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FF71 Air Flow Switch



- Suitable for detection of air flow in ducts
- Adjustable set point
- Stainless steel paddles

Standard:

Air Duct Surface (cm ²)	Max. Velocity with increasing flow (m/sec)	Min. Velocity with decreasing flow (m/sec)
160	1.4	0.6
320	2.2	1.2
640	3	1.6
1280	3	1.7

Note: Only suitable for use in horizontal ducts

Order Code	Description	Weight (kg)
FANFF71	Air flow switch	0.36

Specifications:

Switch Rating: SPDT, 10A 250VAC (AC-12), 3A 250VAC (AC-15), 0.2A DC

Max working pressure: 6 Bars

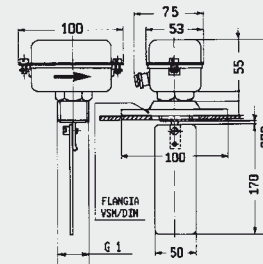
Max air temperature: 50°C

Operating temp: -20 to 70°C

Cable entry: G 3/8" gland

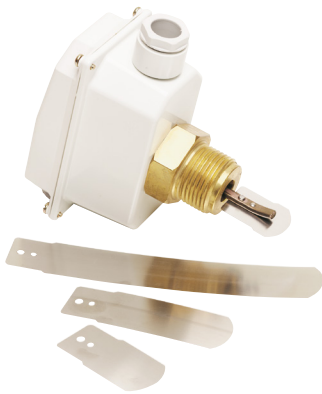
Protection: IP54

Construction: Anti-shock thermoplastic body, PVC flange, 301 stainless steel paddle



Dimensions in mm

FF82 Liquid Flow Switch



- Suitable for the control of fluid in pipes
- Stainless steel paddles 1-8"
- Paddle length can be cut to suit pipe size
- Adjustable set point
- IP65 enclosure

Pipe Ø (inch)	Minimum Flow m ³ /hour		Maximum Flow m ³ /hour	
	Increasing flow	Decreasing flow	Increasing flow	Decreasing flow
1	1	0.5	2	1.9
1½	1.6	1	3.9	3.6
2	2.9	2.1	6.1	5.7
3	6.1	4.3	11.4	10.7
4	14.7	11.3	28.9	27.6
5	28.3	22.8	55.5	53
6	43	35.8	85	81.6
8	85	72.4	172.3	165.5

Order Code	Description	Pipe connection	Weight (kg)
FANFF82	Liquid flow switch 1 to 8" pipes	G 1"	0.67

Specifications:

Switch rating: SPDT 16A 250VAC (AC-12), 6A AC15, 0.2A DC

Max working pressure: 10Bar

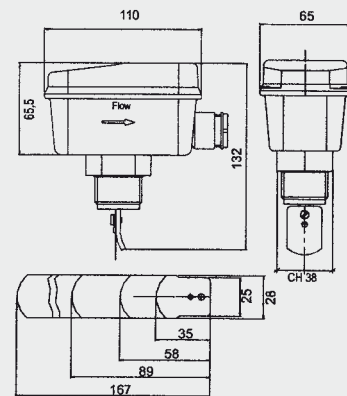
Operating temp: -20 to 110°C

Max body temp: 50°C

Cable entry: Pg 16

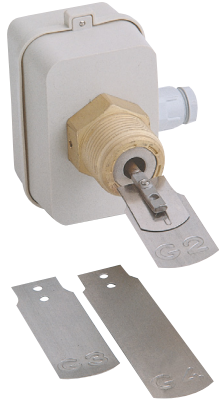
Protection: IP65

Construction: anti-shock thermoplastic housing, brass connection, and 301 stainless steel paddle



Dimensions in mm

FF81P - FF91P - FF84 Liquid Flow Switch



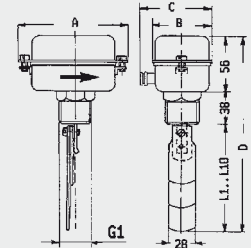
- Suitable for the control of fluid in pipes up to 10"
- Stainless steel or non-toxic plastic paddles
- Paddle length can be cut to suit pipe size
- Adjustable set point

Model	Pipe Ø (inch)	Minimum Flow litre/sec		Maximum Flow litre/sec	
		Increasing flow	Decreasing flow	Increasing flow	Decreasing flow
FF81P	1	0.26	0.16	0.58	0.53
	2	0.87	0.65	1.65	1.74
	3	1.85	1.3	3.49	3.27
	4	2.39	1.85	5.56	5.23
FF91P	½	0.13	0.08	0.29	0.26
	1	0.26	0.16	0.58	0.53
	1½	0.29	0.24	0.87	0.79
FF84	2	0.8	0.6	1.7	1.6
	6	4.7	3.4	9	8.5
	10	26.5	22	43.5	41

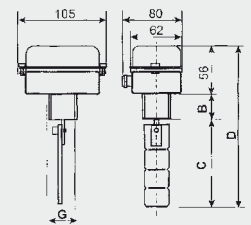
Order Code	Description	Paddle	Pipe connection	Weight (kg)
FANFF81P	Liquid flow switch 1 to 4" pipes	Non-toxic plastic	G 1"	0.34
FANFF91P	Liquid flow switch ½ to 2" pipes	Non-toxic plastic	G ½"	0.25
FANFF84	Liquid flow switch 6 to 10" pipes	301 stainless steel	G 1"	0.67

Specifications:

Switch rating: SPDT 10A 250VAC (AC-12), 3A AC15, 0.2A DC
 Max working pressure: 10Bar
 Max working temp: FF84 - 110°C
 FF81P/91P - 100°C
 Max body temp: 50°C
 Cable entry: 3/8"
 Protection: IP54
 Construction: anti-shock thermoplastic housing, brass connection



	FF81	FF84
A	105	98
B	62	54
C	80	72
D	204	354
G	G1	G1



	FF81P	FF91P
B	38	27
C	110	60
D	204	143
G	G1	G1/2

Dimensions in mm

SF1800 Liquid Flow Switch



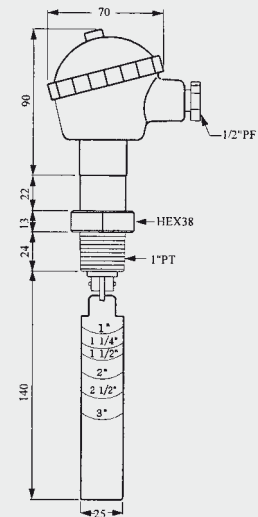
- Suitable for the control of fluid in pipes
- 304 stainless steel (optional 316 stainless steel)
- Paddle length can be cut to suit pipe size
- IP65

Pipe Ø (inch)	Flow litre/sec	
	Switch On	Switch Off
1	22	18
1-½	63	45
2	81	54
3	100	72

Order Code	Description	Pipe connection	Weight (kg)
FINFS80	Liquid flow switch 1 to 8" pipes	1" NPT	0.85

Specifications:

Switch rating: SPDT 1A 240V.a.c.
 Max working pressure: 25Bar
 Working temp: -30 to 150°C
 Cable entry: ½" NPT
 Protection: IP65
 Construction: Aluminium head, 304 stainless steel and Teflon connection, 304 stainless steel paddle



Dimensions in mm

A70 Float Switch



- Suitable for level control in open tanks
- 3 pole switch for direct control of 3ph pump motor
- Emptying or filling function

Order Code	Description	Level Differential	Weight (kg)
FANA70	Float switch with three pole switch	50 to 750mm	1.1

Specifications:

Switch rating: 3 pole double break, lth 25A, 4kW @ 415Vac

Length of float cable: 750mm

Controlled fluid: Water

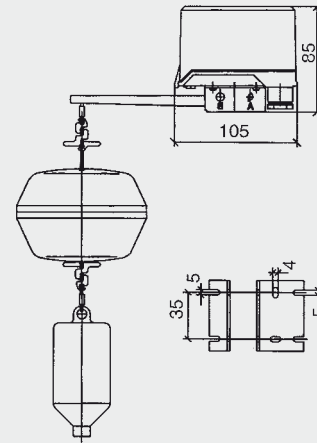
Max Temp of fluid: 50°C

Operating temp: -15 to 55°C

Cable entry: 2 x G½"

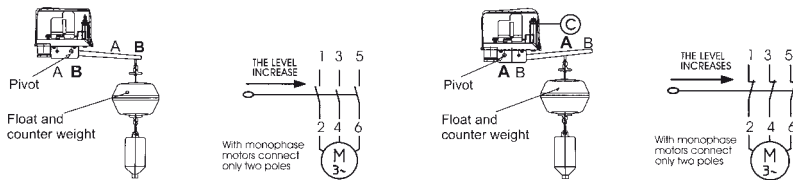
Protection: IP40

Construction: Anti-shock thermoplastic body, mopen float, nylon cable, metallic parts in galvanised steel.

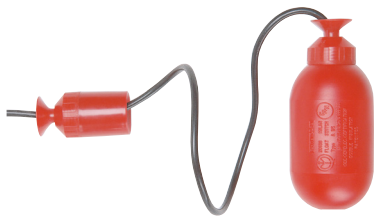


Dimensions in mm

ELECTRICAL CONNECTION



A95 Float Switch



- Sealed Float Switch for open tanks
- Suitable for level control of water, acidic or alkaline solutions
- Submersible float (100mm)
- Choice of cable lengths
- IP68

Order Code	Description	Cable Length	Weight (kg)
FANA95A	Submerged float switch for water solutions	3m	0.70
FANA95B	Submerged float switch for waste solutions	10m	1.30
FANA95BS1	Submerged float switch for waste solutions	15m	1.6

Specifications:

Switch Rating: 1 SPDT, 5A 250Vac (resistive)
3A AC11, 0.2A 220Vdc

Adjustable Level Range: 750mm max.

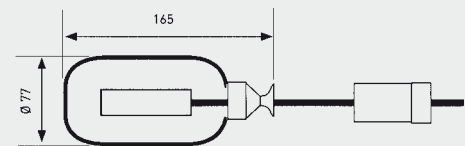
Controlled Fluid: Water, acid or alkaline aqueous solutions

Max Temp of Fluid: 60°C

Max External Pressure: 10 Bars

Protection: IP68

Construction: Polypropylene float, H05VVf 3 x 0.75 cable

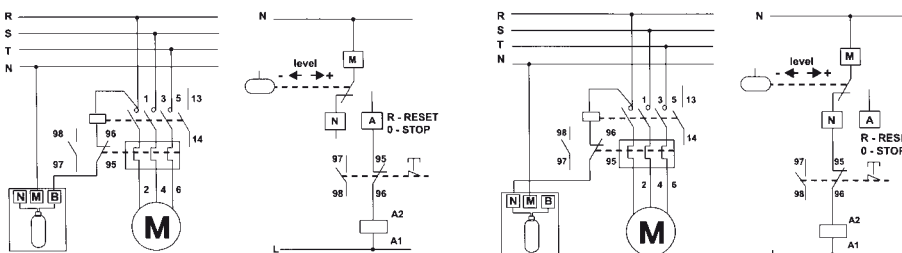


Dimensions in mm

Note: cable lengths up to 25m are available on request.

WIRING DIAGRAM FOR EMPTYING PUMP

WIRING DIAGRAM FOR FILLING PUMP

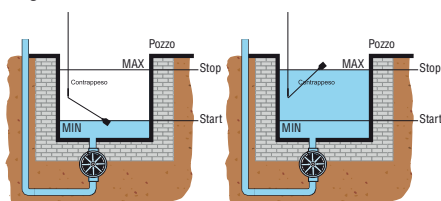


For clean water

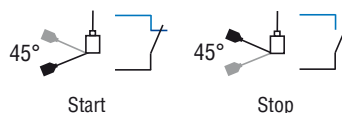


Order code	Cable material	Cable length	Counterweight included	Qty	Wt
		[m]		n°	[kg]
LVFS P1 W 03	PVC	3	Yes	1	0.610
LVFS P1 W 05	PVC	5	Yes	1	0.830
LVFS P1 W 10	PVC	10	Yes	1	1.410
LVFS P1 W 15	PVC	15	Yes	1	1.930
LVFS N1 W 05	Neoprene	5	Yes	1	0.880
LVFS N1 W 10	Neoprene	10	Yes	1	1.510
LVFS N1 W 15	Neoprene	15	Yes	1	2.080
LVFS N1 W 20	Neoprene	20	Yes	1	2.480

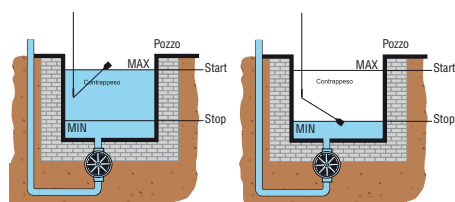
Filling function



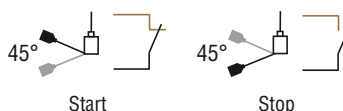
This function is achieved by connecting the black and blue float terminals. The level regulator contact closes the lower circuit at minimum level and opens the circuit when the float reaches the upper maximum level. The MIN and MAX levels can be adjusted by varying the distance between counterweight and float.



