tekPD- 0 Oval Gear Positive Displacement Flow Sensors

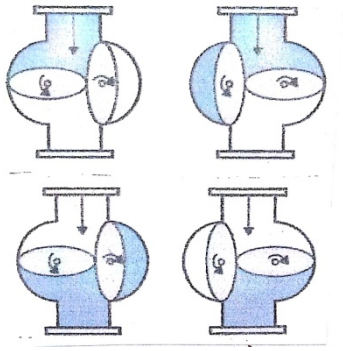
tekflo's tekPD - 0 range of oval gear positive displacement flow sensors provides an intuitive platform synonymous with the highest possible performance available for these type of flow sensors. Commonly known as PD meters, **TekPD - 0** sensors are suitable for sizes 6 – 200mm (1/4" – 8") on clean liquids with viscosities from 0.3 to 20,000 mPa.s (centiPoise). They are mostly used for oil or fuel flow applications, with flow ranges covering 0.03 to 340 m3/h (0.13 – 1500 gpm).

tekPD - 0 sensors are manufactured under strict and certified ISO 9001 conditions. They are calibrated in tekflo's modern facility in Singapore and all traceable to USA National Instiitute of Standards and Technology (NIST). tekflo's facility is also approved by Singapore's Government SPSB Institution (Singapore Productivity Standard Board), which in turn is traceable German TUV and their world-wide TUV institutes. Calibration is accomplished on water or an appropriate viscosity oil,

tekPD- O Oval Gear Meters Specification

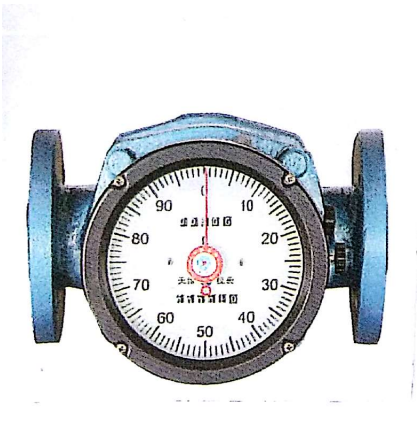
Oval Gear Meters consists of two oval shaped, intermeshing gear wheels, which rotate with high precision within an outer body. The **tekPD-O** has a particularly high precision positive intermeshing action. This prevents leakage between the two gears. The pressure drop accompanied by the flowing media provides the necessary torque to rotate the oval gears, which in turn carries the media in proportioned flows of precisely known volumes through the flow meter.

Accuracy: ± 0.2% of reading (o.r.) over 5 : 1 range
± 0.5% of reading. over 10 : 1 range
Accuracy is sensor size and viscosity dependent. See Flow Range table.
Viscosity range: 0.3 to 2000 mPa.s (centiPoise)
Pressure options: 10, 16, 25, 40, 63 bar g
87, 145, 232, 362, 580, 913 psig
Temperature range: -20º to +60º C, -40º to +60º C, +60º to +200º C
-4º to +140º F, -40º to +140ºC, +140º to 392ºF
Connections: ANSI 150/300, JIS 10 – 64k, DIN PN10 – 64
Sizes: 6 – 200mm (1/4" – 8")
Flow ranges: 0.03 – 340 m3/h (0.13 – 1500 gpm) size and viscosity dependent
Wetted materials: cast iron, 316L stainless steel, cast steel, bronze
Integral display: flow totals and instantaneous flow rate
Transmission: optional 4 – 20mA and scaled pulse output
Rated 12V or 24 Vdc
Flameproof option : certified to Ex d II T4
Straight pipe runs: no straight pipe runs are necessary
European EMC: meets European EMC Conformity Standards EN 61326
European PED: meets Pressure Equipment Directive – Sound Engineering Practice



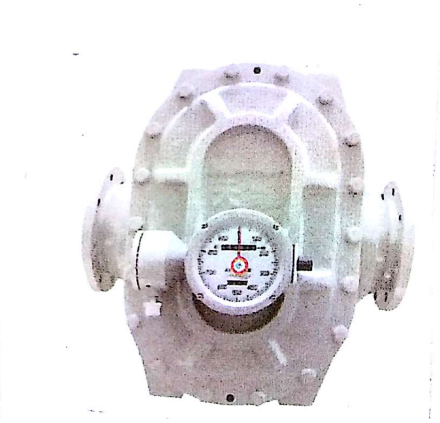
tekPD – 0 Schematic

CE



TekPD – O Type Size S
Sizes 10 – 40mm
½" – 1 ½"

