Instrumentation Solutions

Enclosures and Protective Shades

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

ENGINEERING YOUR SUCCESS.

Contents

Enclosures and Protective Shades

Introduction

Parker is able to supply a range of robust Glass Reinforced Plastic (GRP) Enclosures and Protective Shades to protect field mounted instrumentation from harsh environments.

An enclosure or shade covering the instrument will protect from severe weather, either extreme sunshine or sub-zero temperatures, and prevent damage to the instrumentation by airborne dirt particles settling, falling debris or even accidental breakage.

Value

- Available with wide range of Parker manifolds
- Units available single, double and triple instruments
- Weight saving - GRP enclosures are 25% of the weight of the equivalent stainless steel units
- Corrosion free with excellent chemical resistance
- Suitable for all proprietary instruments

Parker 'PEX' Enclosure Systems are supplied 'pre-fitted' with Parker 'EXT' style Manifolds.

Parker can offer a single source supply for fully fitted packages that are ready to install on site.

Manifolds, instruments (sourced or free-issued), fittings and heating systems can be pre-fitted by Parker's assembly service, so when an enclosure arrives at the installation point it can be mounted straight on to a 2" NB pipe stand. The process and vent tubing can then be connected to the compression fittings and the instrument signal cable wired in. The system is then ready for commissioning and use.

Single source supply of instrumentation products reduces procurement costs by simplifying the process of collation and source of individual components from many suppliers and reduces engineering costs after delivery by having a ready-to-install product.

Why Protect?

- Extend instrumentation life
- Reduce plant downtime
- Eliminate high maintenance costs

Need any help?

If you would like to discuss the benefits of modular instrumentation systems for your plant, or would like help in configuring a manifold solution, Parker welcomes your contact - see the back page of this brochure to find your local office.

Overview

Fully assembled systems can be supplied based on your specific project or site requirements. They can be fitted with various pressure or flow transmitters and can manage the harsh environmental and process conditions.

Item	Description	Page
1	Parker Enclosure	6
2	Identification Label	7
3	Thermostat	
4	Finned Space Heater	8
5	Viewing Window	7
6	Mounting Hub (for 2" NB Pipe Stand)	
7	Propstay	
8	Junction Box	
9	Transmitter	
10	Parker Manifold	10 & 11
11	Instrument and Signal Cable Gland	7

Enclosures

The Parker instrument enclosure offering consists of a comprehensive range to suit a wide range of instrumentation applications. The enclosures have a shiny gel-coat external finish that is the same as used in the construction of boats and marine vessels. This enables Parker enclosures to withstand the demands of hostile environments.

Other Enclosure Assembly Styles

Where Parker EXT style manifolds are not suitable (for example, where process & vent lines require 'inter-connection' within the enclosure), or the type of instrument does not require a manifold (for example transmitter with remote seals, temperature transmitter, remote indicator) Parker has alternative solutions.

Soft Cover Enclosures

Soft cover enclosures provide insulation and protection of equipment where weight, space and access concerns exclude the use of GRP enclosures. Manufactured from silicone injected fibreglass as standard, soft cover enclosures are available in various thicknesses to suit the application conditions. Light weight yet robust construction means that the enclosures are self-supporting, removing the need for support frames, or brackets.

Protective Shades

The Parker instrument protective shade system is a range of single, double and triple width shades that are designed to protect single instruments, two instruments side-by-side or a panel installation.

Mounting arrangements are flexible and can include 316 Stainless Steel mounting for a single or twin 2" NB pipestand, clearance holes to suit panel or wall mounting, or individual transmitter 'head' mounted applications.

Manufactured from robust GRP with an external gel-coat finish, the protective shades can protect sensitive instrumentation from the temperature damage that can be caused by direct sunshine and also falling debris and airborne dirt particles.

Accessories

Frost protection or internal temperature maintenance within the enclosure can be achieved by either electrical or steam heating and mechanically protected polyurethane foam insulation that is encapsulated between GRP layers during manufacture. Instrumentation with indicating displays can be observed through suitably positioned viewing windows.

A complete range of options and accessories are available to enable full customisation of the enclosures to suit individual applications.

Manifolds

Parker EXT Manifolds, purpose designed and best suited for use with enclosures, can be supplied installed within the enclosures in the following:

- 2 Valve In-Line (remote) Mount
- 2 Valve Direct Mount
- 3 Valve Direct Mount
- 5 Valve Direct Mount formats

Enclosures that are sized to suit single, double, triple or multiple instrument installations are available within the Parker enclosure system.