Emptying function



This function is achieved by connecting the black and brown float terminals. The level regulator contact closes the upper circuit at maximum level and opens the circuit when the float reaches the lower minimum level. The MIN and MAX levels can be adjusted by varying the distance between counterweight and float.



General characteristics

Float level regulators are used in the automation of electrical equipment, such as: pumps, solenoid valves, alarms, motorised sluice gates, etc. All versions feature an internal changeover contact operated in accordance with the level of liquid where the float is located. The cables used are high-quality and offer excellent mechanical and chemical resistance over time.

The cables are 3x1 type, that is 3 wires with section 1mm². This allows the user to choose the filling and draining function during regulator wiring.

Operational characteristics

They are used for the civil and industrial control of levels of white water, e.g. rainwater, groundwater or cooling water from industry. They are available with PVC and Neoprene cables of various lengths.

- Activation angle -45°...+45°
- 130g external counterweight included
- Float casing material: polypropylene
- Cable A05 VV-F3X1 (PVC) available in lengths of 3, 5, 10 and 15m and cable H07 RN-F3X1 (Neoprene) available in lengths of 5, 10, 15 and 20m
- Rated cable diameter: 9mm (PVC and Neoprene)
- Relay with changeover contact 10(8)A 250VAC 50/60Hz
- Maximum installation depth: 30m
- Maximum pressure: 3 bar
- Maximum operating temperature: +50°C
- Maximum storage temperature: +70°C
- Protection rating: IP68
- Insulation class: II.

Certifications and compliance

Certifications obtained: TÜV SÜD.
Compliant with standards: IEC/EN 60730-1, IEC/EN 60730-2-15.

Dimensions available on page 19-9.

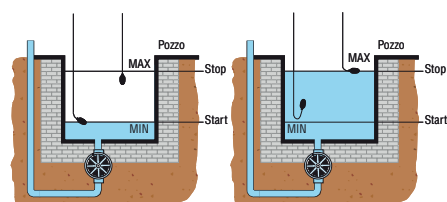
For black water



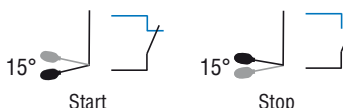
Order code	Cable material	Cable length	Qty per pack	Wt
		[m]	n°	[kg]
LVFS N1 B 05	Neoprene	5	1	1.250
LVFS N1 B 10	Neoprene	10	1	1.860
LVFS N1 B 15	Neoprene	15	1	2.460
LVFS N1 B 20	Neoprene	20	1	3.060

Dimensions available on page 19-9.

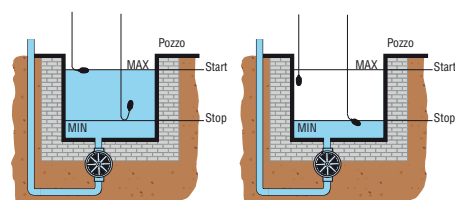
Filling function



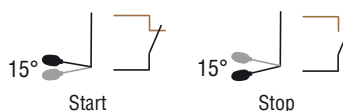
This function uses two floats and is achieved by connecting the black and blue float terminals. The MIN and MAX levels can be adjusted by varying the position of the floats.



Emptying function



This function uses two floats and is achieved by connecting the black and brown float terminals. The MIN and MAX levels can be adjusted by varying the position of the floats.



Operational characteristics

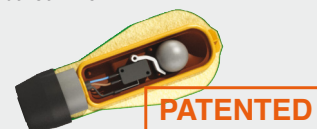
This level regulator is used for the civil and industrial control of levels of black water, e.g. sewage or waste water from industry. The regulator comprises a one-piece external blow-moulded polypropylene casing, with fixed internal counterweight located in the cable exit area.

The regulator contact is positioned centrally in its own watertight chamber. This is insulated from the external casing by injecting closed-cell foam. This solution further increases protection against moisture leakage and heat insulates the watertight chamber housing the contact, eliminating the creation of condensation.

- Activation angle -15°...+15°
- Internal counterweight
- Float casing material: polypropylene
- Cable H07 RN-F3X1 (Neoprene) available in lengths of 5, 10, 15 and 20m
- Rated cable diameter: 9mm
- Relay with changeover contact 10(4)A 250VAC 50/60Hz
- Maximum installation depth: 50m
- Maximum pressure: 5 bar
- Maximum operating temperature: +50°C
- Maximum storage temperature: +70°C
- Protection rating: IP68
- Insulation class: II.

Certifications and compliance

Certifications obtained: TÜV SÜD.
Compliant with standards: IEC/EN 60730-1, IEC/EN 60730-2-15.



It is possible to use even a single float for black water, adjusting the level in a fixed range of 10cm MAX, a solution which is not advisable for turbulent waters.

Single-voltage relay



LVM20...

Order code	Supply voltage	Type of output contacts	Qty per pkg	Weight
	[V] 50/60Hz	1/1	n°	[kg]
Automatic resetting.				
LVM20 A024	24VAC	1 C/O (SPDT)	1	0.215
LVM20 A127	110-127VAC	1 C/O (SPDT)	1	0.215
LVM20 A240	220-240VAC	1 C/O (SPDT)	1	0.215
LVM20 A415	380-415VAC	1 C/O (SPDT)	1	0.215

Dimensions available on page 19-9.

Operational characteristics

- Use with 3 sensing electrodes, MIN, MAX and COM
- 2.5-50kOhm adjustable sensitivity
- Double insulation between supply, electrodes and output relay circuit
- Fixed probe signal delay: <1s
- Green LED indicator for power on
- Red LED indicator for output relay state
- Modular DIN 43880 housing, 2 modules
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

Certifications obtained: UL Listed, for USA and Canada (File E93601), as Auxiliary Devices - Level control relays. Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Electrodes and electrode holders

Use electrodes or electrode holders type: SN1/PS31/PS3S/SCM/CGL or similar. See page 19-7.

Multi-voltage relay



LVM25 240

Order code	Supply voltage	Type of output contacts	Qty per pkg	Weight
	[V]	1/1	n°	[kg]
Emptying or filling function. Automatic resetting.				
LVM25 240	24-240VAC/DC	1 C/O (SPDT)	1	0.095

Dimensions available on page 19-9.

Operational characteristics

- Use with 3 sensing electrodes, MIN, MAX and COM
- 2.5-100kOhm adjustable sensitivity
- Insensitivity to stray electrode-cable capacitance
- Programming selector for emptying or filling function with fail-safe operation
- Double insulation between supply, electrodes and output relay circuit
- Fixed probe signal delay: <1s
- Green LED indicator for power on
- Red LED indicator for output relay state
- Modular DIN 43880 housing, 1 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

Certifications obtained: UL Listed, for USA and Canada (File E93601), as Auxiliary Devices - Level control relays. Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2 and IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Electrodes and electrode holders

Use electrodes or electrode holders type: SN1/PS31/PS3S/SCM/CGL or similar. See page 19-7.

Dual-voltage relay



LVM30...

Order code	Supply voltage	Type of output contacts	Qty per pkg	Weight
	[V] 50/60Hz	1/1	n°	[kg]
Emptying or filling function. Automatic resetting.				
LVM30 A240	24/220-240VAC	2 C/O (SPDT)	1	0.315
LVM30 A415	110-127VAC 380-415VAC	2 C/O (SPDT)	1	0.315

Dimensions available on page 19-9.

Operational characteristics

- Use with 3 sensing electrodes, MIN, MAX and COM
- 2.5-50kOhm adjustable sensitivity
- Programming selector for emptying or filling function with fail-safe operation
- Double insulation between each supply, electrode and output relay circuit
- Adjustable probe signal delay: 1-10s
- Adjustable pump start delay: 0-300s
- Green LED indicator for power on
- Red LED indicator for output relay state
- Modular DIN 43880 housing, 3 modules
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

Certifications obtained: UL Listed, for USA and Canada (File E93601), as Auxiliary Devices - Level control relays. Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Electrodes and electrode holders

Use electrodes or electrode holders type: SN1/PS31/PS3S/SCM/CGL or similar. See page 19-7.

Single-voltage multifunction relay

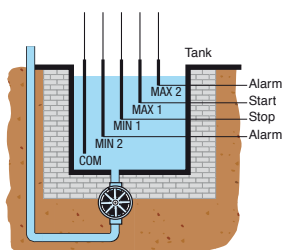


LVM40...

FUNCTIONS

A- Emptying with MIN and/or MAX alarms.

B- Filling with MIN and/or MAX alarms.



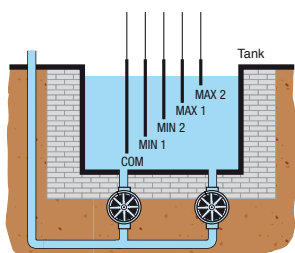
EXAMPLE OF EMPTYING OPERATION

To achieve this type of operation, two electrodes are used to control the liquid between the fixed limits using MIN1 and MAX1 and two alarm levels using MIN2 and MAX2. When one of the alarm electrodes is wet, the alarm relay is de-energised.

The alarm can be caused by pump malfunction, insufficient pump delivery capacity, MAX control level failure or MIN level electrode shorted. With a proper connection, only the MIN alarm or MAX alarm can be activated or neither of the two can be activated so the relative output contacts can be used for pump control.

C- Emptying with pump priority change.

D- Filling with pump priority change.

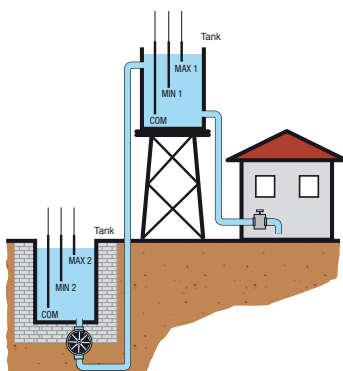


EXAMPLE OF EMPTYING OPERATION

This operation is obtained by using four electrodes positioned at four different levels and two relay outputs to control two pumps.

For example, one can place the four electrodes, MIN1, MIN2, MAX1 and MAX2, in increasing order from the lowest to the highest levels and must control the tank emptying. Usually, the level is controlled between the MIN1 and MAX1 levels by starting one of the two pumps but this case is different so the pumps can be maintained at the best efficiency and optimise their wear. When the liquid wets the MAX2 level and because the first pump is faulty or else a higher delivery capacity is needed, the second stand-by pump is activated to back up the first pump. When the liquid lowers and no longer wets the MIN2 level, the second pump is stopped and then when the MIN1 level is no longer wet, the first pump is stopped too.

E- Tank filling and well drawing with alarm.



EXAMPLE OF OPERATION

Two electrodes are used in this operation to control the tank level and another two for the well. One relay is used to activate the pump while the other for dry running / no water alarm.

When the well liquid wets the MAX2 level and the liquid wets the MIN1 tank level, the tank-filling pump is activated. When the tank MAX1 level is wet, the pump is stopped.

During the tank filling, the pump could stop before the MAX1 level is wet because the well MIN2 level is no longer wet.

Should the tank MIN1 level no longer be wet at which the pump should restart but the well MIN2 level is also no longer wet, then the alarm relay is de-energised.

Order code	Auxiliary supply voltage	Type of output contacts	Qty per pkg	Weight
	[V] 50/60Hz	①	n°	[kg]

Multifunctions.

Automatic resetting.

LVM40 A024	24VAC	1 C/O + 1 N/O	1	0.278
LVM40 A127	110-127VAC	1 C/O + 1 N/O	1	0.278
LVM40 A240	220-240VAC	1 C/O + 1 N/O	1	0.278
LVM40 A415	380-415VAC	1 C/O + 1 N/O	1	0.278

① Two relay outputs; one with c/o (SPDT) and the other with N/O (SPST).

Dimensions available on page 19-9.

Operational characteristics

- Use with 5 sensing electrodes, MIN1, MAX1, MIN2, MAX2 and COM
- 2.5-200kOhm adjustable sensitivity
- Sensitivity adjustment: 25-50-100-200kOhm
- Separate sensitivity adjustment of MAX electrodes for foam detection
- Insensitivity to stray electrode-cable capacitance
- Programming selector for 5 different functions:
 - Standard emptying and alarms
 - Standard filling and alarms
 - Emptying and filling with priority start-up change control
 - Filling with priority start-up change pump
 - Well draining and tank filling and alarms
- Double insulation between each supply, electrodes and output relay circuits
- Adjustable probe signal delay: 1-10s
- Adjustable pump start delay: 0-30min
- Green LED indicator for power on
- Red LED indicators for output relay and electrode state
- Modular DIN 43880 housing, 3 modules
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

Certifications obtained: UL Listed, for USA and Canada (File E93601), as Auxiliary Devices - Level control relays. Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Electrodes and electrode holders

Use electrodes or electrode holders type: SN1/PS31/PS3S/SCM/CGL or similar. See page 19-7.