TekPD – O Type Size M
Sizes 50 – 100mm
2" – 4"



TekPD – O Type Size L
Sizes 150 – 200mm
6" – 8"

TekPD – O Type X
Marine Service
10 – 200mm (½" – 12")
Programmable LCD Display

TekPD – O Type Y
High Temperature Service
10 – 200mm (1/2" – 8")
20º to + 280º C (+4º to + 536º F)

TekPD – O Type V
Micro Flow PD Sensor
6 – 8 mm / 0.25" – 0.32"}
Programmable LCD Disp

tekPD – O – S, M, L, X, Y Flow Ranges with < ± 0.2% of Reading Accuracy

Nom. Size mm	ins.	Flow Units	Media Viscosity mPa.s (centiPoise) < 0.3	0.3 – 0.8	0.8 - 2	2 - 200	200 – 1000	1000 – 20000
10	½”	m3h	-	-	-	0.08-0.5	0.06-0.3	-
		gpm				0.35–2.2	0.26–1.3	
15	5/8”	m3/h	-	-	-	0.3–1.5	0.2– 1.0	-
		gpm				1.3- 6.6	0.9- 4.4	
20	¾”	m3/h	-	-	1.0–3.0	0.5–3.0	0.4–2.1	-
		gpm			4.4 -1.3	2.2–13	1.8 - 9.3	
25	1”	m3/h	4.0–6.0	-	2.0–6.0	1.0–6.0	0.8– 4.2	-
		gpm	18–26		8.8–26	4.4– 6	3.5–19	
40	1 ½”	m3/h	9.0–15	-	5.0– 5	2.5–15	2.1-10.5	-
		gpm	40- 66		22- 66	11- 66	9.2- 46	
50	2”	m3/h	10–24	-	8.0- 24	4.8–24	2.4–16.8	-
		gpm	44105		35-106	21–105	11 - 74	
40/50*		m3/h	8.0–20	-	6.0–20	4.0–20	2.8–14	-
1 ½”/2”		gpm	35– 8.0		26-88	18–88	12- 62	
65	2 ½”	m3/h	27–40	-	15- 40	8.0–40	5.6–28	-
		gpm	119-176		66–176	35–175	25-123	
80	3”	m3/h	40–60	-	20-60	12–60	8.4-12	-
		gpm	176–264		88–264	53–264	37-53	
100	4”	m3/h	64–100	-	34–100	20–100	14–70	-
		gpm	282–440		150–440	88–440	62-308	
150	6”	m3/h	127–190	-	64–190	38–190	27–133	-
		gpm	559–837		282–837	167-837	119-586	
200	8”	m3/h	227- 340	-	114–340	56–340	48-238	-
		gpm	1000-1498	-	502–1500	247-1500	212-1048	

Note* Only type **tekPD – O option B** sizes 40/50mm (1 ½” / 2”) stainless steel sensors available in these flow rates.