PEX Enclosure System

Product Description

All of the Parker 'PEX' range of enclosures have hinged lids and are fitted with Stainless Steel hinges, catches and prop stay(s). As standard each enclosure is fitted with a 316 Stainless Steel base plate with a welded stub to suit mounting the enclosure to a 2" NB pipe stand. Triple and Multi size enclosures have two welded stubs to suit either mounting to two 2" NB pipe stands, or a 'twin' 2" NB pipe stand. If required, rear mounting options are available.

The Parker 'EXT' enclosure style manifolds are fitted to either to the enclosure base, or rear wall via a 316 Stainless Steel plate. Clearance holes are provided in the plate to suit the Process & Vent ports. For further information regarding the Parker 'EXT' style of manifolds and associated options refer to pages 10 and 11.

Features

- GRP Fire Retardant to BS476, part 7, class 2
- Weather protection to IP66 (EN60529, NEMA 4X)
- Maintenance free 'gel-coated' inner and outer surfaces, providing superior weathering, corrosion and UV resistance (1000 hrs - QUV Accelerated Weathering Test)
- Austenitic stainless steel fittings and fixings (hinges, catches, prop stays)
- Reduced Surface Resistance (Anti-Static) option, to EN60079 (see 'finish' option) Colour = 'Mid Grey'
- Operating temperatures: -55 to +80°C (-67 to +176°F)
- Colour options include Light Grey (RAL 7032) & most other RAL / BS colour codes.
- Thermal insulation option – PU foam encapsulated between GRP layers during manufacture, providing a sealed and rigid inner surface to protect against absorption of fluids and physical damage
- Non-Absorption of Oil, Hydrocarbons & Water
- Impact resistance to ISO 179 (55kJ/m^2)
- Bending Strength: 80N/mm^2

Part Number	Description	Width mm	Height mm	Depth mm
PEX-S1	Compact Single Instrument Enclosure	380	395	310
PEX-S2	Standard Single Instrument Enclosure	400	450	400
PEX-D1	Enclosure to suit Double Pressure Application	600	450	400
PEX-D2	Enclosure to suit Double DP Application	700	450	400
PEX-T1	Enclosure to suit Triple Instrument Application	900	450	400
PEX-M1	Enclosure for Multi-Instrument Assemblies	500	600	500

Note: Listed above are standard part numbers, please use the options (opposite page) to fully specify your requirements. For other basic configurations of soft or bespoke enclosures, please contact us on 00 44 1271 313131, or email: ipde_technical@parker.com

Options

Each option is provided with an 'Option Code' to enable the option to be specified at enquiry, or order stage. Listed below are various options that are available for all enclosures in the PEX range.

Option	Description	Code
Finish / Colour	Standard finish colour is 'Light Grey' (RAL 7032)	GR
	Other RAL / BS colours are available upon request	OC
	Reduced Surface Resistance (Anti-Static) to EN60079 Colour - 'Mid Grey'	AS
Viewing Window	Safety Glass Viewing Window(s)	SG
Insulation	Thermal Insulation to prevent 'heat loss'	IN
Tag Label	Traffolyte Tag Label - Engraved with Instrument Tag number	TT
	316 Stainless Steel Tag Label - Engraved with Instrument Tag number	TS
Instrument Signal Cable Entry Gland	'Stuffing' / 'Entry' Cable Gland to suit Instrument Signal Cable (one per instrument) - Fitted. Please specify cable OD if greater than 11.90mm	
	M20 Plastic (Blue Cap).	GP
	Brass	GB
	Brass / Nickel Plated	GN
	Stainless Steel	GS
Manifold Orientation:	The 'EXT' style of manifold (pages 10 & 11) can be installed on the base, or rear of the enclosure. Where more than one Instrument is fitted there can be a combination of base and rear mounting	
	Base mounted	MB
	Rear mounted - High	MH
	Rear mounted - Low	ML
	Base & Rear mounted manifold combination (please specify)	MC
Enclosure Mounting	Use the option code below if the enclosure requires 'Rear Mounting', instead of the standard base mount to a 2"NB pipe stand(s). Details should be supplied	
	Rear mounted enclosure	RM

How to Order

To enquire or order a Parker PEX Enclosure the required enclosure model & enclosure options can be specified as illustrated in the example below:

For a RAL7032 Light Grey PEX-S1 enclosure that has a viewing window, with the EXT manifold mounted on the base, the following part number should be provided: PEX-S1/GR/SG/MB

NB: Required enclosure accessories and manifold part numbers will also need to be provided. Please refer to the appropriate pages (8-11).

Accessories

To complement the range of enclosures, Parker are able to offer a wide range of accessories to assist with your temperature maintenance, ventilation and mounting requirements.

Heating Systems

Parker combines a comprehensive range and styles of heating system products with extensive expertise to provide a heating system solution for all potential applications.