Electrodes and electrode holder



11 SN1



31 SCM...



31 CGL125...



31 PS31



31 PS3S

Rod probes



Order code	Rod probe included	Rod probe length [mm]	Qty per pkg n°	Wt [kg]
Single pole electrodes.				
11 SN1	yes	10	10	0.050
31 SCM 04	yes	43	1	0.060
31 SCM 50	yes	500	1	0.115
31 SCM 100	yes	1000	1	0.162
31 CGL125 3	yes	327	1	0.126
31 CGL125 5	yes	500	1	0.158
31 CGL125 7	yes	700	1	0.208
31 CGL125 10	yes	1000	1	0.281
Three pole electrode.				
31 PS31	yes	300	1	0.120
Electrode holder (for 3 rod probes).				
31 PS3S	no	—	1	0.184

Dimensions available on page 19-9.

Order code	Rod probe length [mm]	Qty per pkg n°	Wt [kg]
For SCM electrodes.			
31 ASTA 460 MM4	460	1	0.053
31 ASTA 960 MM4	960	1	0.103
For PS3S electrode holder.			
31 ASTA 460 MM6	460	1	0.100
31 ASTA 960 MM6	960	1	0.210

Order code	Description	Qty per pkg n°	Wt [kg]
31 RE213	Coupler unit for extension rod probe ASTA...MM4	1	0.008

Dimensions available on page 19-9.

General characteristics

SN1 SINGLE POLE ELECTRODE

A single pole electrode used for level control in wells or storage tanks. It comprises an AISI 303 stainless steel probe, a plastic (PPOX) holder and a cable gland.

A seal ring and the tightening of the cable gland PG7 prevent water from entering the cable terminal connector and causing its oxidation.

Cable connection: screw.

The external cable diameter must be 2.5 to 6mm to warrant perfect sealing.

Maximum connection cable section: 2.5mm²

Maximum operating temperature: +60°C.

Application: Tanks and deep wells.

SCM ELECTRODE

A single pole electrode used for level control on boilers, autoclaves and in general where pressure (10 bar maximum) and high temperature (+100°C maximum) are present.

It comprises an AISI 303 stainless steel probe embedded in an alumina oxide body and a 3/8" GAS threaded metal support holder.

Cable connection: Threaded rod with nut.

Application: Tanks, pressurised tanks and boilers.

CGL 125... ELECTRODE

A single pole electrode with AISI 302 probe, used for level control on boilers and autoclaves and in general wherever pressure is up to 10 bar maximum.

Maximum operating temperature: +180°C.

3/8" GAS threaded terminal.

Cable connection threaded rod with nut.

Application: Tanks, pressurised tanks and boilers.

PS31 ELECTRODE

A small electrode holder, complete with three AISI 304 stainless steel probes.

Particularly suited to small containers whenever pressure is maximum up to 2 bar.

Maximum operating temperature: +70°C.

1/2" GAS threaded coupling

Faston termination; relative lugs standard supplied

Application: Tanks and automatic dispensers.

PS3S ELECTRODE HOLDER

A thermoset resin electrode holder to be used with three probes (rods probes to be ordered separately) and complete with terminal cover.

Maximum operating temperature is +100°C.

2" GAS threaded coupling.

Cable connection: screw.

Application: tanks.

General characteristics

Stainless steel AISI 304 probes with 4M or 6M threaded extremity suitable as extensions for SCM electrode or as rod probe for PS3S a holder.

Start-up priority change relays



LVMP05

Order code	Auxiliary supply voltage	Type of output contacts	Qty per pkg	Wt
	[V]	↘	n°	[kg]
2 outputs. AC/DC supply voltage.				
LVMP05	24/48VDC 24-240VAC	2 N/O (SPST)	1	0.090

Dimensions available on page 19-9.

General characteristics

The relays are designed to balance the operating time, and hence the wear of pumps, compressors, generators, when two units – primary and stand-by – are installed.

Operational characteristics

- Operating limit: 0.85-1.1 Ue
- Connection: permanent
- Green LED indicator for power on
- Red LED indicators for output relay state
- Modular DIN 43880 housing, 1 module
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

Certifications and compliance

Certifications obtained: UL Listed, for USA and Canada (File E93601), as Auxiliary Devices - Automatic starting control.

Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.



LVMP10...

Order code	Auxiliary supply voltage	Type of output contacts	Qty per pkg	Wt
	[V] 50/60Hz	↘	n°	[kg]
2 outputs. AC supply voltage.				
LVMP10 A024	24VAC	2 N/O (SPST)	1	0.250
LVMP10 A127	110-127VAC	2 N/O (SPST)	1	0.250
LVMP10 A240	220-240VAC	2 N/O (SPST)	1	0.250
LVMP10 A415	380-415VAC	2 N/O (SPST)	1	0.250

Dimensions available on page 19-9.

General characteristics

The relays are designed to balance the operating time, and hence the wear of pumps, compressors, generators, when two units – primary and stand-by – are installed.

Operational characteristics

- Operating limit: 0.85-1.1 Ue
- Connection: permanent
- Green LED indicator for power on
- Red LED indicators for output relay state
- Modular DIN 43880 housing, 3 modules
- IEC degree of protection: IP40 on front (only when mounted in housing or electric board with IP40); IP20 on terminals.

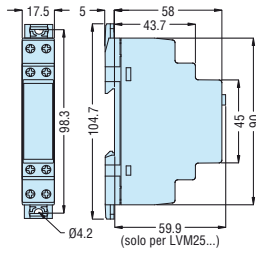
Certifications and compliance

Certifications obtained: UL Listed, for USA and Canada (File E93601), as Auxiliary Devices - Automatic starting control.

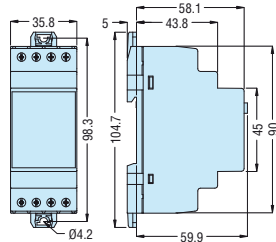
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

Level Control and Priority Change Relays

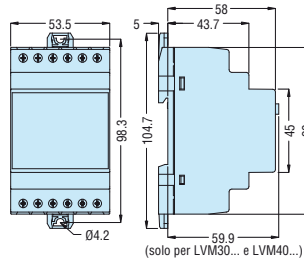
LVM25... - LVMP05



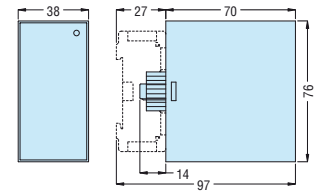
LVM20...



LVM30... - LVM40... - LVMP10

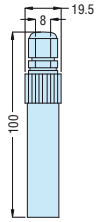


LV1E... - LV2E... - CSP2E...

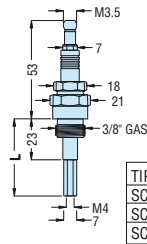


Electrodes and Electrode Holders for Conductive Liquids

SN1

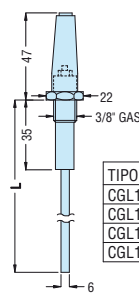


SCM...



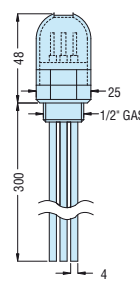
TIPO	L
SCM04	43
SCM50	500
SCM100	1000

CGL125...

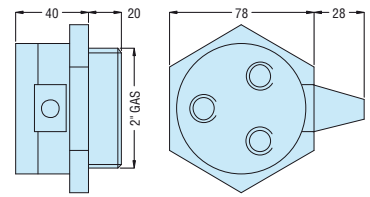


TIPO	L
CGL125 3	327
CGL125 5	500
CGL125 7	700
CGL125 10	1000

PS31

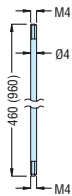


PS3S

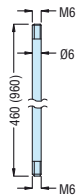


Electrodes

ASTA 460 MM4
ASTA 960 MM4

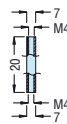


ASTA 460 MM6
ASTA 960 MM6



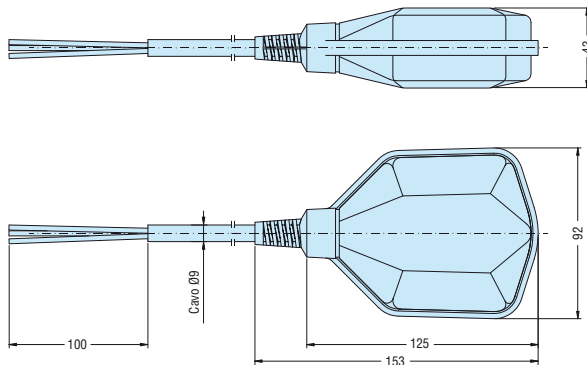
Coupler unit

RE213

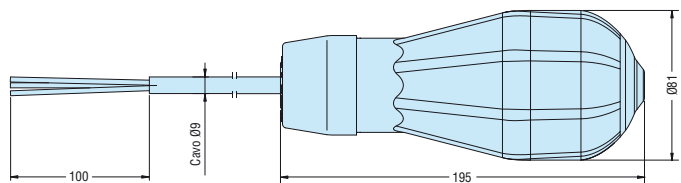


Float Level Regulators

LVFS...W...



LVFS N1 B...



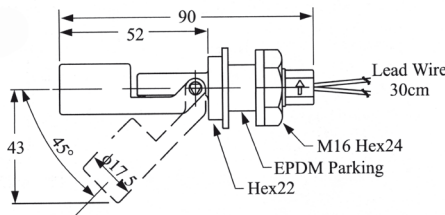
Polypropylene Magnetic Level Switches



- Miniature magnetic level switches
- Horizontal or vertical mounting versions
- Polypropylene construction
- Reversible switch action

Order Code	Description	Suitable SG	Weight (kg)
FINRFOH21	FCH21PDD side mounting level switch (horizontal float)	0.65	0.216
FINRFOV41D	FCV41PD top mount level switch (vertical float)	0.55	0.350

FINRFOH21

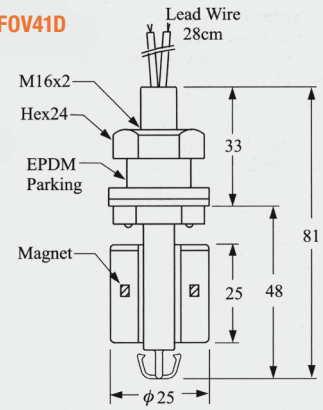


Dimensions in mm

Specifications:

Switch rating: Reed switch SPST 0.5A 240Vac (RC circuit must be used for inductive loads)
 Cable length: 30cm
 Max working pressure: 4Bar
 Working temp: -20 to +80°C
 Construction: Polypropylene (Other materials for aggressive environments are available on request)
 Drill hole: 16mm (external mounting)

FINRFOV41D



Dimensions in mm

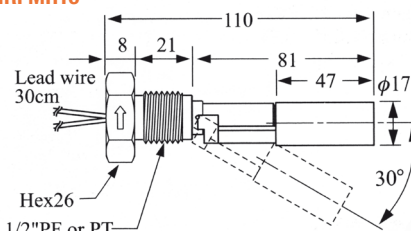
Stainless Steel Magnetic Level Switches



- Miniature magnetic level switches
- Horizontal or vertical mounting versions
- 304 stainless steel construction
- Reversible switch action

Order Code	Description	Suitable SG	Max Working Pressure	Drill Hole	Wt (kg)
FINRF3001D	FD3001D top mounting level switch (vertical float)	0.7	10 Bar	10mm	0.035
FINRF3002D	FD3002D side mount level switch (vertical float)	0.7	10 Bar	10mm	0.043
FINRFMH16	FDMH50-BR side mounting level switch (horizontal float)	0.92	5 Bar	1/2" NPT	0.100

