

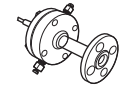
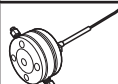
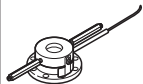
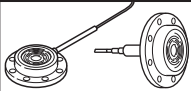
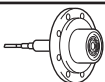
Technical Information

Diaphragm Seal System

DPharp

This TI outlines the capability of standard Yokogawa diaphragm seals, which when combined with a pressure transmitter will form a Diaphragm Seal System (DSS). The detailed specification and ordering information of the DSS will be verified by Yokogawa.

Diaphragm Seals

Process Connection	Seal Type	Description		Page Nos
½" to 1"	Inner Diaphragm Seal with Capillary Connection to Transmitter	Flange (RF, RJ, high temp [HT] & high vacuum [HV])		2 & 3
		Adapter (RF, RJ, HT & HV)		4 & 5
1 ½"	Flush Diaphragm Seal	Direct Mount (RF)		6
		Capillary Connection (RF, HT & HV)		
2" to 3"	Flush Diaphragm Seal	Direct Mount (RF)		7
		Capillary Connection (RF, RJ, HT & HV)		7 & 8
3" to 4"	Extended Diaphragm Seal	Direct Mount (RF)		9
		Capillary Connection (RF, HT & HV)		

Fill Fluids

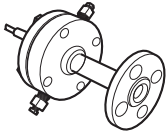
Connection to Transmitter	Page No.
Direct Mount	10
Capillary Connection	11

Accessories

Name	Page No.
Flushing Connection Ring	12

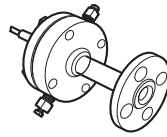
Detailed Information

Name	Page No.
List of General Specifications (GS)	12

Inner Diaphragm Type (C8□FD)	Application
	General Purpose Capillary Connection (Back of Diaphragm) RF Flange

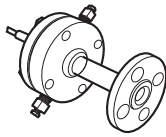
Specification		Options
Process Connection	Size	½" (15mm), ¾" (20mm) or 1" (25mm)
Flange	Standards	JIS, ANSI or JPI
	Maximum ratings	Class 600 or 40K
	Materials	316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	15m

See page 52 to 53 of GS 01C25W01-01EN for more detailed information

Inner Diaphragm Type (C8□FD)	Application
	General Purpose Capillary Connection (Back of Diaphragm) RJ Flange

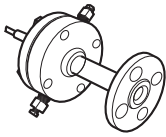
Specification		Options
Process Connection	Size	½" (15mm), ¾" (20mm) or 1" (25mm)
Flange	Standards	ANSI or JPI
	Maximum ratings	Class 600
	Materials	316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	15m

See page 54 to 55 of GS 01C25W01-01EN for more detailed information

Inner Diaphragm Type (C8□FD)	Application
	Extreme Service (HT + HV or HV) Capillary Connection (Back of Diaphragm) RF Flange

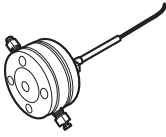
Specification		Options
Process Connection	Size	½" (15mm), ¾" (20mm) or 1" (25mm)
Flange	Standards	JIS, ANSI or JPI
	Maximum ratings	Class 600 or 40K
	Materials	316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	10m

See page 60 to 61 of GS 01C25W01-01EN for more detailed information

Inner Diaphragm Type (C8□FD)	Application
	Extreme Service (HT + HV or HV) Capillary Connection (Back of Diaphragm) RJ Flange

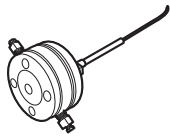
Specification		Options
Process Connection	Size	½" (15mm), ¾" (20mm) or 1" (25mm)
Flange	Standards	ANSI or JPI
	Maximum ratings	Class 600
	Materials	316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	10m

See page 62 to 63 of GS 01C25W01-01EN for more detailed information

Inner Diaphragm Type (C8□FA)	Application
	General Purpose Capillary Connection (Back of Diaphragm) RF Flange