For applications that require complete frost protection or temperature maintenance inside the enclosure then a space heater will be required. Space heaters can take the form of compact aluminium finned units (Nickel Plated version available) or, where space allows, Stainless Steel panel heaters. By selecting the appropriate fixed set-point thermostat the desired internal enclosure temperature can be maintained. A steam coil in either Copper or Stainless Steel can also be used if steam heating is the preferred option.

To select an appropriate heating system the following information will be required:

- Location: Hazardous / Safe Area (please specify)
- If operating within a hazardous environment, please specify Certification and Temperature Class required for example Atex / T3
- Minimum Ambient Temperature at the location
- Electrical, or Steam?
- Service required - Frost Protection, or Temperature Maintenance?
- If service is for temperature maintenance, please specify the temperature to maintain.
- Preferred Style of Heater (Space Heater, Block Heater)

Electrical Heating

Finned Space Heaters

Finned Aluminium Heaters are a neat and compact unit that can be sited in various positions within the enclosure as installation space dictates.

The Parker range of Finned heaters are available in many power outputs and can accept 110V-240VAC / DC input Voltage.

Panel Heaters

Stainless Steel Panel Heaters are a good alternative in areas where no Aluminium is allowed. Due to the size of the units they generally have to be mounted onto the rear wall of the enclosure so may not be suitable for allapplications.

The Parker range of Panel Heaters are available in many power outputs and can accept 110V-240VAC / DC input Voltage.

Direct Contact Block

Aluminium or Stainless Steel block mount directly onto the manifold to provide efficient conduction heating, with a self-limiting output characteristic. The block heater is supplied with a cable length of 1m as standard, but other lengths are available. Please contact the Division for further information.

Steam Heating

A separate stainless steel steam block which mounts directly onto the manifold is used to provide steam heating.

Two G 1/4 female ports with tube fittings provide the connection to the steam line.

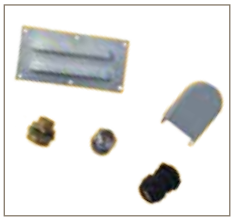
Part Number	Description	Vent
PP0018A/1	Steam Tracing Block	10mm
PP0018C/1		3/8"

Steam Coil

A Copper or Stainless Steel steam coil that routes around the enclosure to provide frost-protection or internal temperature maintenance of the internal space within the enclosure. Various tube OD's are available to suit installation sites preferences.

Ventilation / Drains

Part Number	Description
PEX-LV-SS	Stainless Steel Louvre Vent
PEX-PLV	Plastic Labyrinth Vent
PEX-BD-P	Breather Drain - Plastic
PEX-BD-B	Breather Drain - Brass
PEX-BD-BNP	Breather Drain - Brass NP
PEX-BD-S	Breather Drain - 316 Stainless Steel



2" NB Pipe Stands

Standard 2" NB Pipe stands are available in both 'Single' & 'Twin' styles

Part Number	Description
PEX-PS-1MGS	1m High - Galvanised Steel
PEX-PS-1-5MGS	1.5m High - Galvanised Steel
PEX-PS-1MSS	1m High - 316 Stainless Steel
PEX-PS-1-5MSS	1.5m High - 316 Stainless Steel

Note: Heating requirements can vary depending on service. To contact the division, please telephone + 44 1271 313131or email: ipde_technical@parker.com

EXT Style Manifolds

Product Description

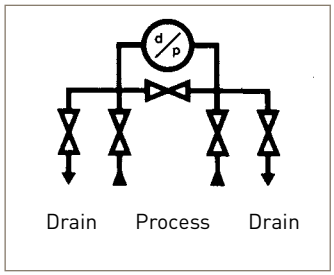
The 'EXT' style of manifold eliminates the need for Process & Vent tubing inside the enclosure. Consequently there are less potential 'leak points'. When the manifold is fitted in the enclosure the assembly is then ready for fitting the instrument(s). No further instrument mounting brackets are required, plus the instrument can be removed for maintenance without disturbing the manifold, or process / vent tubing.