FINRFMH16

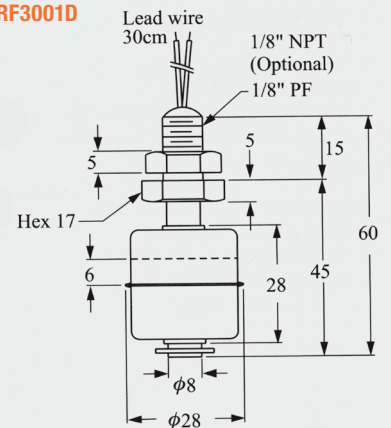


Dimensions in mm

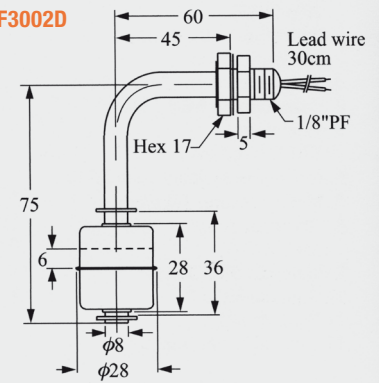
Specifications:

Switch rating: Reed switch SPST 0.5A 240Vac (RC circuit must be used for inductive loads)
 Cable length: 30cm
 Working temp: -20 to +120°C
 Construction: 304 stainless steel (316 is optional)

FINRF3001D



FINRF3002D



Dimensions in mm



LF10CEQ Level Switch

- Side mount magnetic level switch
- 304 stainless steel wetted parts
- IP65
- American Bureau of Shipping approval

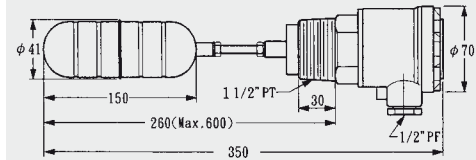


Order Code	Description	Suitable SG	Weight (kg)
FINLF10CEQ	LF10CEQ side mounting level switch (horizontal float)	0.65	1.1

Flanged connection version also available

Specifications:

Switch rating: SPDT 5A 240Vac
Max working pressure: 15Bar
Working temp: -20 to +100°C
Process connection: 1 1/2" PT
Cable entry: 1/2" PT
Protection: IP65
Construction: 304 stainless steel wetted parts, Aluminium terminal housing



Dimensions in mm

PD Optical Level Switch

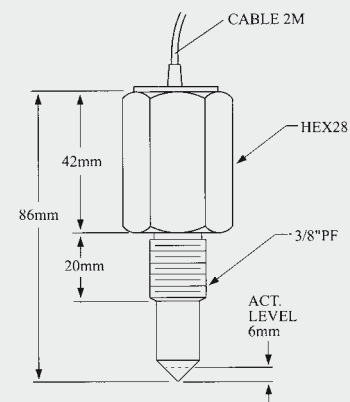
- Suitable for level detection of liquids
- Not effected by turbulence or flow of liquid
- Suitable for most liquids including oil and petrochemicals



Order Code	Description	Output Type	Weight (kg)
FINS20PAVN1	Optical level switch N/O switch	NPN N/O	110
FINS20PAVN0	Optical level switch N/C switch	NPN N/C	110
FINS20PAVP1	Optical level switch N/O switch	PNP N/O	110
FINS20PAVP0	Optical level switch N/C switch	PNP N/C	110

Specifications:

Operating voltage: 10-28VDC
Load current: 100mA max.
Current consumption: 6mA
Cable length: 2m
Max working pressure: 10Bar
Working temp: -10 to +125°C
Protection: IP68
Construction: Polycarbonate
Process connection: 3/8" NPT



Bayham Liquid Level Controls

Direct Reading Contents Gauges



- Dial sizes from 50mm to 250mm, calibrated to customer specifications.
- Reliable direct reading gauges for use in most liquids including water, oil, paints, resins, tar, chemicals etc.
- Special models for LPG and CO₂.
- Lloyd's approved.

Bayham Liquid Level Controls are:

- Precision built instruments for industrial, oil & gas, mining, marine and railway applications.

Typical applications are:

- Road fuel tankers, locomotive fuel, water, effluent, and radiator tanks, fuel tanks for stationary engines, marine fuel, water and ballast tanks, lube oil tanks, bitumen tanks, waste water tanks, LPG and CO₂ tanks.

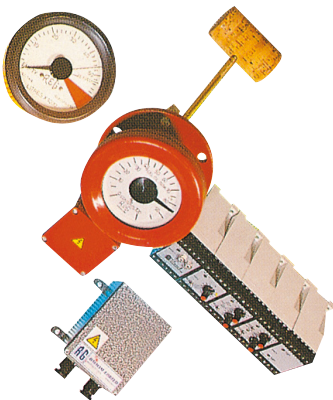
As all Bayham level controls are built to order to suit the specific application and tank dimensions, the following information is of a general nature only and more detailed specifications can be provided upon request.

Baydee & Minidee Liquid Level Gauges with Switches



- Gauge switches that offer gauging with pump control and/or level alarm contacts on a single mounting flange.
- Dial sizes from 50mm to 250mm, calibrated to customer specifications.
- Up to 4 switching levels adjustable over working range.
- Can be connected to IS relays for use in hazardous areas.
- Lloyd's approved.

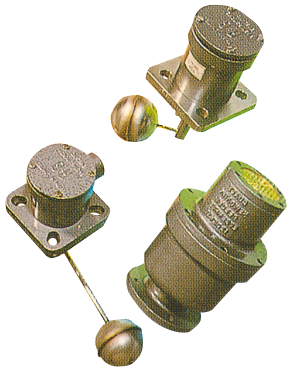
Baysend Remote Reading Tank Gauges



- Remote reading gauges available with local dial at tank and 4-20mA or 0-20mA output for remote indication.
- Alarm, pump control, and mute modules are available and analogue or digital remote indicators calibrated to customers specifications.
- All modules can be used with IS barriers.
- Lloyd's approved.

Bayham Liquid Level Controls

Series 2000 - 2010 - 2020



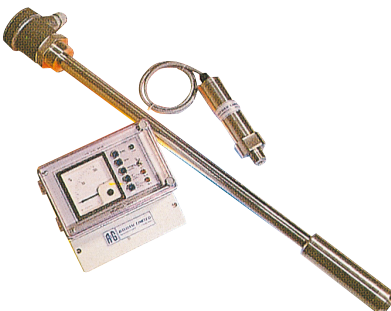
- A range of switches for side or top mounting on tank.
- With up to two pairs of factory set contacts for alarm or pump control.
- Compact design with 4 stud flange.
- Lloyd's approved.

Capacitance Gauges and Switches, Conductivity Switches



- Capella – transguage.
- A quality range of capacitance tank contents gauges with optional switching modules.
- Excellent stability and accuracy over wide variations in temperature and humidity.
- Transcap. Capacitance level switches in PTFE and/or stainless steel.
- Transcon. Low cost level control for any conductive liquid. With 4 switching levels available and all parts in contact with liquid in PTFE, nylon and stainless steel.

Transend Remote Reading Tank Gauges



- Transducer based sensor for use in a wide variety of liquids.
- A compact package set of remote reading and alarm/pump control equipment for non pressurised tanks.
- Tank unit with screwed or flanged connection.

DLS-27 Capacitance Level Switch

- Suitable for level detection of liquids and solids
- Choice of electrodes for conductive and non-conductive media
- Rope electrodes with length up to 6m
- Suitable for most liquids and solids including oil, diesel, petrol, cement and sand etc
- Power supply/relay output units available
- Hazardous area versions available



Specifications:	
Switch rating:	NPN N/O or N/C transistor output max. 200mA (PNP optional)
Operating voltage:	10-36VDC
Current consumption:	7mA
Sensitivity adjustment:	Trim pot
Hysteresis:	Adjustable by trimmer
Cable entry:	DIN connector (optional 2m cable)
Max working pressure:	3Mpa
Working temp:	-20 to +85°C (up to 200°C with high temp option ²)
Construction:	Stainless steel housing and electrode PTFE coating on coated electrodes
Protection:	IP67
Weight:	0.4kg (excluding electrode)
Process connection:	G ¾" (optional M30x1.5mm)

For installation instructions and application information visit www.mechtronic.com.au

Electrode Options

Code	Electrode Properties	Length/application
10	Uncoated for non-conducting liquids and solids	50mm – non conducting liquids (petrol, diesel, oil etc) 100mm – non-adhesive solids (plastic granules, sand, sugar grains, heavy oils). Horizontal mounting
11	Fully coated for conducting liquids	30mm – for water and other conducting liquids. Horizontal mounting
20	Uncoated for non-conducting liquids and solids	100-1000mm (in 10mm increments) – non conducting liquids and powders (oil, detergents, cement, flour, sawdust etc). Horizontal (max 300mm), slant or vertical mounting
21	Fully coated for conducting liquids	100-1000mm (in 10mm increments) – for water and other conducting liquids. Horizontal (max 300mm) or vertical mounting
30	Dismountable uncoated electrode for solids and liquids	100-3000mm (in 10mm increments) – for conducting and non-conducting liquids and powders. Vertical mounting
31	Fully coated electrode for aggressive conductive liquids	100-2000mm (in 10mm increments) – for conducting liquids, chemicals in water solutions. Vertical mounting
40	Fully coated stainless steel rope electrode for conducting and non-conducting liquids and solids	Rope electrode up to 6m – suitable for most liquids and solids conducting and non conducting. Not suitable for turbulence or flowing applications

Order Code	Description	Output Type ¹
DINDLS27N10CNOGE****	Uncoated electrode for non-conducting liquids and solids 50 or 100mm electrode	NPN N/O
DINDLS27N10CNCGE****	Uncoated electrode for non-conducting liquids and solids 50 or 100mm electrode	NPN N/C
DINDLS27N11CNOGE0030	Fully coated electrode for conducting liquids (water) 30mm electrode	NPN N/O
DINDLS27N11CNCGE0030	Fully coated electrode for conducting liquids (water) 30mm electrode	NPN N/C
DINDLS27N20CNOGE****	Semi coated electrode for non-conducting liquids and light solids (powders, granules)	NPN N/O
DINDLS27N20CNCGE****	Semi coated electrode for non-conducting liquids and light solids (powders, granules)	NPN N/C
DINDLS27N21CNOGE****	Fully coated electrode for conducting liquids and solutions (mud)	NPN N/O
DINDLS27N21CNCGE****	Fully coated electrode for conducting liquids and solutions (mud)	NPN N/C
DINDLS27N30CNOGE****	Uncoated electrode for conducting and non-conducting liquids and powders	NPN N/O
DINDLS27N30CNCGE****	Uncoated electrode for conducting and non-conducting liquids and powders	NPN N/C
DINDLS27N31CNOGE****	Fully coated electrode for aggressive conducting liquids	NPN N/O
DINDLS27N31CNCGE****	Fully coated electrode for aggressive conducting liquids	NPN N/C
DINDLS27N40CNOGE****	Uncoated rope electrode with weight for conducting and non-conducting liquids, grains and powders	NPN N/O
DINDLS27N40CNCGE****	Uncoated rope electrode with weight for conducting and non-conducting liquids, grains and powders	NPN N/C

**** - specify electrode length in mm (10mm increments)

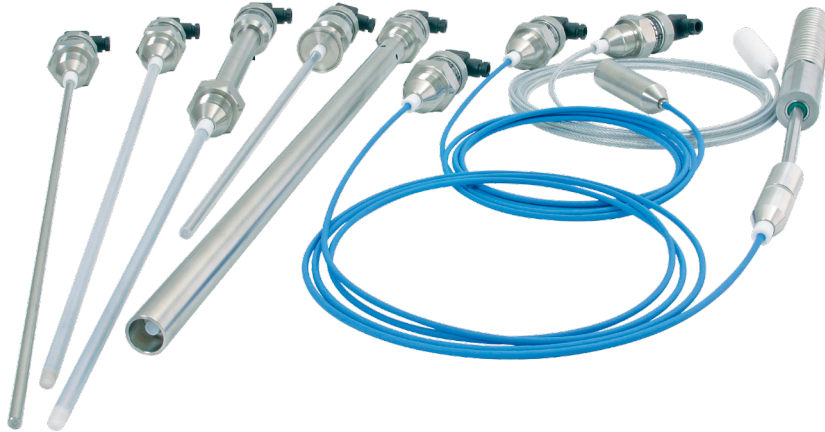
Note ¹ PNP output available – substitute P in code for N

² For high temperature versions code becomes DINDLS27NT.....

See page 19-18 for supply and relay modules.

