Technical Data

Type PCC/PCF - CS90
Composite 90° elbow fitting - Metric Thread

Corrosion-resistant composite fittings for light rail and applications in exposed areas

Features

- PCC - Coarse pitch conduit
- PCF - Fine pitch conduit
- Smooth through bore
- High strength and high impact resistance
- Full swivel function on elbow fittings
- Lightweight
- For insertion into threaded entries and knockouts using a locknut. Locknut supplied separately

Conformity
Low voltage directive
UR to the UL 1696 standard (PADL and PA Heavyweight only)
BSI Kitemark KM35161

Approvals

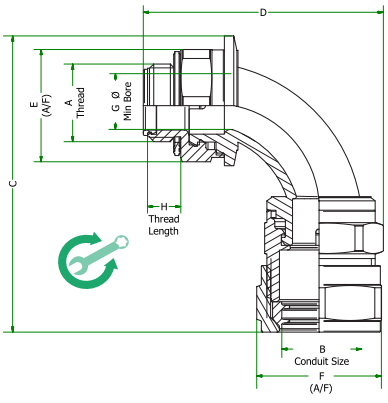
Fire Performance	
Test Standard	Performance Rating
BS EN 61386-1 & 23	Approved
NFF16-101	I4 F2
ISO 4589-2	24%
BS EN 60695-2-11	750°C
UL94	HB

Degree of Mechanical Protection
Very high corrosion resistance
High impact resistance
Very high chemical resistance
Very high fatigue life

Temperature Range
Static Applications: -50°C to +120°C
Moving Applications: -45°C to +120°C

Material
Polyamide (Nylon) 66
Nickel plated brass
Neoprene seals

IP Rating	Appropriate Fitting
For use with: Type PA / PI / CP / PR / PADL & PF conduits	
IP66	Yes
IP67	Yes
IP68	Yes (4 bar 30 mins)
IP69	Yes



Standard thread length

Part no:	To fit conduit size		Nominal Dimensions						
	Metric	Thread	B	C	D	E	F	G	H
PCF13/M16/CS90	13mm	M16	13.0	66.0	58.6	20.6	22.0	8.8	12.0
PCF16/M16/CS90	16mm	M16	16.0	67.0	62.0	24.0	25.4	11.0	12.0
PCF21/M20/CS90	21mm	M20	21.0	72.0	62.8	27.0	30.0	14.9	12.0
PCC28/M25/CS90	28mm	M25	28.0	86.3	76.2	34.0	38.0	19.0	12.0
PCC34/M32/CS90	34mm	M32	34.0	100.0	93.5	42.0	44.5	25.3	12.0
PCC42/M40/CS90	42mm	M40	42.0	127.8	108.7	54.0	57.0	33.3	12.0
PCC54/M50/CS90	54mm	M50	54.0	145.7	132.0	70.0	70.0	40.0	12.0

Short thread length

Part no:	To fit conduit size		Nominal Dimensions						
	Metric	Thread	B	C	D	E	F	G	H
PCF13/M16S/CS90	13mm	M16S	13.0	67.5	55.0	24.0	22.0	8.8	8.0
PCF16/M16S/CS90	16mm	M16S	16.0	67.5	58.3	24.0	25.4	11.0	8.0
PCF21/M20S/CS90	21mm	M20S	21.0	72.5	59.0	27.0	30.0	14.9	8.0
PCC28/M25S/CS90	28mm	M25S	28.0	87.8	71.9	34.0	38.0	19.0	8.0
PCC34/M32S/CS90	34mm	M32S	34.0	99.7	84.7	42.0	44.5	25.3	8.0
PCC42/M40S/CS90	42mm	M40S	42.0	127.5	99.0	54.0	57.0	33.3	8.0
PCC54/M50S/CS90	54mm	M50S	54.0	145.5	123.5	70.0	70.0	40.0	8.0