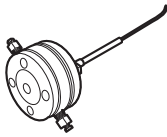
Specification		Options
Process Connection	Size	½" (15mm), ¾" (20mm) or 1" (25mm)
Flange	Standards	JIS, ANSI or JPI
	Maximum ratings	Class 600 or 40K
	Materials	316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	15m

See page 47 to 48 of GS 01C25W01-01EN for more detailed information

Inner Diaphragm Type (C8□FA)	Application
	General Purpose Capillary Connection (Back of Diaphragm) RJ Flange

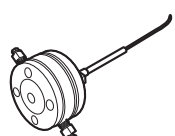
Specification		Options
Process Connection	Size	½" (15mm), ¾" (20mm) or 1" (25mm)
Flange	Standards	ANSI or JPI
	Maximum ratings	Class 600
	Materials	316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	15m

See page 50 to 51 of GS 01C25W01-01EN for more detailed information

Inner Diaphragm Type (C8□FA)	Application
	Extreme Service (HT + HV or HV) Capillary Connection (Back of Diaphragm) RF Flange

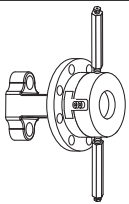
Specification		Options
Process Connection	Size	½" (15mm), ¾" (20mm) or 1" (25mm)
Flange	Standards	JIS, ANSI or JPI
	Maximum ratings	Class 600 or 40K
	Materials	316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	10m

See page 56 to 57 of GS 01C25W01-01EN for more detailed information

Inner Diaphragm Type (C8□FA)	Application
	Extreme Service (HT + HV or HV) Capillary Connection (Back of Diaphragm) RJ Flange

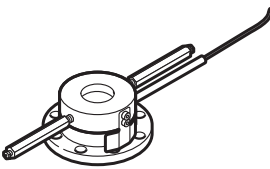
Specification		Options
Process Connection	Size	½" (15mm), ¾" (20mm) or 1" (25mm)
Flange	Standards	ANSI or JPI
	Maximum ratings	Class 600
	Materials	316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	10m

See page 58 to 59 of GS 01C25W01-01EN for more detailed information

Flanged Flush Type (C20FW)	Application
	General Purpose Direct Mount RF Flange

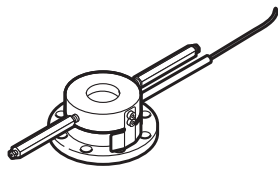
Specification		Options
Process Connection	Size	1 1/2" (40mm)
Flange	Standards	JIS, ANSI or JPI
	Maximum ratings	Class 600 or 40K
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Materials	316L SST or Hastelloy C-276

See page 66 to 67 of GS 01C25W01-01EN for more detailed information

Flanged Flush Type (C80FW)	Application
	General Purpose Capillary Connection (Side of Diaphragm) RF Flange

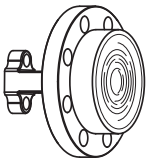
Specification		Options
Process Connection	Size	40A (1 1/2 B)
Flange	Standards	JIS, ANSI or JPI
	Maximum ratings	Class 600 or 63K
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Materials	316L SST or Hastelloy C-276
Capillary	Maximum length	15m

See page 37 to 38 of GS 01C25W01-01EN for more detailed information

Flanged Flush Type (C80FW)	Application
	Extreme Service (HT + HV or HV) Capillary Connection (Side of Diaphragm) RJ Flange

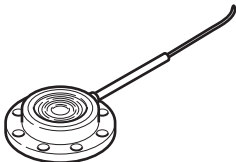
Specification		Options
Process Connection	Size	40A (1 1/2 B)
Flange	Standards	JIS, ANSI or JPI
	Maximum ratings	Class 600 or 63K
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Materials	316L SST or Hastelloy C-276
Capillary	Maximum length	10m