CLM-36 Capacitance Level Meter

- Suitable for continuous level measurement of liquids and solids
- Choice of electrodes for conductive and non-conductive media
- Rope versions with length up to 20m
- Suitable for most liquids and solids including oil, diesel, petrol, cement and sand etc
- Local and remote display units available
- Hazardous area versions available



Specifications:	
Operating voltage:	16-36VDC
Output:	4-20mA (0-10V option)
Sensitivity adjustment:	DIP switches
Span and zero adjustment:	By independent trimmers
Cable entry:	DIN connector
Max working pressure:	3Mpa (1Mpa > 40°C)
Working temp:	-40 to +85°C (up to 200°C with high temp option)
Construction:	Stainless steel housing and electrode PTFE coating on coated electrodes
Protection:	IP67
Weight:	0.5kg (Excluding electrode)
Process connection:	G1" (G1½" for 2 rod version)

For installation instructions and application information visit www.mechtric.com.au

Electrode Options

Code	Electrode Properties	Length/application
10	Uncoated for non-conducting liquids and solids	Max. 5m – non conducting liquids (petrol, diesel, oil etc) and solids (plastic granules, sand, sugar grains, heavy oils)
12	Fully coated for water and conductive liquids	Max. 3m – for water and other conducting liquids in metallic vessels, concrete sumps, reservoirs etc
20	Uncoated for non-conducting liquids with reference tube for use in irregular shaped tanks	Max. 3m – non conducting low viscosity liquids (petrol, diesel, oil etc)
22	Fully coated for conducting liquids with reference tube for use in irregular shaped tanks plastic tanks	Max. 3m – conducting, low viscosity liquids (water and aqueous solutions)
30	Uncoated rope electrode for solids	Uncoated stainless steel rope electrode up to 20m for use with solids (grains, sand flour cement etc) Not suitable for turbulence or flowing applications
31	Uncoated rope electrode for solids with weight suitable for anchoring to silo floor	Uncoated stainless steel rope electrode up to 20m for use with solids (grains, sand flour cement etc)
32	Fully coated rope electrode for conducting and non-conducting liquids	Rope electrode up to 20m suitable for most liquids conducting and non conducting Not suitable for turbulence or flowing applications
40	Two coated electrodes	Twin coated electrodes up to 2m for aggressive liquids

Order Code	Description	Output Type
DINCLM36N10GIE****	Uncoated electrode for non-conducting liquids and solids, max length 5m	4-20mA
DINCLM36N10GUE****	Uncoated electrode for non-conducting liquids and solids, max length 5m	0-10V
DINCLM36N12GIE****	Fully coated electrode for conducting liquids, max length 3m	4-20mA
DINCLM36N12GUE****	Fully coated electrode for conducting liquids, max length 3m	0-10V
DINCLM36N20GIE****	Uncoated electrode with reference tube for non-conducting liquids, max length 3m	4-20mA
DINCLM36N20GUE****	Uncoated electrode with reference tube for non-conducting liquids, max length 3m	0-10V
DINCLM36N22GIE****	Fully coated electrode with reference tube for conducting liquids, max length 3m	4-20mA
DINCLM36N22GUE****	Fully coated electrode with reference tube for conducting liquids, max length 3m	0-10V
DINCLM36N30GIE****	Uncoated rope electrode for solids, max length 20m	4-20mA
DINCLM36N30GUE****	Uncoated rope electrode for solids, max length 20m	0-10V
DINCLM36N31GIE****	Uncoated rope electrode for solids, max length 20m with tank anchoring	4-20mA
DINCLM36N31GUE****	Uncoated rope electrode for solids, max length 20m with tank anchoring	0-10V
DINCLM36N32GIE****	Fully coated rope electrode for conducting and non-conducting liquids, max length 20m	4-20mA
DINCLM36N32GUE****	Fully coated rope electrode for conducting and non-conducting liquids, max length 20m	0-10V

**** - specify electrode length in mm (10mm increments)

See page 19-18 for display and relay modules.

ULM-53 Ultrasonic Level Meter

- Suitable for continuous level measurement of liquids.
- Range up to 20m
- Compact plastic housing
- 4-20mA or 0-10V outputs
- LED state indication



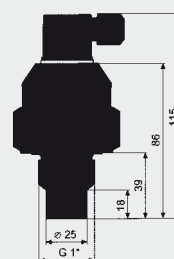
Specifications:
 Operating voltage: 18-36VDC
 Output: 4-20mA (0-10V option)
 Resolution: <1mm
 Basic accuracy: 0.2% (0.3% ULM53N-02)
 Setup: 2 buttons on housing
 Current output load: 600Ω max
 Voltage output load: > 1kΩ
 Start up time: 45sec
 Cable entry: DIN connector
 Working temp: -30 to +70°C (-30 to +60 ULM53N-10/20)
Construction:
 PVDF transmitter and PP HDPE housing and flange (aluminium flange on ULM53N-20)
Protection:
 IP67

Order Code	Range	Beam Width	Refresh Rate	Output Type	Process Connection	Weight (kg)
DINULM53N02I	0.25 to 2m	10°	1.0 sec	4-20mA, 2 wire	G1"	0.20
DINULM53N02U	0.25 to 2m	10°	1.0 sec	0-10V, 3 wire	G1"	0.20
DINULM53N06I	0.25 to 6m	14°	1.4 sec	4-20mA, 2 wire	G1½"	0.25
DINULM53N06U	0.25 to 6m	14°	1.4 sec	0-10V, 3 wire	G1½"	0.25
DINULM53N10I	0.5 to 10m	10°	2.0 sec	4-20mA, 2 wire	Flange Ø 160mm	0.65
DINULM53N10U	0.5 to 10m	10°	2.0 sec	0-10V, 3 wire	Flange Ø 160mm	0.65
DINULM53N20I	0.5 to 20m	12°	2.0 sec	4-20mA, 2 wire	Flange Ø 220mm	2.80
DINULM53N20U	0.5 to 20m	12°	2.0 sec	0-10V, 3 wire	Flange Ø 220mm	2.80

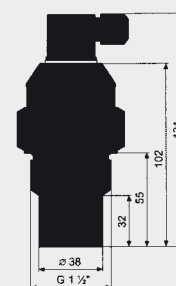
See page 19-18 for display and relay modules.

For installation instructions and application information visit www.mechtronic.com.au

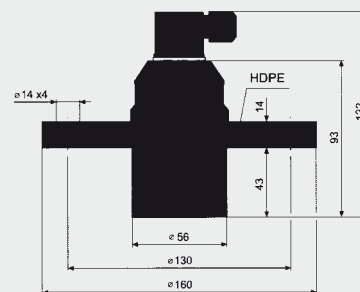
ULM-53N-02



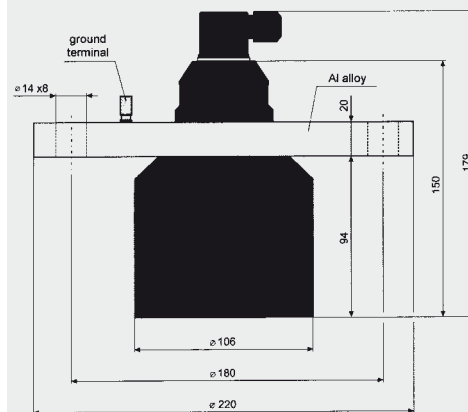
ULM-53N-06



ULM-53N-10



ULM-53N-20



Dimensions in mm

ULM-70 Ultrasonic Level Meter



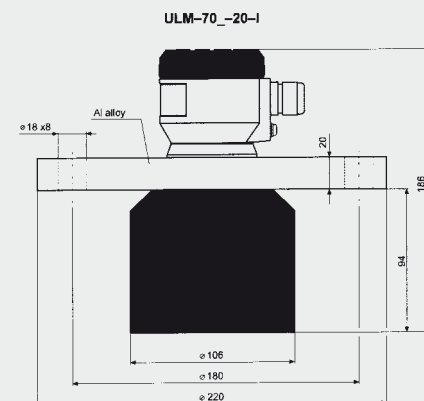
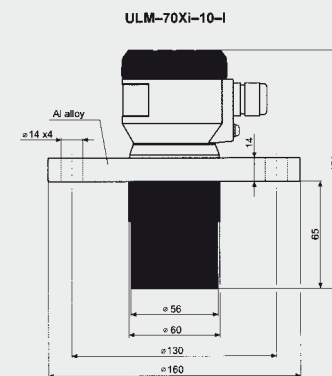
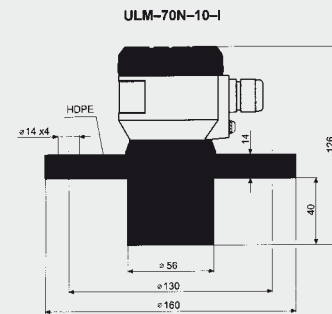
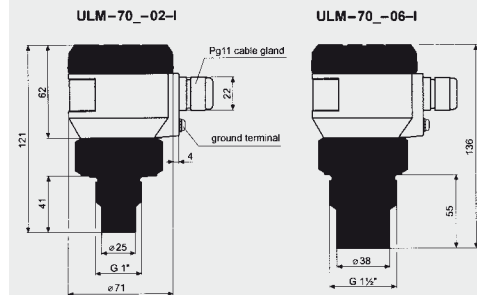
- Suitable for continuous level measurement of liquids and solids.
- Range up to 20m
- Compact plastic housing
- 4-20mA output with HART communication protocol
- Built in display and keypad

Specifications:

Operating voltage: 18-36VDC
Output: 4-20mA, HART
Resolution: <1mm
Basic accuracy: 0.15%
Setup: via built in display and keypad
Current output load: 270Ω max
Start up time: 30sec
Cable entry: DIN connector
Working temp: -30 to +70°C (-30 to +60 ULM70N-10/20)
Max pressure on sensor: 0.1MPa
Construction: PVDF transmitter and PP HDPE housing and flange (aluminium flange on ULM70N-20)
Protection: IP67

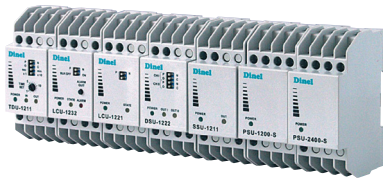
Order Code	Range	Beam Width	Refresh Rate	Output Type	Process Connection	Weight (kg)
DINULM70N02I	0.2 to 2m	10°	1.0 sec	4-20mA, 2 wire	G1"	0.30
DINULM70N06I	0.25 to 6m	14°	1.4 sec	4-20mA, 2 wire	G1½"	0.40
DINULM70N10I	0.4 to 10m	10°	2.0 sec	4-20mA, 2 wire	Flange Ø 160mm	0.70
DINULM70N20I	0.5 to 20m	12°	2.0 sec	4-20mA, 2 wire	Flange Ø 220mm	3.10

For installation instructions and application information visit www.mechtric.com.au



Dimensions in mm

Power Supply and Switch Units

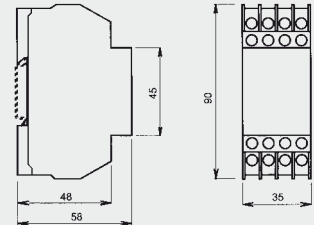


- Provides sensor supply and output relays.
- Suitable for NPN or PNP sensors
- DIN rail or wall mount versions
- LED status indication

Order Code	Description	No. of Output Relays	Weight (kg)
DINSSU1211	Power supply and relay unit for one sensor	1 SPST	0.20
DINDSU1222	Power supply and relay unit for two sensors	2 SPST	0.20
DINLCU1232	Power supply and relay unit for min, max and alarm for 3 sensors	1 SPDT, 1 SPST	0.2
DINLCU1221	Power supply and relay unit for min, max for 2 sensors	1 SPDT	0.2

Specifications:

Power supply: 230V 50Hz \pm 10%
 12VDC
 Sensor supply: 4VDC
 Power consumption: 4VA
 Sensor types: NPN or PNP selectable
 Output contact: SPDT 3A 240VAC (SPDT on LCU)
 Mounting: DIN rail mount



Dimensions in mm

Display Modules



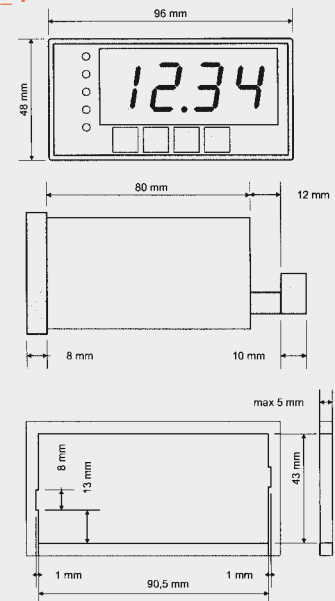
- Local display units (LDU-401)
- Remote display units with sensor supply and output relays (PDU)
- 4-20mA input
- RS-485 (PDU only)
- Panel mount or wall mount versions
- Up to 4 relay outputs

Specifications:

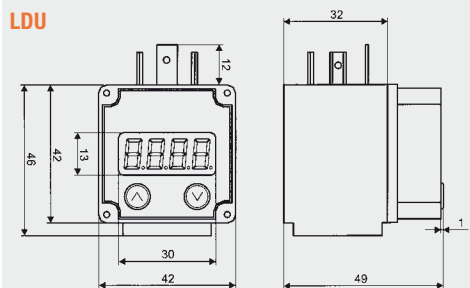
Sensor supply: 24VDC (PDU only)
 Power consumption: 4VA
 Analogue input: 4-20mA
 Analogue output: 4-20mA (selected PDU models only)
 Output contact: SPDT 1A 240VAC
 Protection: IP40 from front (IP65 LDU-401 and PDU wall mount)