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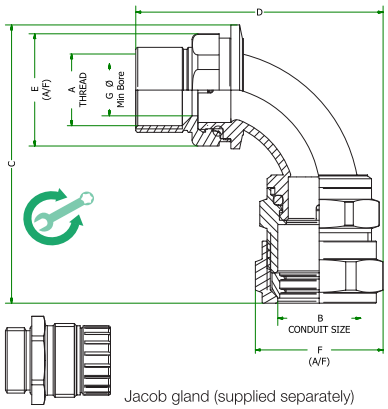
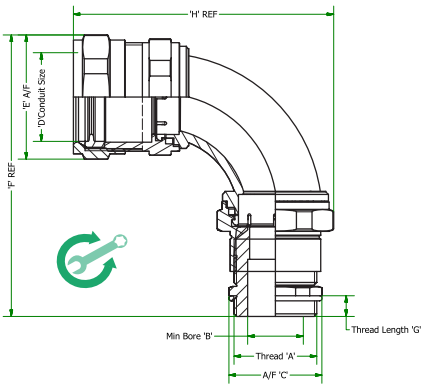


Jacob gland (supplied separately)



Housing to suit Jacob cable gland

Part no:	To fit conduit size		Nominal Dimensions					
	Metric	Thread	B	C	D	E	F	G
PCF13/M16/CS90/J	13mm	M16	13.0	67.0	58.5	22.0	22.0	8.8
PCF16/M16/CS90/J	16mm	M16	16.0	68.0	59.5	22.0	25.4	9.4
PCF21/M20/CS90/J	21mm	M20	21.0	72.0	63.7	27.0	30.0	13.6
PCC28/M25/CS90/J	28mm	M25	28.0	89.0	78.3	36.0	38.0	16.5
PCC34/M32/CS90/J	34mm	M32	34.0	100.5	91.3	42.0	44.5	21.5
PCC42/M40/CS90/J	42mm	M40	42.0	126.5	109.0	52.0	57.0	27.4
PCC54/M50/CS90/J	54mm	M50	54.0	145.5	141.5	70.0	70.0	35.6

Fitting complete with cable gland

Part no:	To fit conduit size		Nominal Dimensions						
	Metric	Thread	B	C	D	E	F REF	G	H REF
PCF13/M16/S45/JRL	13mm	M16	10.0	17.5	13.0	22.0	66.3	5.0	69.3
PCF16/M16/S45/JRL	16mm	M16	10.0	17.5	16.0	25.4	69.3	5.0	65.8
PCF21/M20/S45/JRL	21mm	M20	14.0	22.0	21.0	30.0	74.5	6.0	66.9
PCC28/M25/S45/JRL	28mm	M25	17.4	27.2	28.0	38.0	93.2	7.0	84.8
PCC34/M32/S45/JRL	34mm	M32	21.5	34.0	34.0	44.5	108.8	8.0	96.0
PCC42/M40/S45/JRL	42mm	M40	27.7	43.0	42.0	57.0	128.4	8.0	120.8
PCC54/M50/S45/JRL	54mm	M50	37.0	55.0	54.0	70.0	161.6	9.0	138.1
PCF21/M20/S45/JLL	21mm	M20	14.0	22.0	21.0	30.0	77.5	9.0	66.9
PCC28/M25/S45/JLL	28mm	M25	17.4	27.2	28.0	38.0	98.4	11.0	84.8
PCC34/M32/S45/JLL	34mm	M32	21.5	34.0	34.0	44.5	113.5	13.0	96.0
PCC42/M40/S45/JLL	42mm	M40	27.7	43.0	42.0	57.0	130.5	13.0	120.8
PCC54/M50/S45/JLL	54mm	M50	37.0	55.0	54.0	70.0	161.6	13.7	138.1

BS EN 61386 Classification

Fitting	Compression	Impact	Min Temp	Max Temp	Bending	Electrical	IP Solids	IP Water	Corrosion	Tensile	Non-Flame propgating	Suspended load
PCC/ PCF	N/A	4	5	4	N/A	0	6	7	0	2	1	0