tekPD – O – S, M, L, X, Y Flow Ranges with < ± 0.5% of Reading Accuracy

Nom. Size mm	ins.	Flow Units	Media Viscosity mPa.s (centiPoise) < 0.3	0.3 – 0.8	0.8 - 2	2 - 200	200 – 1000	1000 – 20000
10	½”	m3h	-	0.2-0.5	0.08-0.5	0.05-0.5	0.03-0.3	0.03-0.2
		gpm		0.9-2.2	0.35-2.2	0.22-2.2	0.13-1.3	0.13-0.88
15	5/8”	m3/h	-	0.75-1.5	0.3-1.5	0.15-1.5	0.1-1.5	0.07-75
		gpm		3.3-6.6	1.3-6.6	0.66-6.6	0.44-6.6	0.31-330
20	¾”	m3/h	-	1.5-3.0	0.5 3.0	0.3-3.0	1.2-2.1	0.15-1.5
		gpm		6.6-13	2.2-13	1.3-13	5.3-9.3	0.66-6.6
25	1”	m3/h	-	3.0-6.0	1.0-6.0	0.6-6.0	0.4-4.2	0.3-3.0
		gpm		13-26	4.4-26	2.6-26	1.8-18.5	1.3-13
40	1 ½”	m3/h	-	7.5-15	2.5-15	1.5-15	1.0-10.5	0.7-7.5
		gpm		33-66	11-66	6.6-66	4.4-46	3.1-33
50	2”	m3/h	-	8.0-24	4.8-24	2.4-24	1.6-16.8	1.2-12
		gpm		35-106	21-106	11-106	7.0-74	5.3-53
40/50*		m3/h	-	6.0-20	4.0-20	2.0-20	1.4-14	1.0-10
1 ½”/2”		gpm		26-88	18-88	9.0-88	6.2-62	4.4-44
65	2 ½”	m3/h	-	20-40	8.0-40	4.0-40	2.8-28	2.0-20
		gpm		88-176	35-176	18-176	12-123	8.8-88
80	3”	m3/h	-	30-60	12-60	6.0-60	4.2-42	3.0-30
		gpm		132-264	53-264	26-260	18-180	13-130
100	4”	m3/h	-	50-100	20-100	10-100	6.0-70	5.0-50
		gpm		220-440	88-440	44-440	26-308	22-220
150	6”	m3/h	-	95-190	38-190	19-190	13.3-133	9.5-95
		gpm		419-837	167-837	84-840	59-590	41-410
200	8”	m3/h	-	170-340	56-340	34-340	23.8-238	17-170
		gpm		750-1500	250-1500	150-1500	105-1050	75-750

Note* Only type **TekPD – O option B** sizes 40/50mm (1 ½” / 2”) stainless steel sensors available in these flow rates.

tekPD – O – V Micro Flow Ranges with < ± 0.5% of Reading Accuracy

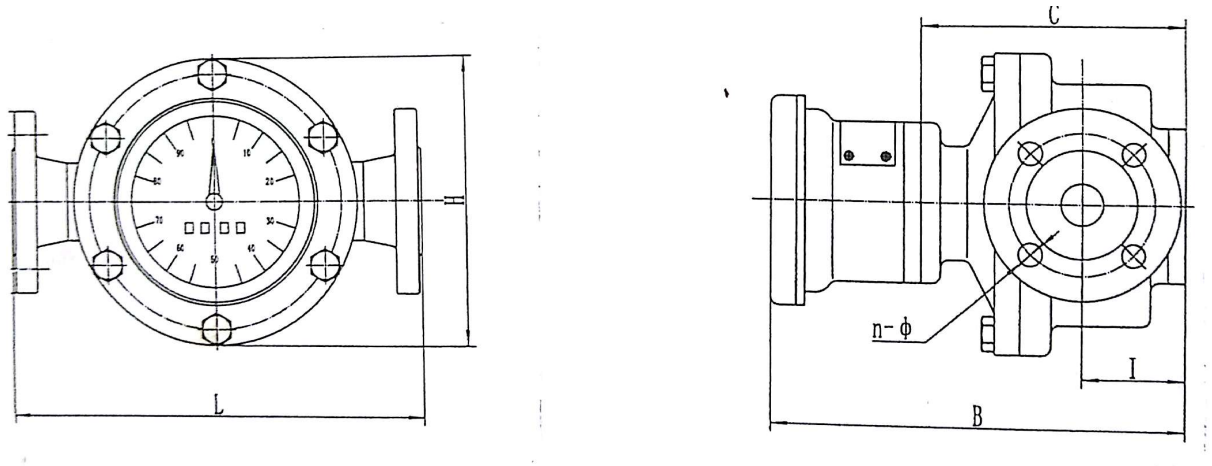
The **tekPD – O - V** has an all AISI316 stainless steel construction with programmable LCD display of litres/pulse, 4-20mA outputs, as well as display of rate of flow and totals.