Order Code	Description	Mounting	Power Supply	Output	Weight (kg)
DINLDU401	Local 4 digit LED display unit, with set up buttons	DIN plug	4-20mA loop power	-	0.08
DINPDU420P24V	Remote 4 digit LED display, relay and supply unit	Panel	19-50VDC, 16-35VAC	2 SPST	0.28
DINPDU420P230V	Remote 4 digit LED display, relay and supply unit	Panel	85-260VAC	2 SPST	0.28
DINPDU421P24V	Remote 4 digit LED display, relay and supply unit	Panel	19-50VDC, 16-35VAC	2 SPST + Analogue	0.28
DINPDU421P230V	Remote 4 digit LED display, relay and supply unit	Panel	85-260VAC	2 SPST + Analogue	0.28
DINPDU440P24V	Remote 4 digit LED display, relay and supply unit	Panel	19-50VDC, 16-35VAC	4 SPST	0.28
DINPDU440P230V	Remote 4 digit LED display, relay and supply unit	Panel	85-260VAC	4 SPST	0.28
DINPDU420W24V	Remote 4 digit LED display, relay and supply unit	Wall	24VDC \pm 15%	2 SPST	0.36
DINPDU420W230V	Remote 4 digit LED display, relay and supply unit	Wall	230VAC \pm 10%	2 SPST	0.36

PDU-4 _P

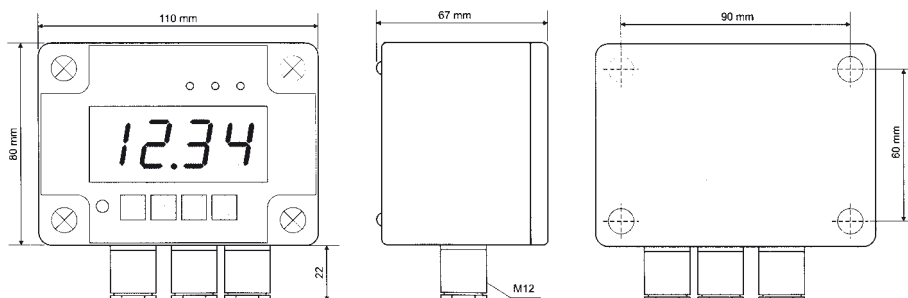


LDU



Dimensions in mm

PDU-420-W



SE3800 Level Switch

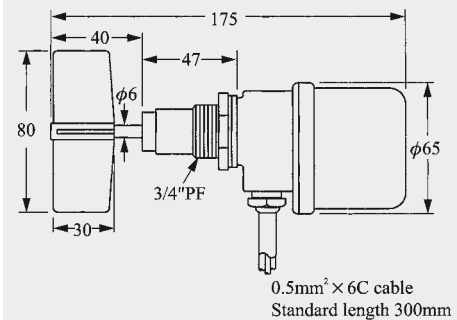


- Suitable for level detection of powders and grains
- 3 operating voltages
- Compact dimensions

Order Code	Model	Operating Voltage	Weight (kg)
FINRP80A	SE3800A	110VAC 50/60Hz	0.42
FINRP80C	SE3800C	240VAC 50/60Hz	0.42
FINRP80D	SE3800D	24VAC 50/60Hz	0.42

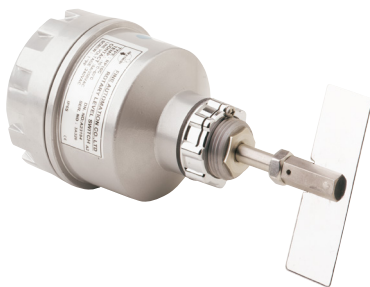
Specifications:

Power consumption: 1.5W
Paddle speed: 1rpm
Torque: 30-100 g-cm
Specific gravity: 0.3
Switch rating: SPDT 3A 240VA.c.
Working temp: -20 to 70°C
Connection: ¾" G
Cable entry: 300mm cable
Protection: IP65
Construction: 304 stainless steel connection, polycarbonate housing and paddle



Dimensions in mm

SE110 Level Switch

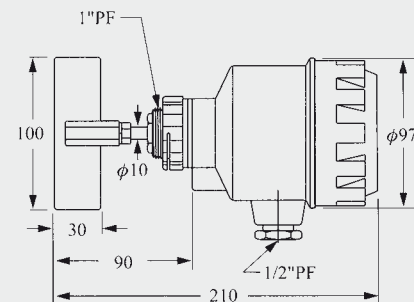


- Suitable for level detection of powders and grains
- 4 operating voltages
- Stainless steel wetted parts
- IP65

Order Code	Model	Operating Voltage	Weight (kg)
FINRP10A	SE110A	110VAC 50/60Hz	1.2
FINRP10C	SE110C	240VAC 50/60Hz	1.2
FINRP10D	SE110D	24VAC 50/60Hz	1.2
FINRP10E	SE110E	24VDC	1.2

Specifications:

Power consumption: 3W
Paddle speed: 1rpm
Torque: 0.5-1 kg-cm
Specific gravity: 0.5
Switch rating: SPDT 5A 240VA.c.
Working temp: -20 to 70°C
Connection: 1" G
Cable entry: ½" PF
Protection: IP65
Construction: 304 stainless steel connection and paddle, Aluminium housing



Dimensions in mm



SE130 Level Switch



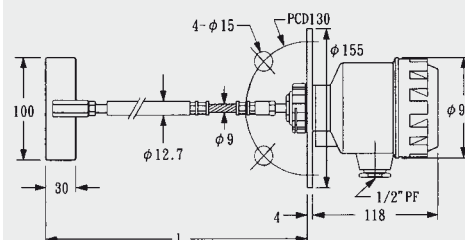
- Suitable for level detection of powders and grains
- Adjustable shaft lengths
- 4 voltage choices
- Stainless steel wetted parts
- IP65



Specifications:

Power consumption:	3W
Paddle speed:	1rpm
Switch rating:	SPDT 5A 240VAC
Working temp:	70°C max.
Connection:	2½" JIS Flange
Cable entry:	½" PF
Protection:	IP65
Construction:	304 stainless steel paddle and shaft, aluminium housing

Order Code	Operating Voltage	Shaft Length	Weight (kg)
FINRP30AGMA0450	110VAC 50/60Hz	460-630mm	2.5
FINRP30CGMA0450	240VAC 50/60Hz	460-630mm	2.5
FINRP30DGMA0450	24VAC 50/60Hz	460-630mm	2.5
FINRP30EGMA0450	24VDC	460-650mm	2.5
FINRP30AGMA0650	110VAC 50/60Hz	650-1000mm	2.8
FINRP30CGMA0650	240VAC 50/60Hz	650-1000mm	2.8
FINRP30DGMA0650	24VAC 50/60Hz	650-1000mm	2.8
FINRP30EGMA0650	24VDC	650-1000mm	2.8
FINRP30AGMA1200	110VAC 50/60Hz	760-1200mm	3.0
FINRP30CGMA1200	240VAC 50/60Hz	760-1200mm	3.0
FINRP30DGMA1200	24VAC 50/60Hz	760-1200mm	3.0
FINRP30EGMA1200	24VDC	760-1200mm	3.0

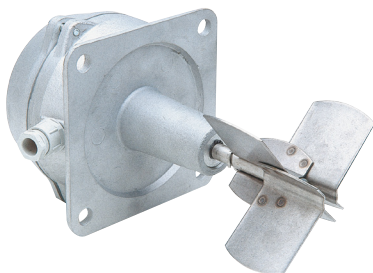


Dimensions in mm

ASE Level Switch



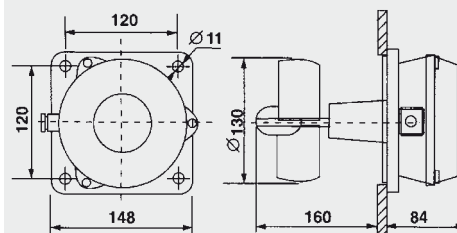
- Suitable for level detection of powders and grains
- Dual voltage operation
- Shaft extensions available to special order



Order Code	Operating Voltage	Weight (kg)
FANASE2	230VAC 50/60Hz	2.2

Specifications:

Switch Rating:	SPDT, 10A 250VAC (resistive) 3A AC15, 0.2A 220VDC
Level Differential:	50mm
Temp of Material:	-20 to +80°C
Operating Temp:	-25 to 70°C
Cable Entry:	½G gland
Protection:	IP54
Construction:	Silium body, stainless steel paddles



Dimensions in mm

C01 Pipe Thermostat

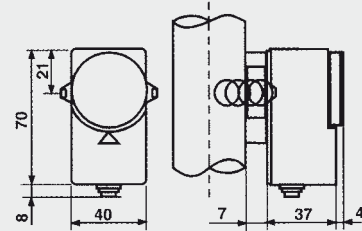


- Temperature sensed by direct contact with pipes
- Liquid expansion sensing element
- Pipe fastening by metal band
- Control of circulating pump or heating unit

Order Code	Description	Weight (kg)
FANC01	Pipe mount thermostat	0.16

Specifications:

Switch rating: SPDT, 10A 250Va.c. (resistive), 2.5A AC15
 Range: 20 to 90°C
 Differential: 8°C
 Accuracy: ±3°C
 Max bulb temp: 120°C
 Cable entry: Through gland
 Protection: IP40
 Construction: Anti-shock thermoplastic



Dimensions in mm

C04 Thermostat



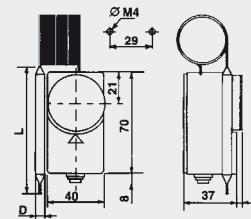
- Capillary Thermostats for boilers, air-conditioning, and ovens
- Liquid expansion sensing element
- Surface installation

Order Code ¹	Range (°C)	Differential (K)	Max Bulb Temp (°C)	Body Temp (°C)	Capillary Length
FANC04A	10 to 90	6 ± 1	120	-35 to +120	1
FANC04B	50 to 300	8 ± 2	330	-35 to +120	1.5
FANC04C	-20 to +40	2 ± 0.5	60	-35 to +60	1.5
FANC04D	-35 to +20	2 ± 0.5	50	-35 to +50	1.5
FANC04E	40 to 120	6 ± 2	150	-35 to +120	1

¹ Add Y to order code for IP65 version

Specifications:

Switch Rating: SPDT, 10A 250VAC (resistive) 2.5A AC15, 0.2A 220VDC
 Calibration Accuracy: ±3°C
 Cable Entry: Through gland
 Protection: IP40
 Construction: Anti-shock thermoplastic body, copper or nickel plated copper bulb and capillary
 Weight: 0.17Kg



TYPE	L	D
C04A	95	6,5
C04B	80	5
C04C	152	6,5
C04D	152	6,5
C04E	95	6,5

Dimensions in mm

Accessories and Spare Parts

Order Code	Description
FANG24	175mm Pocket ½" G Connection

C10 Thermostat

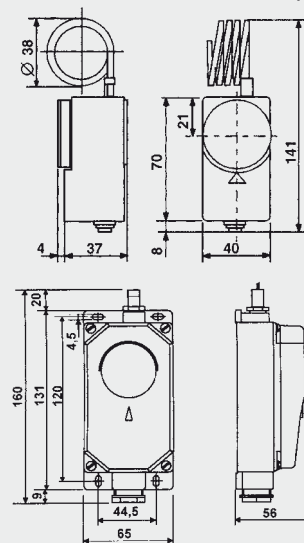


- Thermostats for control of ambient temperature in cool rooms, green houses, cellars
- Liquid expansion sensing element with spiral capillary
- Surface installation

Order Code ¹	Range (°C)	Max Element Temp (°C)	Body Temp (°C)	Protection	Wt (kg)
FANC10A	0 to 60	80	-10 to 80	IP40	0.16
FANC10B	-20 to +40	60	-20 to 60	IP40	0.16
FANC10C	-35 to +20	50	-35 to 50	IP40	0.16
FANC10AY	0 to 60	80	-10 to 80	IP65	0.32
FANC10BY	-20 to +40	60	-20 to 60	IP65	0.32
FANC10CY	-35 to +20	50	-35 to 50	IP65	0.32

Specifications:

Switch rating: SPDT, 10A 250VAC (resistive), 2.5A AC 15
 Differential: ±2°C
 Cable entry: Through gland
 Construction: Anti-shock thermoplastic