See page 39 to 40 of GS 01C25W01-01EN for more detailed information

Flanged Flush Type (C20FW)	Application
	General Purpose Direct Mount RF Flange

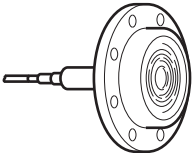
Specification		Options
Process Connection	Sizes	2" (50mm) or 3" (80mm)
Flange	Standards	JIS, ANSI, JPI or DIN
	Maximum ratings	Class 600, 40K or PN40
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Material	316L SST, Hastelloy C-276, Tantalum, Titanium, Monel or Nickel

See page 64 to 65 of GS 01C25W01-01EN for more detailed information

Flanged Flush Type (C80FW)	Application
	General Purpose Capillary Connection (Side of Diaphragm) RF Flange

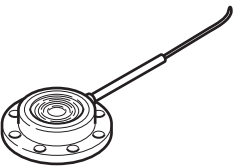
Specification		Options
Process Connection	Sizes	2" (50mm) or 3" (80mm)
Flange	Standards	JIS, ANSI, JPI or DIN
	Maximum ratings	Class 1500, 63K or PN64
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276, Tantalum, Titanium, Monel or Nickel
Capillary	Maximum length	15m

See page 28 to 29 of GS 01C25W01-01EN for more detailed information

Flanged Flush Type (C80FW)	Application
	General Purpose Capillary Connection (Back of Diaphragm) RF Flange

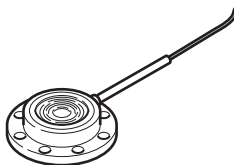
Specification		Options
Process Connection	Sizes	2" (50mm) or 3" (80mm)
Flange	Standards	JIS, ANSI or JPI
	Maximum ratings	Class 600 or 63K
	Materials	304 SST or 316 SST
Diaphragm	Material	316L SST
Capillary	Maximum length	15m

See page 31 to 32 of GS 01C25W01-01EN for more detailed information

Flanged Flush Type (C80FW)	Application
	General Purpose Capillary Connection (Side of Diaphragm) RJ Flange

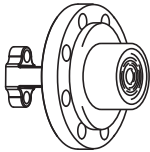
Specification		Options
Process Connection	Sizes	2" (50mm) or 3" (80mm)
Flange	Standards	ANSI or JPI
	Maximum ratings	Class 1500
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Material	316L SST or Hastelloy C-276
Capillary	Maximum length	15m

See page 33 to 34 of GS 01C25W01-01EN for more detailed information

Application	Flanged Flush Type (C80FW)
	Extreme Service (HT + HV or HV) Capillary Connection (Side of Diaphragm) RF Flange

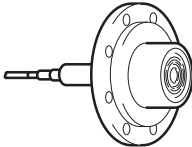
Specification		Options
Process Connection	Sizes	2" (50mm) or 3" (80mm)
Flange	Standards	JIS, ANSI, JPI or DIN
	Maximum ratings	Class 1500, 63K or PN64
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
Capillary	Maximum length	10m

See page 35 to 36 of GS 01C25W01-01EN for more detailed information

Flanged Extended Type (C20FE)	Application
	General Purpose Direct Mount RF Flange

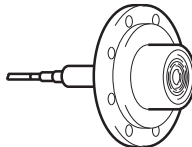
Specification		Options
Process Connection	Sizes	3" (80mm) or 4" (100mm)
Flange	Standards	JIS, ANSI, JPI or DIN
	Maximum ratings	Class 600, 40K or PN40
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Material	316L SST, Hastelloy C-276 or Tantalum
	Extension lengths	2" (50mm), 4" (100mm), 6" (150mm) or 8" (200mm)

See page 68 to 69 of GS 01C25W01-01EN for more detailed information

Flanged Extended Type (C80FE)	Application
	General Purpose Capillary Connection (Back of Diaphragm) RF Flange