Options

- The 'EXT' style of manifold is available with or without Parker instrumentation compression fittings
- Where fittings are required with the enclosure assembly they can be (i) two ferrule compression fitting, (ii) single ferrule compression fitting,(iii) PTFree Connect, or (iv) 'Inverted' style
- Process and Vent ports can be specified as NPT, BSPTr, or BSPP

5 Valve Manifold - for direct mounting to Differential Pressure Transmitters with 54mm/2.125" flange mounting centres

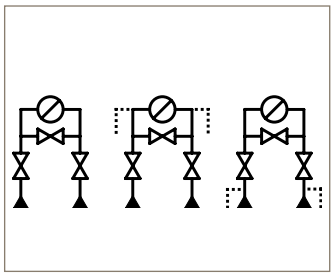
- Dual isolate, equalise and dual vent valves
- Designed to facilitate forward orientation of indicating transmitter head
- Supplied with instrument mounting bolts and PTFE seals



Part Number	Description	Inlet/Process	Outlet/Inst.	Drain/Bleed/Test
HD*5EXT	Direct (Flange) Mount 5 Valve Manifold	1/2" NPT (F)	Flange	1/4" NPT (F)

3 Valve Manifold - for direct mounting to Differential Pressure Transmitters with 54mm/2.125" flange mounting centres

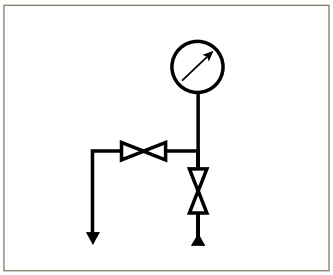
- Dual isolate, equalise and dual vent valves
- Designed to facilitate forward orientation of indicating transmitter head
- Supplied with instrument mounting bolts and PTFE seals
- Additional test, or purge ports are available



Part Number	Description	Inlet/Process	Outlet/Inst.	Drain/Bleed/Test
HD*3EXT	Direct (Flange) Mount 3 Valve Manifold	1/2" NPT(F)	Flange	1/4" NPT(F)

2 Valve Manifold - for direct mounting to Pressure Transmitters

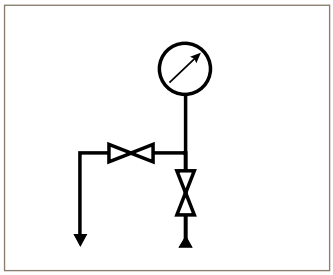
- Single isolate and vent valves
- Supplied with instrument mounting bolts and PTFE seals



Part Number	Description	Inlet/Process	Outlet/Inst.	Drain/Bleed/Test
HD*2EXT	Direct (Flange) Mount 2 Valve Manifold	1/2" NPT(F)	Flange	1/4" NPT(F)

2 Valve Manifold - for remote mount Pressure Transmitters, Gauges and Switches

- Single isolate and vent valves
- Can be supplied with Male/Male nipple, or swivel adaptor to suit Instrument



Part Number	Description	Inlet/Process	Outlet/Inst.	Drain/Bleed/Test
HL*2EXT	Remote (In Line) Mount 2 Valve Manifold	1/2" NPT(F)	1/2" NPT(F)	1/4" NPT(F)

Materials	Code*
Carbon Steel	C
316 Stainless Steel	S
Duplex	D1
Super Duplex	D2
Alloy 400	HC
Alloy 825	825
Alloy 625	625
Alloy C276	HC
Super Austenitic 6Mo	6Mo
Titanium	T

* Please insert material designator in part number

PS Protective Shades

Product Description

The Parker 'PS' protective shades are available in a wide range of sizes (single, double or triple width) to protect various instrumentation applications. 316 Stainless Steel shade mounting accessories are available to suit 2" NB pipe stand mounting and 'Instrument Head' mounting (mainly suitable for the smaller of the shade range, such as the PS-S5). Shades can be drilled to suit clients requirements, or 'bespoke' mounting can be designed and manufactured by Parker's specialist team.

Features

- GRP Fire Retardant to BS476, part 7, class 2
- Maintenance free 'gel-coated' inner and outer surfaces, providing superior weathering, corrosion and UV resistance (1000 hrs - QUV Accelerated Weathering Test)
- 316 Stainless Steel shade mounting options
- Reduced Surface Resistance (Anti-Static) option, to EN60079 (see 'finish' option) Colour = 'Mid Grey'
- Operating temperatures: -55 to +80°C (-67 to +176°F)
- Colour options include Light Grey (RAL 7032), White (RAL 9010) & most other RAL / BS colour codes
- Impact resistance to ISO 179 (55kJ/m^2)
- Bending Strength: 80N/mm^2

Protective Shade Models

Part Number	Width mm	Height mm	Depth mm
PS-S1	360	370	455
PS-S2	500	400	450
PS-S3	450	400	600
PS-S4	530	430	640
PS-S5	220	125	365
PS-S6	345	160	405
PS-S7	300	240	250
PS-S8	405	165	315
PS-D1	700	400	450
PS-D2	600	400	600
PS-T1	1000	400	450
PS-T2	900	400	600
PS-T3	1100	400	600

Options

Each option is provided with an 'Option Code' to enable the option to be specified at enquiry, or order stage. Listed below are various options that are available for all shades in the PS range.