Dimensions in mm

C16 Room Thermostat

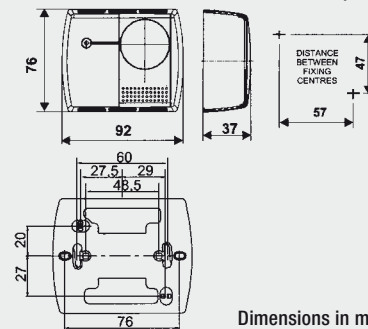


- Thermostats for control of ambient temperature in hotel rooms and apartments
- Vapor pressure sensing element
- Optional LED and on/off switch
- Surface installation

Order Code	Description	Weight (kg)
FANC16	Room thermostat	0.09
FANC16I	Room thermostat with On/off	0.15
FANC16IL	Room thermostat with On/off and LED	0.15

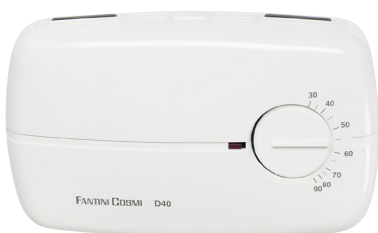
Specifications:

Switch Rating: SPDT, 10A 250VAC (resistive) 2.5A AC15, 0.2A 220VDC
 Range: 10 to 30°C
 Differential: 0.8°C
 Calibration Accuracy: 3%
 Max Room Temp: 45°C
 Cable Entry: Through back
 Protection: IP20
 Construction: Anti-shock thermoplastic



Dimensions in mm

D40 Humidistat

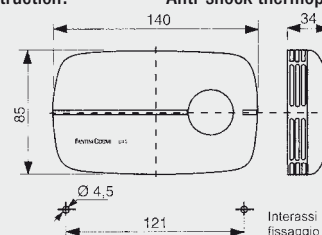


- For control of humidity in green houses, cellars and stores
- Adjustable range 30-90% RH
- Relay output

Order Code	Description	Weight (kg)
FAND40	Humidistat humidity control	0.16

Specifications:

Voltage: 240VAC
 Switch rating: SPDT, 6A 250VAC (resistive), 3A AC15
 Range %RH: 30 to 90%
 Differential %RH: 5%
 Temp range: 0 to 50°C
 Cable entry: Terminals on rear of enclosure
 Protection: IP20
 Construction: Anti-shock thermoplastic



Dimensions in mm

DTA Temperature Controllers

- PID, on/off or manual control
- Auto-tuning PID
- Optional RS-485
- Universal sensor inputs
- Choice of 3 output types
- 5 sizes
- 2 groups of alarm switches with 13 alarm modes
- Key lock function
- Setting and recording software available



Specifications:

Supply voltage:	100-240VAC 50/60Hz (-15% to +10%)
Power consumption:	5VA
Display method:	2 line x 4 character 7 segment LED PV-Red, SV – Green
Display accuracy:	0.1% full scale
Sampling rate:	500ms
Sensor type:	Thermocouple: K, J, T, E, N, R, S, B, L, U, Txx 3-wire platinum RTD: Pt100, JPt100
Control mode:	PID, on/off, manual
Outputs:	Relay - SPDT (SPST on DTA4848) AC15 - 250VAC5A Voltage pulse - 14VDC 40mA Current - 4-20mA (max 600Ω)
Alarm outputs:	2 groups
Communication:	RS-485 optional (2,400-38,400bps), Modbus ASCII/RTU
Ambient temp range:	0 to 50°C

For dimensions refer to page 19-28.

Order Code	Size w x h (mm)	Output	Weight (kg)
DEVDTA4848R*	48 x 48	relay	0.17
DEVDTA4848V*	48 x 48	voltage pulse	0.17
DEVDTA4848C*	48 x 48	current	0.17
DEVDTA4896R*	48 x 96	relay	0.25
DEVDTA4896V*	48 x 96	voltage pulse	0.25
DEVDTA4896C*	48 x 96	current	0.25
DEVDTA7272R*	72 x 72	relay	0.24
DEVDTA7272V*	72 x 72	voltage pulse	0.24
DEVDTA7272C*	72 x 72	current	0.24
DEVDTA9696R*	96 x 96	relay	0.35
DEVDTA9696V*	96 x 96	voltage pulse	0.35
DEVDTA9696C*	96 x 96	current	0.35
DEVDTA9648R*	96 x 48	relay	0.25
DEVDTA9648V*	96 x 48	voltage pulse	0.25
DEVDTA9648C*	96 x 48	current	0.25

* Specify communications option:

0 = no comms.

1 = RS-485.

DTB Temperature Controllers



- PID, on/off, manual control or programmable PID control
- Auto-tuning PID
- Programmable control gives up to 64 temperature and time settings
- RS-485
- Universal sensor inputs and analogue input
- Choice of 4 output types
- 4 sizes
- 3 groups of alarm switches with 18 alarm modes
- Dual loop output control (standard, heating and cooling)
- Key lock function
- Setting and recording software available

Order Code ¹	Size w x h (mm)	Output 1 ²	Output 2	Weight (kg)
DEVDTB4824RR*	48 x 24	relay	relay	0.13
DEVDTB4824VR*	48 x 24	voltage pulse	relay	0.13
DEVDTB4824VV*	48 x 24	voltage pulse	voltage pulse	0.13
DEVDTB4824CR*	48 x 24	current	relay	0.13
DEVDTB4848RR*	48 x 48	relay	relay	0.18
DEVDTB4848VR*	48 x 48	voltage pulse	relay	0.18
DEVDTB4848VV*	48 x 48	voltage pulse	voltage pulse	0.18
DEVDTB4848CR*	48 x 48	current	relay	0.18
DEVDTB4896RR*	48 x 96	relay	relay	0.27
DEVDTB4896VR*	48 x 96	voltage pulse	relay	0.27
DEVDTB4896VV*	48 x 96	voltage pulse	voltage pulse	0.27
DEVDTB4896CR*	48 x 96	current	relay	0.27
DEVDTB9696RR*	96 x 96	relay	relay	0.36
DEVDTB9696VR*	96 x 96	voltage pulse	relay	0.36
DEVDTB9696CR*	96 x 96	current	relay	0.36
DEVDTB9696VV*	96 x 96	voltage pulse	voltage pulse	0.36

* Add option code if required- E= event input, CT= CT input

¹ Add -D to code for 24VDC version

² Analogue voltage output also available use code L. Other combinations for output 1 and 2 are available on request

Specifications:

Supply voltage: 100-240VAC 50/60Hz (-15% to +10%) (optional 24VDC)

Power consumption: 5VA

Display method: 2 line x 4 character 7 segment LED PV-Red, SV – Green

Display accuracy: 0.1% full scale

Sampling rate: 400ms (150ms for analogue input)

Sensor type: Thermocouple: K, J, T, E, N, R, S, B, L, U, Txx
3-wire platinum RTD: Pt100, JPt100
Analogue input: 0-5V, 0-10V, 0-20mA, 4-20mA, 0-50mA

Control mode: PID, programmable PID, on/off, manual

Outputs: Relay - SPDT (SPST on DTB4848 and DTB4824) AC15 - 250VAC5A
Voltage pulse - 14VDC 40mA
Current - 4-20mA (max 600Ω)
Analogue voltage: 0-10V

Alarm outputs: 3 groups

Communication: RS-485 optional (2,400-38,400bps), Modbus ASCII/RTU

Options: CT - current transformer input, with alarm output
E - event function allows remote switching between 2 set values

Ambient temp range: 0 to 50°C

For dimensions refer to page 19-28.

DTV Valve Temperature Controllers

- Dedicated valve controller with auto/manual switching
- Display of valve position in %
- PID, on/off, manual control or programmable PID control
- Auto-tuning PID
- Programmable control gives up to 64 temperature and time settings
- RS-485
- Universal sensor inputs and analogue input
- 2 sizes
- 2 groups of alarm switches with 17 alarm modes
- Key lock function
- Setting and recording software available



Order Code	Size w x h (mm)	Output	Weight (kg)
DEVDTV4896R	48 x 96	relay	0.27
DEVDTV4896C	48 x 96	current	0.27
DEVDTV9696R	98 x 96	relay	0.36
DEVDTV9696C	98 x 96	current	0.36

Specifications:

Supply voltage:	100-240VAC 50/60Hz (-15% to +10%)
Power consumption:	5VA
Display method:	2 line x 4 character 7 segment LED PV-Red, SV – Green, Valve position -Green
Display accuracy:	0.1% full scale
Sampling rate:	400ms (150ms for analogue input)
Sensor type:	Thermocouple: K, J, T, E, N, R, S, B, L, U, Txx 3-wire platinum RTD: Pt100, JPt100 Analogue input: 0-5V, 0-10V, 0-20mA, 4-20mA, 0-50mA
Control mode:	PID, programmable PID, on/off, manual
Outputs:	Relay - SPDT AC15- 250VAC 5A Current- 4-20mA (max 600Ω)
Alarm outputs:	3 groups
Feedback signal:	resistive/voltage signals
Communication:	RS-485 optional (2,400-38,400bps), Modbus ASCII/RTU
Ambient temp range:	0 to 50°C

For dimensions refer to page 19-28.

DTC Modular Temperature Controllers



- PID, on/off, manual control or programmable PID control
- Auto-tuning PID
- Programmable control gives up to 64 temperature and time settings
- Dual loop output control (standard, heating and cooling)
- RS-485
- Universal sensor inputs and analogue input
- Choice of 4 output types
- DIN rail mounting
- Modular configuration allows monitoring of up to 8 temperature points
- 2 groups of alarm switches with 12 alarm modes
- Setting and recording by DTCCOM software

Specifications:

Supply voltage: 24VDC \pm 10%
Power consumption: 3VA + 3VA x number of DTC2000 extension modules
Sampling rate: 400ms (150ms for analogue input)
Sensor type: Thermocouple: K, J, T, E, N, R, S, B, L, U, Txk
 3-wire platinum RTD: Pt100, JPt100
 Analogue input: 0-5V, 0-10V, 0-20mA, 4-20mA, 0-50mA
Control mode: PID, programmable PID, on/off, manual
Outputs: Relay - SPST AC15- 250VAC 3A
 Voltage pulse - 12VDC 40mA
 Current - 4-20mA (max 500 Ω)
 Analogue voltage: 0-10V (load > 1000 Ω)
Alarm outputs: 2 groups
Communication: RS-485 optional (2,400-38,400bps), Modbus ASCII/RTU
Ambient temp range: 0 to 50°C

Order Code	Output	Weight (kg)
MPU (required)		
DEVDTTC1000R	relay	0.11
DEVDTTC1000V	voltage pulse	0.11
DEVDTTC1000C	current	0.11
DEVDTTC1000L	analogue voltage	0.11
Extension Module		
DEVDTTC2000R	relay	0.11
DEVDTTC2000V	voltage pulse	0.11
DEVDTTC2000C	current	0.11
DEVDTTC2000L	analogue voltage	0.11

For dimensions refer to page 19-28.

DTE Multi-Channel Modular Temperature Controllers



- PID, on/off, manual control or programmable PID control
- Auto-tuning PID
- Programmable control gives up to 64 temperature and time settings
- RS-485
- Universal sensor inputs
- Choice of 4 output types
- DIN rail mounting
- Modular configuration allows monitoring of up to 8 temperature points
- Supports up to 7 DTC2000 extension units to give total 15 channels
- 2 groups of alarm switches with 12 alarm modes
- Setting and recording by DTCCOM software

Order Code	Input	Output	Weight (kg)
MPU (required)			
DEVDT10T	CH1-4 Thermocouple	-	0.32
DEVDT10P	CH1-4 RTD	-	0.32
Display and Setting Extension Module			
DEVDT20S	-	-	0.09
Input Extension Card			
DEVDT20T	CH5-8 Thermocouple	-	0.09
DEVDT20P	CH5-8 RTD	-	0.09
DEVDT20D	CH1-8 EVENT func.	-	0.09
DEVDT2CT	4CH CT input	-	0.09
Output Extension Card			
DEVDT20R	-	4CH relay	0.09
DEVDT20V	-	4CH voltage pulse	0.09
DEVDT20L	-	4CH analogue voltage	0.09
DEVDT20C	-	4CH current	0.09

Note additional expansion modules from DTC2000 range can also be added up to a maximum of 7 modules

Specifications:

Supply voltage: 24VDC \pm 10%

Power consumption: 10VA + 3VA x number of DTC2000 extension modules

Sampling rate: 1sec on all inputs

Sensor type: Thermocouple: K, J, T, E, N, R, S, B, L, U, Txk
3-wire platinum RTD: Pt100, JPt100
Analogue input: 0-5V, 0-10V, 0-20mA, 4-20mA, 0-50mA

Control mode: PID, programmable PID, on/off, manual

Outputs: Relay - SPST AC15- 250VAC 3A
Voltage pulse - 24VDC 40mA
Current - 4-20mA (max 500 Ω)
Analogue voltage: 0-10V (load > 1000 Ω)

Alarm outputs: 2 groups

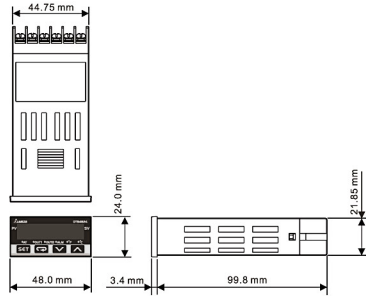
Communication: RS-485 optional (2,400-115,200bps), Modbus ASCII/RTU

Ambient temp range: 0 to 50°C

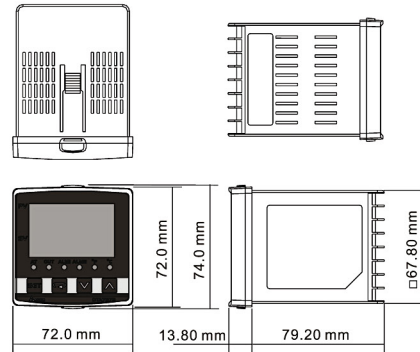
For dimensions refer to page 19-28.