Nom. Size mm	ins.	Viscosity mPa.s (centipoise 2 - 200	Approx Weight kg	lbs
6	¼"	2 – 30 litres per hour 0.53 – 8.0 gallons per hour	6	13
8	5/16"	20 – 500 litres per hour 5.3 – 130 gallons per hour	6	13
Flanges are DN10 PN 10 or PN 16, JIS10k or 16k or ½" ANSI 150 Max pressure: 16 bar g (232 psig) Temperature range: - 20º to + 100º C (-4º to + 212º F)				

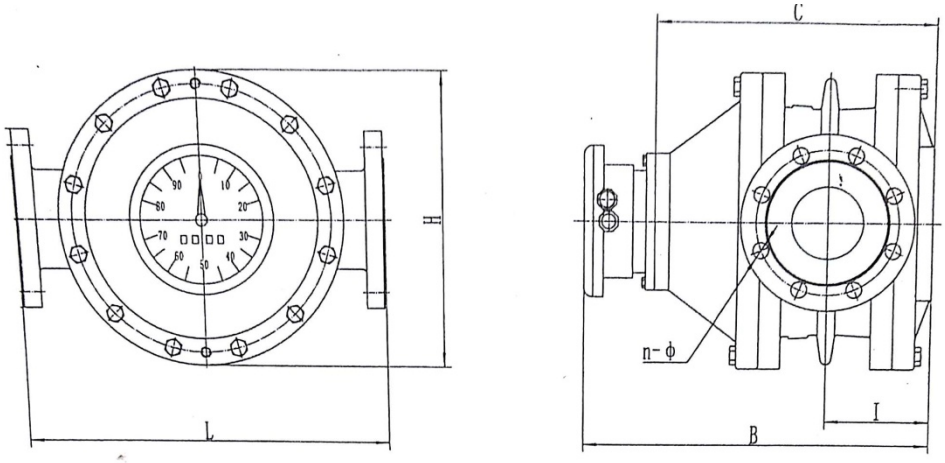
tekPD – O Wetted Parts Materials, Temperature Ranges and Maximum Pressure

Order Code	Wetted Parts	Temperature Range ° C	° F	Maximum Pressure bar g	psig
A	cast iron	- 20º to + 60ºC Optional + 200º C	- 4º to + 140º F Optional + 392º F	16	232
B	316 stainless steel	- 20º to + 60ºC Optional + 200º C	- 4º to + 140º F Optional t + 392º F	16 or 25	232 or 362
C	cast steel	- 20º to + 60ºC Optional + 200º C	- 4º to + 140º F Optional + 392º F	50mm (2") 80mm (3") 100mm (4'') 150mm (6") 200mm (8")	63 bar g 913 psig 40 bar g 579 psig 40 bar g 579 psig 25 bar g 362 psig 25 bar g 362 psig
tekPD – O – Y	cast steel 316 stainless steel	-20º to +280º C	- 4º to + 536º F	16, 25, 40, 64 16	232, 362, 579, 928 232

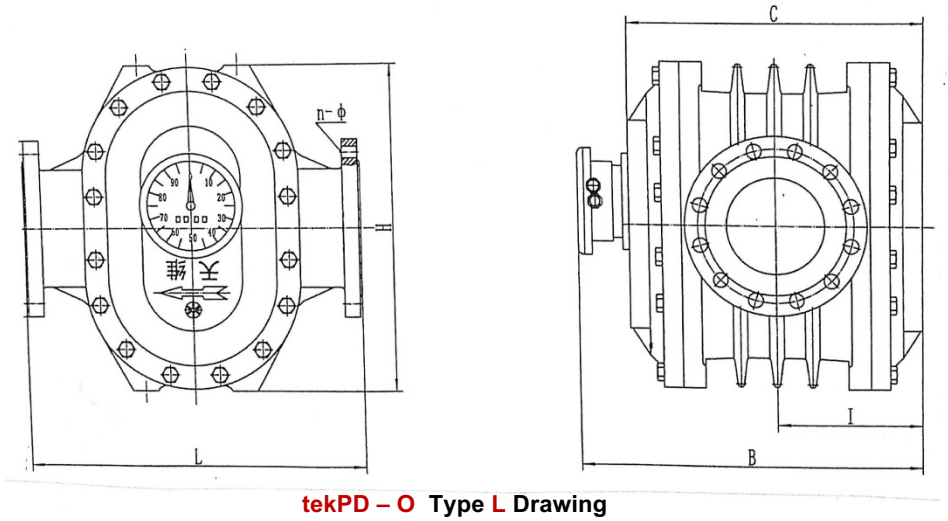
tekPD – 0 Types S, M, L Dimensions and Weights