Option	Description	Code
Finish / Colour	Standard finish colours are	
	'Light Grey' (RAL 7032)	GR
	'White' (RAL 9010)	WH
	Other RAL / BS colours are available upon request	OC
	Reduced Surface Resistance (Anti-Static) to EN60079. Colour - 'Mid Grey'	AS
Shade Mounting	316 Stainless Steel Mounting Kit to suit 2" NB Pipe stand mounting	M2
	316 Stainless Steel Mounting kit to suit shade mounting to the head of an Instrument (please specify Make / Model of Instrument)	MI
	Shade drilled to suit plate, wall, or clients requirements (please provide details)	MD
	Bespoke Shade Mounting (mounting designed to suit client application)	MB

How to Order

To enquire or order a Parker PS Protective Shade the required shade model & shade options can be specified as illustrated in the example below:

For a RAL9010 White PS-S1 shade suitable for mounting to a 2" pipestand, the following part number should be provided: PS-S1/WH/M2

Multitube™

IS – Intermittent* Steam Purge Bundles for Freeze Protection

Freeze Protection Bundles Designed For Intermittent (5 minutes) High-Temperature Steam Purge

General Design

Parflex IS-Intermittent Steam purge bundles are thermally insulated with a composite layer of fiberglass that allows for occasional high-temperature steam purge up to 593°C (1100°F) while at the same time ensuring freeze protection during winter using self-regulating heating cables.

Parflex IS-Intermittent Steam purge bundles are properly insulated to ensure that the outer surface area of the bundle is at or below 60°C (140°F) , meeting NEC Personnel Protection Code 427.12, during steam purge conditions at the highest specified ambient temperature.

IS- Intermittent Steam purge bundles are designed to provide a freeze protection temperature of 4.4°C (40°F) at the lowest specified ambient temperature.

Parflex IS-Intermittent Steam product are readily available in single and double tube. The most common tube sizes requested being 3/8" and 1⁄2" Seamless Stainless Steel 316/316L/316H alloys in either an average wall specification ASTM A269 or minimum wall specification ASTM A213. Other alloys and standards are available.

We also have available many other sizes; including metric sizes 6 mm, 8mm, 10mm and 12mm. (See How-to-order)

Testing

All IS-Intermittent Steam products are pressure tested prior to shipment. Third party testing and witnessing is available upon request, including DNV, ABS and Lloyd's Register. Contact factory for complete details.

Jacketing Materials

Black UV resistant FR-PVC is our standard material, however other jacketing materials are available upon request, including non-halogenated FR-TPE and Urethanes. Color jackets are also available upon request. (See How-to-order)

Heating Cables

Cables are available in 120V and 208-277 volt, with Heat outputs of 5, 10, 15 and 20 watt/ft.

Parflex standard IS designs come with an internal tinned copper braid on the heating cable for grounding purpose and a Fluoropolymer jacket over the heater to provide additional protection against harsh environments.

Intermittent Design *

Bundles can be steam purged for a period of 5 minutes once a day. During steam purge the outer jacket surface temperature will not exceed 60°C (140°F).

How To Order

IS-Intermittent Steam Purge Bundles
Freeze Protection Bundles Designed For Intermittent (5 minutes) High-Temperature Steam Purge

1	2	3	4	5	6
IS	B	08	49	B	5

1. Item

Intermittent High Temperature Steam	IS
** Intermittent is defined as steam purge for 5 minutes or less	

2. Material

Smls Copper - DHP Alloy No 122. ASTM B68-B75	1
Welded Stainless Steel - 316/316L ASTM A269	2
Welded Stainless Steel - 304 ASTM A269	3
Smls 316/316L ASTM A269	B
Smls 304 ASTM A269	C
Smls Monel - 400	D
Smls Hastelloy C22	E
Smls 316H ASTM A213	H
Smls Incoloy 825	I
Electropolish Smls - 316/316L ASTM A269 (10Ra Max)	L
Smls 316/316L ASTM A213	M
Silco Smls 316/316L ASTM A269	S
PFA Flouropolymer	P
FEP Fluoropolymer	F
TFE Fluoropolymer	T
Parflex 919 PTFE SS Braided Hose	7
Customer Specified Material	9

3. Tube Size OD

1/8”	02
3/16”	03
1/4”	04
5/16”	05
3/8”	06
7/16”	07
1/2”	08
5/8”	10
3/4”	12
1”	16
2mm	MA
4mm	MB
6mm	MC
8mm	MD
10mm	ME
12mm	MF
14mm	MG
16mm	MH

4. Tube Size Wall Thickness

0.16”	16
0.20”	20
0.28”	28
0.30”	30
0.31”	31
0.32”	32
0.35”	35
0.40”	40
0.47”	47
0.49”	49
0.50”	50
0.62”	62
0.65”	65
0.83”	83
89mm	89
1mm	10
1.5mm	15
2.0mm	20
2.5mm	25

5. Number

1Tube	A
2 Tubes	B
3 Tubes Etc	C
2 TubeParallel Design	P

6. Max Steam Purge Temp

538°C (1000°F)	1
288°C (550°F)	5
343°C (650°F)	6
399°C (750°F)	7
454°C (850°F)	8
Other	9
593°C (1100°F)	D

Note: For steam purges 204°C (400°F) or less use Parker SL or SH Bundle Series. For temperatures above 593°C (1100°F) contact factory.