DT Series Temperature Controller Dimensions

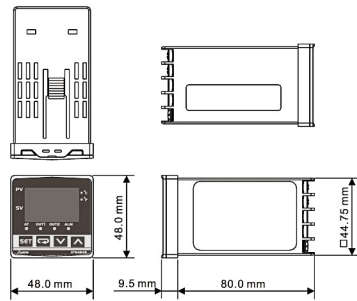
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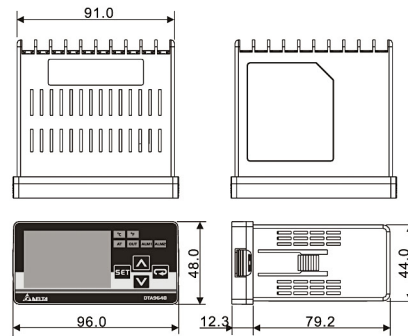
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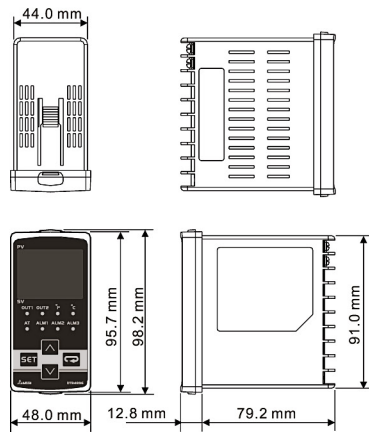
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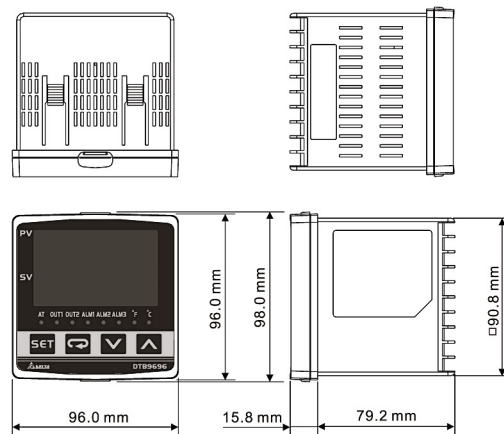
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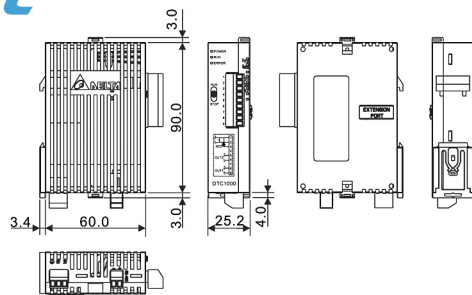
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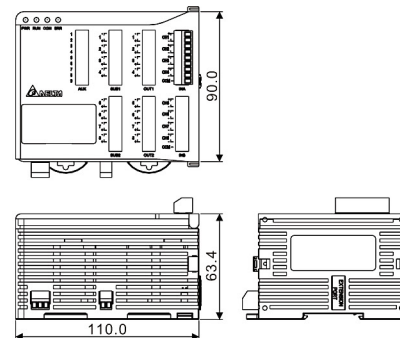
9696



DTC



DTE



RC Contactors for Heating Control

- Current up to 50A (20kW)
- 1ph, 2ph and 3ph versions
- Line voltage up to 480VAC
- DC control voltage to suit DTA and DTB controllers



Order Code	No. Phases	Current AC-51/ AC-1	Dimensions h x h x d (mm)	Wt (kg)
ICRC11DD4015	1	15A	110 x 22.5 x 124.3	0.25
ICRC11DD4030	1	30A	110 x 45 x 124.3	0.69
ICRC11DD4050	1	50A	110 x 90 x 124.3	1.15
ICRC22DD4030	2	2 x 15A	110 x 90 x 124.3	1.15
ICRC22DD4050	2	2 x 25A	110 x 90 x 124.3	1.15
ICRC33DD4010	3	3 x 10A	110 x 90 x 124.3	1.15
ICRC33DD4020	3	3 x 20A	110 x 90 x 124.3	1.15

Specifications:

Line voltage: 24-480VAC 50/60Hz
 Rated Insulation: 660V
 Impulse withstand voltage: 4kV
 Control voltage: 5-24dc
 Control current: 1ph/2ph - 15mA @ 24VDC
 3ph - 25mA @ 24VDC
 Pick up voltage: 4.5V
 Drop out voltage: 1.5V
 Response time: 1/2 cycle
 Leakage current: 1mA
 Minimum operational current: 10mA
 Power Dissipation: 1.2W/A
 Protection: IP20
 Temperature rating (°C): -20 to +40

SPC Analogue Heating Controller

- Current up to 50A (20kW)
- Provides very accurate control of temperature and energy savings
- Phase angle or burst firing control
- Analogue input or potentiometer control
- Control voltage to suit DTA and DTB controllers



Order Code	No. Phases	Current AC-51/ AC-1	Dimensions h x h x d (mm)	Wt (kg)
ICSPCIAD4030	1	30A	110 x 45 x 124.3	0.69
ICSPCIAD4050	1	50A	110 x 90 x 124.3	1.15

Specifications:

Line voltage: 230-480Va.c. 1ph 50/60Hz
 Rated Insulation: 660V
 Impulse withstand voltage: 4kV
 Control voltage: 0-10Vd.c.
 Control current: 0-20mA or 4-20mA
 Manual control: 0-10k ohm potentiometer
 Response time: 1 cycle
 Leakage current: 1mA
 Minimum operational current: 10mA
 Power Dissipation: 1.2W/A
 Protection: IP20
 Temperature rating (°C): -20 to +40

B12 Pressure Switches

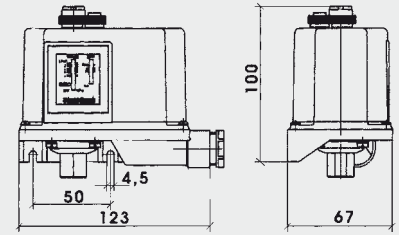


- Ranges from -0.2 Bar to 300 Bar
- Set point and differential externally adjustable
- IP65 enclosure

Order Code	Range (Bar)	Differential (Bar)	Max Pressure (Bar)	Max. Fluid Temp. (°C)	Process Connection
FANB12ANY	-0.82 to 0	0.1 fixed	2.5	120	G¼" F
FANB12BNY	0.2 to 2	0.1 to 0.5	4	120	G¼" F
FANB12CNY	-0.2 to 8	0.6 to 3	9	120	G¼" F
FANB12DNY	5 to 16	1 to 3.5	18	120	G¼" F
FANB12ENY	8 to 28	2 to 6	32	120	G¼" F
FANB12FNY	12 to 50	6 to 15	60	80	G¼" M
FANB12GNY	25 to 150	12 to 40	180	80	G¼" M
FANB12HNY	60 to 300	40 to 80	350	80	G¼" M

Specifications:

Switch rating: SPDT, 16A 415Vac (resistive)
6A (inductive), 0.2A 220Vdc
Max body temperature: 60°C
Cable entry: ½ inch BSP
Protection: IP65
Construction: Metal frame. Anti-shock thermoplastic body, stainless steel diaphragm or piston



Dimensions in mm

EC1510 Pressure Transmitter

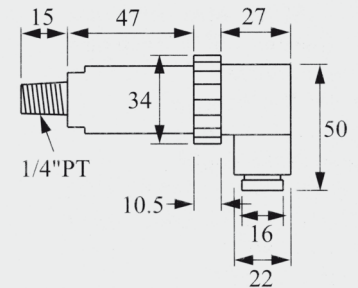


- Suitable for non-hazardous liquids and gases
- Pressure range up to 100 Bar (Gauge)
- 4-20mA output (0-5V optional)

Order Code	Description	Range (Bar)	Weight (kg)
FINEC1510010	Pressure transmitter 4-20mA output	0 ~ 1	0.18
FINEC1510020	Pressure transmitter 4-20mA output	0 ~ 2	0.18
FINEC1510050	Pressure transmitter 4-20mA output	0 ~ 5	0.18
FINEC1510060	Pressure transmitter 4-20mA output	0 ~ 6	0.18
FINEC1510100	Pressure transmitter 4-20mA output	0 ~ 10	0.18
FINEC1510200	Pressure transmitter 4-20mA output	0 ~ 20	0.18

Specifications:

Operating voltage: 12-32VDC
Output: 4 ~ 20mA
Accuracy: ±0.5% FS
Max working pressure: 2 x full scale
Working temp: 0 to +60°C
Protection: IP65
Construction: 316 SS
Process connection: ¼" NPT
Electrical connection: DIN connector



Dimensions in mm

DPA Pressure Controllers

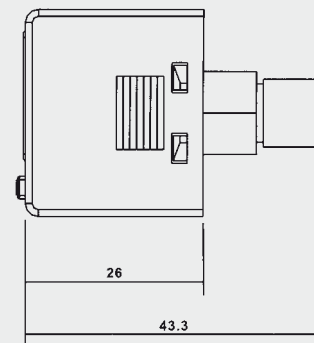
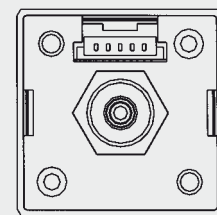
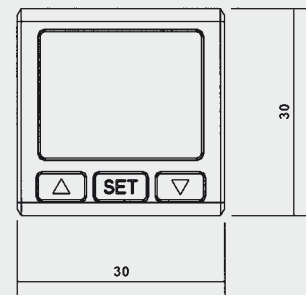
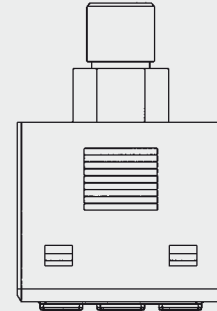
- Digital pressure control for pneumatic systems
- 2 ranges up to 1000kPa
- 3 colour LCD display
- Transistor and analogue outputs
- Measures positive and negative pressures
- Password protection



Order Code	Range (kPa)	Max. Over-pressure (kPa)	Output	Weight (kg)
DEV DPA01MP	-100~100	200	NPN, 1~5V	0.08
DEV DPA01NP	-100~100	200	NPN, 4~20mA	0.08
DEV DPA01QP	-100~100	200	PNP, 1~5V	0.08
DEV DPA01PP	-100~100	200	PNP, 4~20mA	0.08
DEV DPA10MP	-100~1000	1500	NPN, 1~5V	0.08
DEV DPA10NP	-100~1000	1500	NPN, 4~20mA	0.08
DEV DPA10QP	-100~1000	1500	PNP, 1~5V	0.08
DEV DPA10PP	-100~1000	1500	PNP, 4~20mA	0.08

Specifications:

Supply voltage: 12-24VDC $\pm 10\%$
Power consumption: 60mA max.
Accuracy: $\pm 3\%$
Display: 2 line LCD, 3 colours for different modes
Response time: adjustable 2ms to 5000ms
Process connection: G $1/8$ "
Sensed fluid: non-corrosive gas
Output: 2 x NPN or PNP transistor and 1 x analogue
Mounting: panel mounting or free standing with accessories
Ambient temp range: 0 to 50°C



Dimensions in mm

Accessories and Spare Parts

Order Code	Description
DEV DPAFMKIT	Free standing mounting bracket kit
DEV DPAPFKIT	Panel mounting kit