receptacle

Connection: Solder cup  
40.250021  
Contact Plating:  
3–4 µm hard silver  
40.250121  
Contact Plating  
0.2 µm hard gold  
40.250221  
Contact Plating:  
0.8 µm hard gold

No. of contacts: 26  
Contact size: pin Ø 1 mm



Working current	7,5 A
Rated voltage (VDE 0110)	
Insulation Group A	380 V ac
Insulation Group B	60 V ac
Insulation Group C	— V ac
Test voltage (VDE 0110)	
Contact/Contact	1.5 kV ac
Contact/Earth	2.0 kV ac
Insulating resistance	10 <sup>9</sup> M Ohm

### Plug Connector

Connection: Solder cup  
40.200026  
Contact Plating:  
3–4 µm hard silver  
40.200126  
Contact Plating:  
0.2 µm hard gold  
40.200226  
Contact Plating:  
0.8 µm hard gold

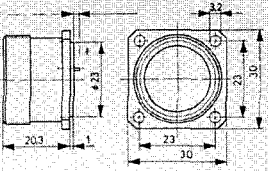
### Receptacle

Connection: Solder cup  
40.250026  
Contact Plating:  
3–4 µm hard silver  
40.250126  
Contact Plating  
0.2 µm hard gold  
40.250226  
Contact Plating:  
0.8 µm hard gold

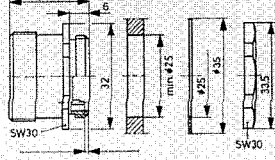
# EPIC® Series R

SIZE 3.0

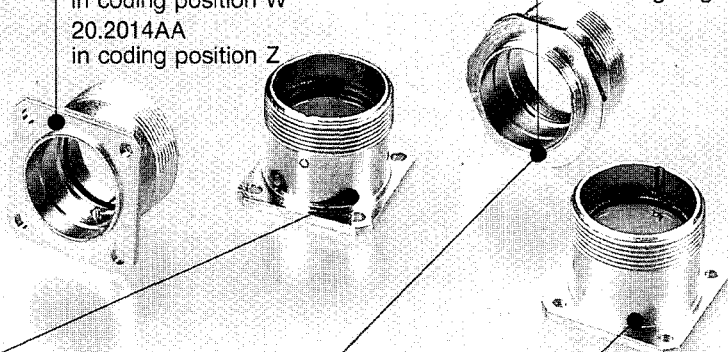
ROUND CONNECTOR – FOR FRONT AND BACK PANEL ASSEMBLY



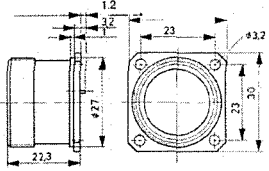
**Type A**  
for panel mounting application  
front assembly, 4 x through-hole  
20.2010AA  
for contact insert  
in coding position N  
20.2011AA  
in coding position Y  
20.2012AA  
in coding position X  
20.2013AA  
in coding position W  
20.2014AA  
in coding position Z



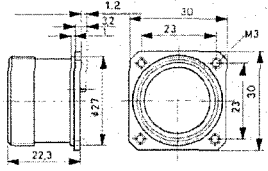
**Type G 1**  
for panel mounting application  
front single-hole assembly  
(wall thickness 2 mm max.)  
in application with  
the sealing ring  
20.2060AA  
for contact insert  
in coding position N  
20.2061AA  
in coding position Y  
20.2062AA  
in coding position X  
20.2063AA  
in coding position W  
20.2064AA  
in coding position Z



Thread M25 x 1.5



**Type B 2**  
for panel mounting application  
back wall assembly, 4 x through-hole  
(wall thickness 4 mm max.)  
20.2030AA  
for contact insert  
in coding position N  
20.2031AA  
in coding position Y  
20.2032AA  
in coding position X  
20.2033AA  
in coding position W  
20.2034AA  
in coding position Z



**Type B 1**  
for panel mounting application  
back wall assembly, 4 x M3 thread  
(wall thickness 4 mm max.)  
20.2020AA  
for contact insert  
in coding position N  
20.2021AA  
in coding position Y  
20.2022AA  
in coding position X  
20.2023AA  
in coding position W  
20.2024AA  
in coding position Z

## Important Ordering Information:

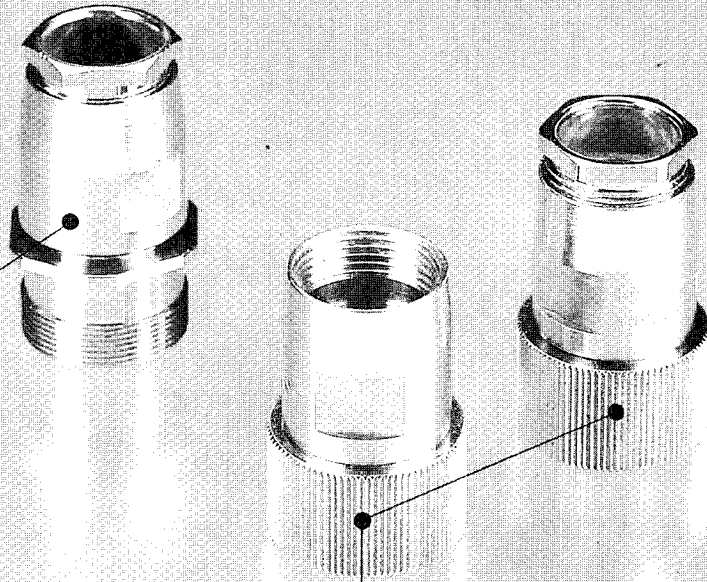
Join part number of housing and contact insert with »+« sign; they are delivered ready assembled  
(e.g. 20.2010 AA + 40.150012)

# EPIC® Series R

SIZE 3.0  
CABLE CONNECTOR

## Important Ordering Information:

Join part number of hood and contact insert with a »+« sign, they are delivered ready assembled (e.g. 20.2050AF+40.200021).



**Type F**  
(cable connector with coupling thread)  
with or without Cable gland

**Type D**  
(cable connector with coupling nut)  
with or without Cable gland

				with cable gland				
				with cable gland				
				without cable gland				
				without cable gland				
Part no.	Pg	Contact insert in coding position	Package		Part no.	Pg	Contact insert in coding position	Package
20.2050 AF	16	N	10	Type D with cable gland	20.2040 AF	16	N	10
20.2051 AF	16	Y	10		20.2041 AF	16	Y	10
20.2052 AF	16	X	10		20.2042 AF	16	X	10
20.2053 AF	16	W	10		20.2043 AF	16	W	10
20.2054 AF	16	Z	10		20.2044 AF	16	Z	10
20.2050 CE	16	N	10	Type F without cable gland	20.2040 CE	16	N	10
20.2051 CE	16	Y	10		20.2041 CE	16	Y	10
20.2052 CE	16	X	10		20.2042 CE	16	X	10
20.2053 CE	16	W	10		20.2043 CE	16	W	10
20.2054 CE	16	Z	10		20.2044 CE	16	Z	10