7. Heating Cable Voltage

120VAC	1
240VAC	2
* 240 volt cables can be powered at 208, 240 or 277 volts	

8. Area Classification

Class I, Division 1 Areas	1
General Purpose/ Class I, Division 2 Areas	2

9. Avgerage Enrinoment Ambient Condition Range

Low/High	
4°C/26°C	A
-6°C/35°C	B
-17°C/40°C	C
-12°C/46°C	D

10. Jacket Material

FR-PVC	V
FR-TPE	T
FR-PUR	U
PUR	P
TPR	R
FRPE	E
LDPE	L
PVDF	F

Note: Parflex standard jacket material is FR-PVC

11. Maximum Jacket Surface Temp Design

60°CJacket	4

60°C meets NEC 427.12 for personnel protection

12. Jacket Colour

Black	N
Blue	B
Green	G
Orange	O
Yellow	Y
Purple	P
Red	R
White	W

Note: Parflex standard colour jacket is black

1	2	C	V	4	B
7	8	9	10	11	12

Part Number	Process Tube O.D. (in.)	Wall Thickness (in.)	Nominal Product O.D. (in.)	Product Weight (lbs./ft.)	Min. Bend Radius (in.)	Watt Density per foot / Voltage	Circuit Length Ft @ 50°F Start-up / Breaker (amps), 120V	Performance At Low Ambient Conditions	Maximum Allowable Intermittent Steam Purge	Maximum Jacket Surface Temperature during Steam Purge & High Ambient 26.6˚C (80˚F)
						Watt/FT	@120v*	At -40°F (-40°C) will maintain at least freeze protection	Intermittent is 5 minutes steam purge per day	
IS- Single Process Tube - Seamless Stainless Steel, ASTM A269										
IS-B0849A-612A-V4	(1) 1/2"	0.049"	1.93	0.59	12	10	250 Ft / 40 Amp	4.4°C (40°F)	343°C (650°F)	60˚C (140˚F)
IS-B0849A-712A-V4	(1) 1/2"	0.049"	2.01	0.61	12	10	250 Ft / 40 Amp	4.4°C (40°F)	399°C (750°F)	60˚C (140˚F)
IS-B0849A-812A-V4	(1) 1/2"	0.049"	2.09	0.62	13	15	190 Ft / 40 Amp	4.4°C (40°F)	454°C (850°F)	60˚C (140˚F)
IS-B0849A-912A-V4	(1) 1/2"	0.049"	2.09	0.62	13	15	190 Ft / 40 Amp	4.4°C (40°F)	510°C (950°F)	60˚C (140˚F)
IS- Dual Process Tube - Seamless Stainless Steel, ASTM A269										
IS-B0849B-612A-V4	(2) 1/2"	0.049"	2.25	0.88	13	10	250 Ft / 40 Amp	4.4°C (40°F)	343°C (650°F)	60˚C (140˚F)
IS-B0849B-712A-V4	(2) 1/2"	0.049"	2.33	0.89	14	10	250 Ft / 40 Amp	4.4°C (40°F)	399°C (750°F)	60˚C (140˚F)
IS-B0849B-812A-V4	(2) 1/2"	0.049"	2.33	0.89	14	15	190 Ft / 40 Amp	4.4°C (40°F)	454°C (850°F)	60˚C (140˚F)
IS-B0849B-912A-V4	(2) 1/2"	0.049"	2.41	0.90	14	15	190 Ft / 40 Amp	4.4°C (40°F)	510°C (950°F)	60˚C (140˚F)

*Many other alloys available, as well as seamless stainless steel tubing. Product is also available in 208, 240 and 277V

** As ambient conditions go above -40°C (-40°F) , without use of a controller the product could maintain higher temperatures.

FM – Factory Mutual

General Purpose - Ordinary Locations
Hazardous Locations, when installed with Parflex accessories.