Specification		Options
Process Connection	Sizes	3" (80mm) or 4" (100mm)
Flange	Standards	JIS, ANSI, JPI or DIN
	Maximum ratings	Class 1500, 40K or PN40
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Materials	316L SST, Hastelloy C-276 or Tantalum
	Extension lengths	2" (50mm), 4" (100mm), 6" (150mm) or 8" (200mm)
Capillary	Maximum length	15m

See page 41 to 42 of GS 01C25W01-01EN for more detailed information

Flanged Flush Type (C80FE)	Application
	Extreme Service (HT + HV or HV) Capillary Connection (Back of Diaphragm) RF Flange

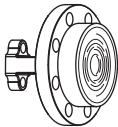
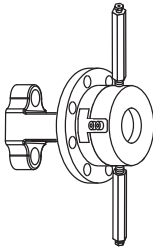
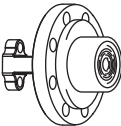
Specification		Options
Process Connection	Sizes	3" (80mm) or 4" (100mm)
Flange	Standards	JIS, ANSI, JPI or DIN
	Maximum ratings	Class 1500, 40K or PN40
	Materials	JIS S25C, 304 SST, 316 SST or 316L SST
Diaphragm	Material	316L SST, Hastelloy C-276 or Tantalum
	Extension lengths	2" (50mm), 4" (100mm), 6" (150mm) or 8" (200mm)
Capillary	Maximum length	10m

See page 44 to 45 of GS 01C25W01-01EN for more detailed information

Fill Fluids for Direct Mount

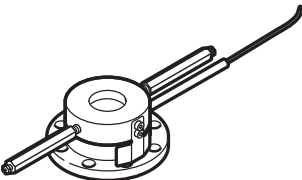
Standard Applications

	Code	Process temperature	Ambient temperature	Working pressure	Specific gravity
Silicone oil (general use)	A	-10 to 315°C (14 to 599°F)	-10 to 60°C (14 to 140°F)	2.7 kPa abs (0.38 psi abs) to flange rating pressure	1.07
Silicone oil (general use)	B	-40 to 210°C (-40 to 410°F)	-30 to 60°C (-22 to 140°F)		0.94
Silicone oil (general use)	G	-40 to 210°C (-40 to 410°F)	-30 to 60°C (-22 to 140°F)		0.94
Silicone oil (low temperature use)	F	-70 to 100°C (-94 to 212°F)	-30 to 60°C (-22 to 140°F)	100 kPa abs (atmospheric pressure) to flange pressure rating	0.88
Fluorinated oil (oil-prohibited use)	D	-20 to 120°C (-4 to 248°F)	-10 to 60°C (14 to 140°F)	51 kPa abs (7.4 psi abs) to flange rating pressure	1.90 to 1.92
Ethylene glycol (low temperature use)	E	-50 to 100°C (-58 to 212°F)	-40 to 60°C (-40 to 140°F)	100 kPa abs (atmospheric pressure) to flange pressure rating	1.09
Propylene glycol	P	-10 to 120°C (14 to 248°F)	-10 to 60°C (14 to 140°F)		1.04

		
C20FW	C20FW	C20FE

Extreme Service (HT + HV or HV)

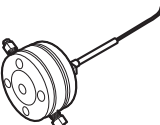
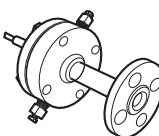
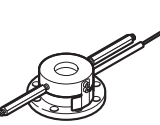
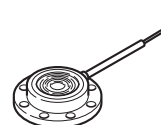
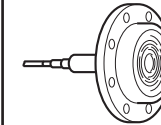
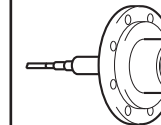
	Code	Process temperature	Ambient temperature	Working pressure	Specific gravity
Silicone oil (high temp. and high vacuum use)	1	-10 to 250°C (14 to 482°F)	-10 to 50°C (14 to 122°F)	0.013 kPa abs (0.0019 psi abs) to flange rating pressure	1.07
Silicone oil (high vacuum use)	4	-10 to 100°C (14 to 212°F)	-10 to 50°C (14 to 122°F)		1.07