tekPD – 0 – Type S Size Drawing



tekPD – O Type Size M Drawing

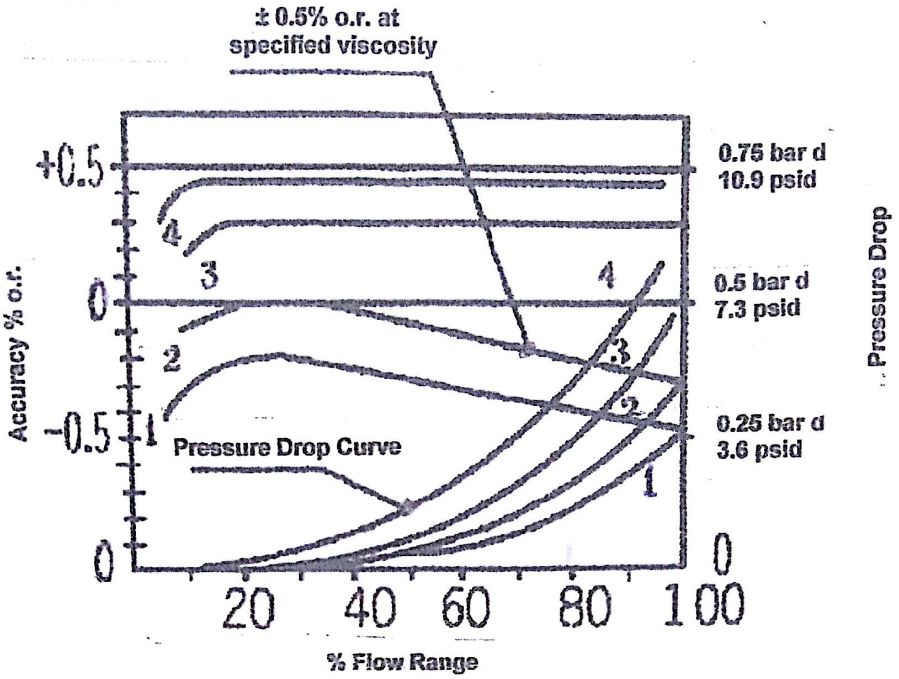


tekPD – O Type L Drawing

Dimensions for tekPD – 0 – S, M, L

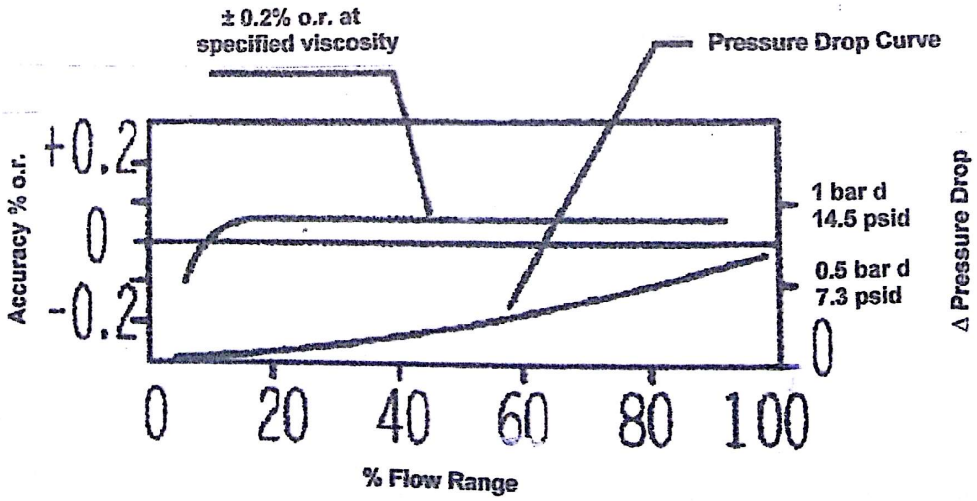
Nom. Size mm	ins.	Dimensions L mm	L ins	H mm	H ins	B mm	B ins	C mm	C ins	I mm	I ins	Approx. Weights kg	lbs
10	½”	150	5.91	100	3.94	209	8.23	121	4.76	29	1.14	6	13
15	5/8”	170	6.69	118	4.65	226	8.90	147	5.79	48	1.89	8	18
20	¾”	200	7.87	150	5.91	238	9.37	155	6.10	53	2.09	11	24
25	1”	260	10.2	180	7.09	246	9.69	164	6.46	60	2.36	18	40
40	1 ½”	300	11.8	180	7.09	271	10.7	190	7.48	77	3.03	20	44
50	2”	340	13.4	250	9.84	379	14.9	249	9.80	88	3.46	46	101
65	2 ½”	380	15.0	288	11.3	410	16.1	280	11.0	103	4.06	67	147
80	3”	420	16.5	325	12.8	441	17.4	311	12.2	118	4.65	87	191
100	4”	515	20.3	418	16.5	467	18.4	337	13.3	131	5.16	160	352
150	6”	540	21.3	515	20.2	565	22.2	435	17.1	210	8.27	245	539
200	8”	650	25.6	650	25.6	624	24.6	494	19.5	247	9.72	400	880