- Class I, Div. 2, Groups B, C and D (gases, vapors)
- Class II, Div.2, Group F, G (Combustible dust)
- Class III, Div.2, (ignitable fibers and filings)

T-Temperature Ratings

- 3, 5 and 8 watt rated T3 temperature class
- 10, 15 and 20 watt rated T2D temperature class

CSA – Canadian Standards Association
CSA Certified for ordinary locations
For certified hazardous locations contact Parflex

ATEX - Certified cables & accessories available

Electrical Specifications:

Operating Voltage:	120 V or 240V
Bus Wire Voltage Rating:	600 Volts
Bus Wire Size:	14 AWG

CS – Continuous Steam Purge Bundles for Freeze Protection

Freeze Protection Bundles Designed For Continuous High-Temperature Steam Purge Exposure

General Design

Parflex CS-Continuous Steam purge bundles are thermally insulated with a composite layer of fiberglass that allows for continuous high-temperature steam purge up to 593°C (1100°F) while at the same time ensuring freeze protection during winter using self-regulating heating cables.

Parflex CS-Continuous Steam purge bundles are properly insulated to meet customer specified jacket surface temperature requirements, during the highest steam purge conditions and maximum ambient requested. (See How-to-Order)

CS-Continuous Steam purge bundles are designed to provide a freeze protection temperature of 4.4°C (40°F) at the lowest specified ambient temperature.

Heating Cables

Cables are available in 120V and 208-277 volt, with Heat outputs of 5, 10, 15 and 20 watt/ft.

Parflex standard CS designs come with an internal tinned copper braid on heating cable for grounding purpose and a Fluoropolymer jacket over the heating cable to provide additional protection against many harsh environments.

Continuous Steam Purge

Internal bundle tubes can be steam purged for any duration required without effecting performance to the heating element. The outer jacket surface temperature can vary depending upon customer design specifications. (See How-to-Order)

Common Tube Materials and Sizes

Parflex CS-Continuous Steam products are readily available in single and double tube. The most common tube sizes requested being 3/8" and 1⁄2" Seamless Stainless Steel 316/316L/316H alloys in either an average wall specification ASTM A269 or minimum wall specification ASTM A213. Other alloys and standards are available.

We also have available many other sizes; including metric sizes 6 mm, 8mm, 10mm and 12mm. (See How-to-order)

Testing

All CS-Intermittent Steam products are pressure tested prior to shipment. Third party testing and witnessing is available upon request, including DNV, ABS and Lloyd's Register. Contact factory for complete details.

Jacketing Materials

Black UV resistant FR-PVC is our standard material, however other jacketing materials are available upon request, including non-halogenated FR-TPE and Urethanes. Color jackets are also available upon request. (See How-to-order)

How To Order

CS – Continuous Steam Purge Bundles for Freeze Protection

Freeze Protection Bundles Designed For Continuous High-Temperature Steam Purge Exposure

1	2	3	4	5	6
CS	B	08	49	B	5

1. Item

Continuous High Temperature Steam Purge	CS

2. Material

Smls Copper - DHP Alloy No 122. ASTM B68-B75	1
Welded Stainless Steel - 316/316L ASTM A269	2
Welded Stainless Steel - 304 ASTM A269	3
Smls 316/316L ASTM A269	B
Smls 304 ASTM A269	C
Smls Monel - 400	D
Smls Hastelloy C22	E
Smls 316H ASTM A213	H
Smls Incoloy 825	I
Electropolish Smls - 316/316L ASTM A269 (10Ra Max)	L
Smls 316/316L ASTM A213	M
Silco Smls 316/316L ASTM A269	S
PFA Flouropolymer	P
FEP Fluoropolymer	F
TFE Fluoropolymer	T
Parflex 919 PTFE SS Braided Hose	7
Customer Specified Material	9

3. Tube Size OD

1/8”	02
3/16”	03
1/4”	04
5/16”	05
3/8”	06
7/16”	07
1/2”	08
5/8”	10
3/4”	12
1”	16
2mm	MA
4mm	MB
6mm	MC
8mm	MD
10mm	ME
12mm	MF
14mm	MG
16mm	MH

4. Tube Size Wall Thickness

0.16”	16
0.20”	20
0.28”	28
0.30”	30
0.31”	31
0.32”	32
0.35”	35
0.40”	40
0.47”	47
0.49”	49
0.50”	50
0.62”	62
0.65”	65
0.83”	83
89mm	89
1mm	10
1.5mm	15
2.0mm	20
2.5mm	25

5. Number

1Tube	A
2 Tubes	B
3 Tubes Etc	C
2 TubeParallel Design	P

6. Max Steam Purge Temp

538°C (1000°F)	1
288°C (550°F)	5
343°C (650°F)	6
399°C (750°F)	7
454°C (850°F)	8
Other	9
593°C (1100°F)	D

Note: For steam purges 204°C (400˚F) or less use Parker SL or SH Bundle Series. For temperatures above 593°C (1100˚F) contact factory.