• High temperature and vacuum • Vacuum	
	C80FW

Fill Fluids for Capillary Connection

Standard Applications

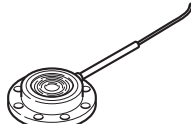
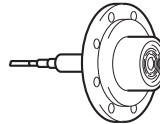
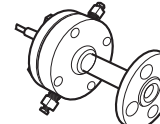
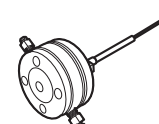
	Code	Process temperature	Ambient temperature	Working pressure	Specific gravity
Silicone oil (general use)	A	-10 to 315°C (14 to 599°F)	-10 to 85°C (14 to 185°F)	2.7 kPa abs (0.38 psi abs) to flange rating pressure	1.07
Silicone oil (general use)	G	-40 to 210°C (-40 to 410°F)	-40 to 85°C (-40 to 185°F)		0.94
Silicone oil (low temperature use)	F	-70 to 100°C (-94 to 212°F)	-40 to 85°C (-40 to 185°F)	100 kPa abs (atmospheric pressure) to flange pressure rating	0.88
Fluorinated oil (oil-prohibited use)	D	-20 to 120°C (-4 to 248°F)	-20 to 80°C (-4 to 176°F)	51 kPa abs (7.4 psi abs) to flange rating pressure	1.90 to 1.92
Ethylene glycol (low temperature use)	E	-50 to 100°C (-58 to 212°F)	-40 to 85°C (-40 to 185°F)	100 kPa abs (atmospheric pressure) to flange pressure rating	1.09
Propylene glycol	P	-10 to 120°C (14 to 248°F)	-10 to 85°C (14 to 185°F)		1.04

					
C8-FA	C8-FD	C80FW	C80FW	C80FW	C80FE

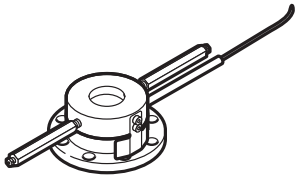
Extreme Service

	Code	Process temperature	Ambient temperature	Working pressure	Specific gravity
Extreme Service Silicone oil (high temp. and high vacuum use)	1	-10 to 250°C (14 to 482°F)	-10 to 60°C (14 to 140°F)	0.013 kPa abs (0.0019 psi abs) to flange rating pressure	1.07
Silicone oil (high temp. and high vacuum use)	2	10 to 315°C (50 to 599°F)	10 to 60°C (50 to 140°F)		1.09
Silicone oil (high vacuum use)	4	-10 to 100°C (14 to 212°F)	-10 to 60°C (14 to 140°F)		1.07

- High temperature and vacuum
- Vacuum

			
C80FW	C80FE	C8-FD	C8-FA

Accessories

Flushing Connection Ring (C10FR)	Application
	General RF or RJ Flange

Specification		Options
Process Connection	Sizes	1 1/2" (40mm), 2" (50mm) or 3" (80mm)
Flange	Standards (RF or RJ)	JIS, ANSI, JPI or DIN
	Maximum ratings	1500, 63K or PN64
	Materials	316 SST, 316L SST or Hastelloy C-276

See page 85 to 86 of GS 01C25W01-01EN for more detailed information

Further Technical Information

Description	Model(s)	GS No.
Diaphragm Seal Systems	C80□F□, C20F□ & C20F□	GS 01C25W01-01EN
Differential pressure transmitter	EJX110A	GS 01C25B01-01EN
	EJA110E	GS 01C31B01-01EN
Gauge pressure transmitter	EJX430A	GS 01C25E01-01EN
	EJA430E	GS 01C31E01-01EN
	EJX530A	GS 01C25F01-01EN
	EJA530E	GS 01C31F01-01EN
Absolute pressure transmitter	EJX310A	GS 01C25D01-01EN
	EJA310E	GS 01C31D01-01EN
Digital remote sensors	EJXC40A	GS 01C25W05-01EN

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