

FLUID FLOW SWITCH

Model Q-12N & Q-12CR

VERY LOW COST

Miniature 1/2" NPT Unit

Available in SPDT, NO or NC Switch Operation

COMPONENT RECOGNIZED /c  (E85349)

True Flow Switch Performance Independent of Pressure and Temperature.

Flexible Design

- Target area
- Target Length
- Target stiffness

Which provide performance and flexibility to meet a multitude of pipe size and flow rate applications.

- Extremely Wide Operating Range:
- Down to 0.4 GPM in 3/4 inch pipes
- Up to 590 GPM in 8 inch pipes
- Many more switch points and pipe sizes available, consult factory for free analysis.

Send Us Your Special Requirements - We Will Quote A Special Unit To Meet Those Requirements



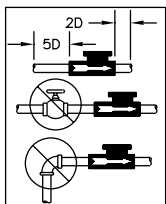
- Designed for a broad spectrum of industrial fluids - pure water, tap water, sea water, cooling tower water, glycol solutions, acids, bases, hydrocarbons, ketones, lubricating oils, gasoline, JP-4, plating solutions.
- Max flow may be five times normal flow.
- Positive stop essentially eliminates fatigue effects of turbulence, vibration and flow surge on flow detecting element.
- Very low pressure drop - typically less than 1.0 psig at normal flow rate.

- Line pressure to 200 psig.
- Temperature to 180°F continuous.
- Switches 5 VDC to 240 VAC.
- Power the driving coil of small ice cube relays as well as some 30 amp power relays.
- Provides dry circuit interface with computer and PLC modules.
- Small size and low profile provides easy mounting in crowded installations.

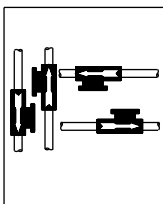
Typical Uses

- Brakes and clutches
- Computer systems
- Electromagnets
- Emergency wash down showers
- Fire sprinkler flow alarms
- High power transistors, SCR's etc.
- Lasers
- Marine and stationary engines
- Monitoring flow and temperature of coolant water supplied to:
 - RF and Radar transmitters
 - Sea water & Fresh water systems
 - Spot welders
 - Transformers
 - Vacuum systems

TURBULENT FLOW REDUCTION



MOUNT IN ANY POSITION



In Chemical Processing

- Liquid transfer
- Starting back-up pumps
- Sewage systems
- Fluid blending systems
- Monitoring pump output, valve position, systems flow status
- Liquid scrubbers
- Water treatment
- Monitor filter clogging
- Heat transfer fluids

NOTE: Model Q-12N employs magnetic coupling between float arm and switch body. Magnetic particles can accumulate on and around magnetic housing which may affect proper operation. Please conduct appropriate fluid magnetic particle evaluation and operational tests prior to and during installation and use.



Limited Warranty Page 7

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Email: harwil@harwil.com

Model Selection Chart

Pipe Size NPT	Nominal ON/OFF Switch Point Range (GPM)		Target Blade #
	Orifice		
	On	Off	
3/4	0.4 - 0.3	2 - 1	1
	0.8 - 0.5	2 - 1	2
1	0.7 - 0.4	3 - 2	3
	1.0 - 0.8	3 - 2	4
		4 - 3	5
		6 - 5	6
1 1/2		13 - 12	7
		16 - 15	8
		21 - 19	9
2		15 - 12	10
		23 - 18	11
		27 - 22	12
3		33 - 25	13
		57 - 45	14
		65 - 58	15
		82 - 78	16
4		56 - 43	17
		95 - 83	18
		120 - 108	19
		150 - 140	20
5		92 - 69	21
		150 - 130	22
		180 - 170	23
6		230 - 220	24
		135 - 95	25
		220 - 180	26
		260 - 220	27
8		340 - 310	28
		240 - 180	29
		390 - 320	30
		430 - 400	31
	590 - 570	32	

CONSULT THE FACTORY FOR LARGER PIPES AND ADDITIONAL SWITCH POINTS.

Model Q-12N & Q-12CR

Electrical Switch Characteristics

SPNO	
AC Voltage (Max switching)	300 VAC
DC Voltage (Max switching)	350 VDC
Current (max switching-DC)	0.5 amp
Current (max carrying-DC)	2.5 amp
Power (max resistance load)	50 watts
Contact resistance (max initial)	0.15 ohms
Insulation resistance	10 ¹⁰ ohms
Operating temperature	-40°F to 240°F (-40°C to 115°C)

SPNC or SPDT, 3 Watt, 100 VAC/VDC optional

Nominal Working Temperature/Pressure

Q-12N	Q-12CR
180°F	200°F @ ambient pressure
250 Psig	200 Psig @ room temperature

Inductive Loads

Switch contacts have been tested with small relays and 30 amp J-C relay inductive driving coils at 120/240 VAC to 500,000 operations without failure. Steady state driving coil Volt/Amp rating should be 8VA or less.

Dry Circuit Operation

Switch can interface with microprocessor based controllers and related computer circuits.

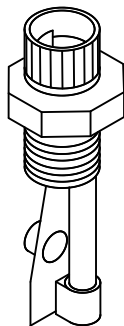
Wetted Surfaces

Model Q-12N	Model Q-12CR
G.E. NORYL® (PPO) GFN-1 (10% glass fibers)	Tycona Fortron® (PPS) (40% glass fibers)
316 Stainless steel	Hastelloy®C
Epoxy	Epoxy

PPO - Polyphenylene Oxide
PPS - Polyphenylene Sulfide

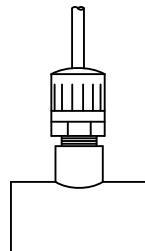
For performance in your working fluid see extensive corrosion resistance guide in the back of the catalog (see page 49).

Free parts samples are available for testing in your "exotic" unlisted fluids.



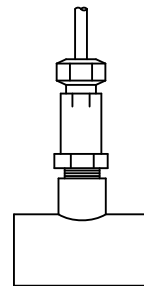
OPTION 1

Basic unit supplied with two 0.187 x 0.020 male spade terminals recessed in 1/2" NPT nipple section.



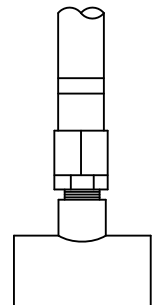
OPTION 2

Two conductor instrument cable potted in place. PVC tee optional.



OPTION 3

Basic unit with DMP tapered rubber grommet attachment for watertight seal and strain relief. PVC tee optional.



OPTION 4

Basic unit fitted with a 1/2" NPT female thread for mating with 1/2" plastic flexible conduit PVC tee optional.

Sample Part Number

basic model # & body material pipe size (inches) target blade # switch operation electrical connect opt. tee size and material orifice size

Q-12N / 3/4 / 2 / NO / 1 / 3/4x3/4x1/2 SST PVC / 1/4" ORIFICE

noryl® (PPO) or fortron® (PPS) 3/4" to 8"+ 1 thru 32 N.O. or N.C. option 1, 2, 3, or 4 25 1/4 or 1/2

- Installation drawing and a numbered parts list is supplied with each unit.
- Current Price Information is Listed on Separate Sheet.
- Special One Day Delivery Available.