7. Heating Cable Voltage

120VAC	1
240VAC	2

* 240 volt cables can be powered at 208, 240 or 277 volts

8. Area Classification

Class I, Division 1 Areas	1
General Purpose/ Class I, Division 2 Areas	2

9. Avgerage Enrinoment Ambient Condition Range

Low/High	
4°C/26°C	A
-6°C/35°C	B
-17°C/40°C	C
-12°C/46°C	D

10. Jacket Material

FR-PVC	V
FR-TPE	T
FR-PUR	U
PUR	P
TPR	R
FRPE	E
LDPE	L
PVDF	F

Note: Parflex standard jacket material is FR-PVC

11. Maximum Jacket Surface Temp Design

60°C Jacket	4

60°C meets NEC 427.12 for personnel protection

12. Jacket Colour

Black	N
Blue	B
Green	G
Orange	O
Yellow	Y
Purple	P
Red	R
White	W

Note: Parflex standard colour jacket is black

7	8	9	10	11	12
1	2	C	V	4	B

Part Number	Process Tube O.D. (in.)	Wall Thick-ness (in.)	Nominal Product O.D. (in.)	Product Weight (lbs./ft.)	Min. Bend Radius (in.)	Watt Density per foot/ Voltage	Circuit Length Ft @ 50°F Start-up / Breaker (amps), 120V	Performance At Low Ambient Conditions	Maximum Allowable Continous Steam Purge	Max. Jacket Surface Temp. during Steam Purge & High Ambient 26.6°C (80°F)
						Watt/FT	@ 120V*	At -40°F (-40°C) will maintain at least freeze protection	Continuous Steam Purge	
CS — Continuous Steam Purge — Single Process Tube Seamless Stainless Steel, ASTM A269										
CS-B0849A-612A-V8N	(1) 1/2"	0.049"	1.61	0.55	10	10	250 Ft. / 40 Amp	4.4°C (40°F)	343°C (650°F)	82°C (180°F)
CS-B0849A-712A-V8N	(1) 1/2"	0.049"	1.85	0.59	11	10	250 Ft. / 40 Amp	4.4°C (40°F)	399°C (750°F)	82°C (180°F)
CS-B0849A-812A-V8N	(1) 1/2"	0.049"	2.01	0.61	12	15	190 Ft. / 40 Amp	4.4°C (40°F)	454°C (850°F)	82°C (180°F)
CS-B0849A-912A-V8N	(1) 1/2"	0.049"	2.17	0.63	13	15	190 Ft. / 40 Amp	4.4°C (40°F)	510°C (950°F)	82°C (180°F)
CS — Continuous Steam Purge — Dual Process Tube Seamless Stainless Steel, ASTM A269										
CS-B0849B-612A-V8N	(2) 1/2"	0.049"	2.09	0.86	13	10	250 Ft. / 40 Amp	4.4°C (40°F)	343°C (650°F)	82°C (180°F)
CS-B0849B-712A-V8N	(2) 1/2"	0.049"	2.25	0.88	13	10	250 Ft. / 40 Amp	4.4°C (40°F)	399°C (750°F)	82°C (180°F)
CS-B0849B-812A-V8N	(2) 1/2"	0.049"	2.49	0.92	15	15	190 Ft. / 40 Amp	4.4°C (40°F)	454°C (850°F)	82°C (180°F)
CS-B0849B-912A-V8N	(2) 1/2"	0.049"	2.69	1.04	16	15	190 Ft. / 40 Amp	4.4°C (40°F)	510°C (950°F)	82°C (180°F)

*Many other alloys available, as well as seamless stainless steel tubing. Product is also available in 208, 240 and 277V

** As ambient conditions go above -40°C (-40°F) , without use of a controller the product could maintain higher temperatures.

FM – Factory Mutual

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Notes

Additional Products Available

Fittings & Materials (Catalogue 4190-FMTG)

- A complete guide to Parker's instrumentation tube fittings, tubing and materials. Including tubing charts, anti corrosion information together with a comprehensive guide to the complete range of fittings

Parker Grade Tube (Catalogue 4190-FMTG)

- Parker's Instrument tube fittings have been engineered and manufactured to consistently provide high levels of reliability, no systems integrity is complete without considering the critical link, tubing.

Parker Gauges

- 6Mo tube ended gauge option
- OD connection for dual-ring compression fitting
- Class 1 according to EN 837-1
- Lloyds Register Approval

MESC Compliant Modular Mounting Systems (Catalogue 4190-MESC)

- This catalogue details design innovation - based around Shell's MESC standardisation system - that Parker believes will save significant engineering and installation time and costs for users of process fluid instrumentation.

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