Accuracy and Pressure Drop Curves



Curve 1: 0.7 mPa.s (*centiPoise*)
Curve 2: 1.0 mPa.s (centiPoise)
Curve 3: 5.0 mPa.s (centiPoise)
Curve 4: 20 mPa.s (centiPoise)

0.5% o. r. Accuracy and Pressure Drops at Various Viscosities



0.2% o. r. Accuracy and Pressure Drop at Any Specified Viscosity

tekPD – 0 Ordering Code

Example: **tekPD – 0 – 080M – D – 0.2 – 12-60m3/h – A – 01 – B – 2 - F**

Basic Type:

Nominal Size mm and Body Design:
006 = 6mm / ¼" (**TekPD - O – V**)
080 = 80mm / 3" (**TekPD – O – S, M, X, Y**)
200 = 200mm /8" (**TekPD – O –L, X, Y**)

Viscosity Range mPa.s (cP):
< 0.3 = A
0.3 – 0.8 = B
0.8 – 2 = C
2 – 200 = D
200 – 1000 = E
1000 – 20000 = F

Accuracy Requirement:
0.5% of reading = 0.5
0.2% of reading = 0.2

Flow Range and Units:
12-60m3/h
53-264gpm
Select from Flow Range tables

Wetted Part Materials:
Cast iron = A
316 stainless steel = B
Cast steel = C
See Wetted Parts table for temperature and pressure ranges

Flange Types:
ANSI 150 rf = 01 ANSI 300 rf = 02
DIN PN 10 = 03 PN 16 = 04 PN 25 = 05 PN 40 = 06, PN64 = 07
JIS 10k = 08 16k = 09 25k = 10 40k = 11 64k = 12

Electrical Outputs:
No electrical outputs = A
Pulse and 4-20mA outputs, 12 Vdc supply = B
Pulse and 4-20mA outputs, 24 Vdc supply = C

Cable Lengths for Electrical Outputs:
No electrical outputs = 1
10m cables for pulse and 4-20mA = 2
Specify cables lengths required (Max 50m) = 3

Explosive Atmospheres:
No explosive atmosphere = N
Flameproof to Ex d II T4 = F

tekPD - 0 General Enquiry Form

Customer's Name, Project Name, & Location:						
Detail	**Sensor 1**	**Sensor 2**	**Sensor 3**	**Sensor 4**	**Sensor 5**	**Sensor 6**
Quantity						
Media Type ADD any special notes:						
Min & Max Flow Rate With Units See Standard Ranges in Flow Range Tables						
Pulse and 4-20mA Outputs Required (Yes / No) 12 Vdc or 24 Vdc Supply						
Cable Length (10m standard) for Pulse and 4-20mA Outputs Required (Yes/N0)						
Pressure Range and Units						
Temperature Range and Units						
Media Viscosity Range						
Nominal Pipe Size (N) or ID (I), Wall Thickness or Pipe Schedule Specify mm or inches						
Accuracy Required: ± 0.5% of Reading (0.5%) or ± 0.2% of Reading (0.2%)						
Volumetric Flow Rate and Total Display Units						
Explosive Atmosphere Location: Flameproof (F) or Intrinsically Safe (I)						
Is Pipe Electrically Isolated (Yes/No)						
Is the flow sensor to be used in an area of magnetic fields? Yes / No						
Specify Flange Connection Requirements (see Ordering Code)						

tekflo sensors®

Factory & Flow Laboratories:
Block 2, #04 – 685
Road
Singapore 320002
Phone: + 65 (0) 67753340
Fax: + 65 (0) 67791626

Sales and Service:sales@tekflosensors.com
Emergency 24-Hour Service: +65 (0) 882 692 768 Balestier
Website: www.tekflosensors.com

Specifications are subject to change without notice