Mechanical Properties

Test type	Methods / Standards	Requirements	Status
Tensile Strength	IEC61386-1	2 mins at Specified Value (PAFS21 Conduit)	Class 2
Tensile Strength		Ultimate Pullout (PAFS21 Conduit)	350N
Impact Strength @ -45°C	IEC61386-1	No visible damage	Class 1
Impact Strength @ -5°C	IEC61386-1	No visible damage	Class 4
Impact Strength @ -23°C	IEC61386-1	No visible damage	Class 5

Tensile Tests to IEC 61386 gives the minimum classification value only. Actual values will depend on the type and size of the fittings used and will always be greater than the minimum – Impact strength is the minimum classification value at the minimum temperature – actual values will depend on size and temperature. Specific values available on request.

Thermal Properties

Test type	Methods / Standards	Requirement	Value
Dynamic Applications	IEC 61386-23	5000 Operations at MBR 2hrs	-45°C to +120°C
Static Short Term Temp		Temporary Use (3000hrs)	-50°C to +120°C
Static Long Term Temp		Permanent Use (30,000) Hours	-40°C to +120°C

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Flammability				
Test type	Methods / Standards	Requirement	Result	Unit
Glow Wire	BS EN 60695-2-11	Extinguish within 30s	750°C	°C
Flammability	IEC 61386-1-12	1Kw Burner Flame to Self Extinguish	Pass	Pass/Fail
Oxygen Index - Nylon Body	ISO 4589-2		24.1	%
Ignition Rating - Nylon Body	NF F16-101	I Rating	I4	-

Smoke				
Test type	Methods / Standards	Requirement	Result	Unit
Fume Rating - Nylon Body	NF F16-101	F Rating	F2	-

Toxicity				
Test type	Methods / Standards	Requirement	Result	Unit
Halogen Free	NFX 70-100	< 0.5%	Pass	Pass/Fail

Pre Test Conditions			
Duration	Standard	Temperature	Relative Humidity
168 (Hours)	IEC61386	23 (ºC)	50 (%)

Chemical Resistance Chart			
Astm No.1	Diesel oil	Methyl Bromide	Sulphur Dioxide (Gas)
Astm No.2	Diethylamine	MEK	Sulphuric Acid (10%)
Astm No.3	Ethanol	Nitric Acid (10%)	Sulphuric Acid (70%)
Acetic Acid (10%)	Ether	Nitric Acid (70%)	Toluene
Acetone	Ethylamine	Oxalic Acid	Transformer Oil
Aluminium Chloride	Ethylene Glycol	Ozone (Gas)	1,1,1-Trichloroethane
Aniline	Ethyl Ethanoate	Paraffin oil	Trichloroethylene
Benzaldehyde	Freon 32	Petrol	Turpentine
Benzene	Hydrochloric Acid (10%)	Phenol	Vegetable Oil
Carbon tetrachloride	Hydrochloric Acid (36%)	Sea Water	Vinyl Acetate
Chlorine water	Hydrogen Peroxide (35%)	Silver Nitrate	Water
Chloroform	Hydrogen Peroxide (87%)	Skydrol	White Spirit
Citric Acid	Lactic Acid	Sodium Chloride	Zinc Chloride
Copper Sulphate	Lubricating oil	Sodium Hydroxide (10%)	
Cresol	Methanol	Sodium Hydroxide (60%)	

Key:
Suitable
Limited Suitability
Unsuitable
Not Tested

The information above is given as a guide only and is based on published technical data and experience. The chemical resistance of the above products is dependent on factors such as chemical exposure, concentration of the chemical and temperature. The above chemicals are valid for a temperature of 23°C. Use of the above table is at the users own discretion and risk. Those using it must satisfy themselves that their application presents no health and safety risks. The end user should assess compatibility with their application and contact ABB for further information.

ADHERENCE TO THE CURRENT WIRING REGULATIONS BS7671 OR NEC WIRING REGULATIONS (FOR USA) IS STRONGLY ADVISED.
The Company's policy is one of continuous improvement and reserves the right to change specifications at any time without prior notice.

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