

AUTOMATIC CONTROL VALVES BY RAPHAEL

RAPHAEL RANGE

RAF PRESSURE

RAF PRESSURE offers the possibility of controlling an upstream pressure, a downstream pressure or both. RAF PRESSURE REDUCING reduces and stabilises a higher inlet pressure to a steady lower and pre-set downstream pressure, regardless of flow and/or inlet pressure variations. RAF PRESSURE SUSTAINING insures a minimum and pre-set inlet pressure regardless of flow and/or downstream pressure variations and can be also used as a Pressure Relief Valve to dissipate excess system pressure. With more than 65 years of experience, RAF PRESSURE gets the widest range of standard and tailor made solutions, continuously optimized in order to provide reliability and accuracy to satisfy our customer expectations.



MARKETS



Irrigation



Fire protection network



Water treatment



Water transmission



Water distribution network



Desalination



Industrial water applications



Dams and hydro power



Fire protection network

TECHNICAL DATA

Fluid: raw water or filtered water

Nominal Diameter (DN):
from 40 to 400mm (1.5" to 16")
Available connections: refer to the chart

Nominal Pressure (PN):
16 bar

Medium Temperature: up to 70°C

Body material: ductile iron, stainless steel or other alloys on request

Coating: Cast iron with Rilsan (Nylon11), Epoxy, Enamel

APPROVALS

UL pending

ADVANTAGES

MONO DIAPHRAGM VALVE

Simplicity in design (three part main valve, no spring inside) provides a cost-effective solution, both directions, and maintenance needs lower than competition.

LOW HEAD LOSSES

With inner flow passages streamlined and coated with low-friction materials.

EASY SETTINGS

Done simply by screwing (to increase the set point value) or unscrewing (to decrease the set point value) the screw on the top of the pilot.

CHARACTERISTICS

└ **Cover unique** – Made of ductile iron.

└ **Diaphragm** – “No spring” patented diaphragm guarantees uniform pressure distribution over sealing area, prevents diaphragm deformation and ensures longer maintenance free operation.

└ **Body** – “Bridge” type, straight flow, ductile iron.

└ **Fasteners** – Self-retaining chrome plated steel nuts and hex stainless steel bolts enable easy access and keep it corrosion free.

└ **Pilots, solenoids** – Fittings and pipes can be in polyethylene plastic and Nylon or brass.

└ Pilot circuit is protected by a **self-flushing finger filter**, installed in the water inlet of the valve: maintenance free.

└ **Combination with other pilots or solenoids** is possible to meet all demands.

Diameter in inch (mm equivalence)		1"1/2 (40)	2" (50)	2"1/2 (65)	3-2-3" (80-50-80)	3-2-3" (80-65-80)	3" (80)	4-3-4" (100-80-100)	4" (100)	5-4-5" (125-100-125)	6-4-6" (150-100-150)	6" (150)	8" (200)	10" (250)	12" (300)	14" (350)	16" (400)
Available connections	Threated	X	X	X	X	X	X		X								
	Flanged		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Grooved	X	X	X	X	X	X		X								
Kv (m³/h)		40	70	100	72	130	170	170	290	290	300	490	790	1400	1800	1850	1950
Max flowrate (m³/h)		25	45	60	50	70	90	90	150	150	150	320	550	950	1200	1650	1750
Minimum/maximum operating pressure (bar)		0.8 / 16	0.7 / 16				0.6 / 16		0.4 / 16				0.3 / 16				
Weight (flanged version) (kg) W/O pilot circuit		1.8 (threated)	7.9	10.1	11	11.4	17.5	20.1	25.5	29.5	35.8	49.5	71	109	140	177	344
Length flanged version (mm)		159 (threated)	190	216	230	216	283	283	305	305	325	406	470	635	749	350	406

Other characteristics: www.RAPHAEL-valves.com



RAF PRESSURE SUSTAINING

└ Pilots adjustment ranges:

- Pressure reducing or pressure sustaining: 2 to 10 bar / 0.5 to 4 bar / 0.5 to 6 bar / 2 to 16 bar.
- Both: 2 to 10 bar as a standard.

APPLICATION PROVIDED BY RAF

└ **RAF Pressure Reducing** – Reducing the pressure on the main network, regulating multi-level networks, protecting the network against high upstream pressure variations, emergency supply from one pressure zone to another, pressure control on membrane treatment plant, reducing leakage thanks to the control of the supplying pressure.

└ **RAF Pressure Sustaining (or relief):**

- Sustaining the pressure in the network regardless of flow demand or prioritizing pressure zones (in-line installation), e.g raise a piezometrical line to supply a high altitude area or protect a pump.
- Protecting the network against excessive pressure (off-line installation), protecting a pump from no flow rate operating...



RAF PRESSURE REDUCING/
SUSTAINING

GOOD TO KNOW

- └ RAF exists also in angular version: RAF-A.
- └ RAF is available in reduced bore version for DN80/100/125/150.
- └ Pre-sales and after-sales support departments help to define the right solution (tailor-made) and the right sizing.
- └ Automatic control valves are scalable by adding or removing functions, and by modifying pilot spring range.
- └ RAF leads the market in Fire Protection Regulation.



RAF WITH PILOT CIRCUIT
STAINLESS STEEL

AUTOMATIC CONTROL VALVES BY RAPHAEL

RAPHAEL RANGE

RAF LEVEL

RAF LEVEL offers different possibilities of controlling the level with altitude pilot or float pilot, operating as an on/off valve except the float level control valve which ensures a constant level and thus a modulation of the opening of the main valve.

The wide range of altitude and float pilots provides the right solution regarding installation, design and customer requirements. Coupled with RAF valve, and by taking into account the potential need of another pilot (pressure or flow), filling a tank without overflowing and preserving the inlet network are insured for all cases.



MARKETS



Irrigation



Fire protection network



Water treatment



Water transmission



Water distribution network



Desalination



Industrial water applications



Dams and hydro power



Fire protection network

TECHNICAL DATA

Fluid: raw water or filtered water

Nominal Diameter (DN):
from 40 to 400mm (1.5" to 16")
Available connections: refer to the chart

Nominal Pressure (PN):
16 bar

Medium Temperature: up to 70°C

Body material: ductile iron, stainless steel or other alloys on request

Coating: Cast iron with Rilsan (Nylon11), Epoxy, Enamel

APPROVALS

UL pending

ADVANTAGES

FLOAT PILOTS

For modulating (float level control) or on/off (bi-level control) combining the simplicity of their mechanism with a high accuracy. Both have to be mounted in the tank (offset paving).

ALTITUDE PILOTS

For on/off control are mounted on the control valve, which provides for easy installation and maintenance by a direct access to setting(s).

MONO DIAPHRAGM VALVE

Simplicity in design induces cost-effective solution, both directions, and lower maintenance needs than competition.

CHARACTERISTICS

- └ **Unique cover** – Made of ductile iron.
- └ **Diaphragm** – “No spring” patented diaphragm guarantees uniform pressure distribution on sealing area, prevents diaphragm deformation and ensures longer maintenance free operation.
- └ **Body** – “Bridge” type, straight flow, ductile iron.
- └ **Fasteners** – Self-retaining chrome plated steel nuts and hex stainless steel bolts enable easy access and keep it corrosion free.
- └ Pilot circuit is protected by a **self-flushing finger filter**, installed in the water inlet of the valve: maintenance free.
- └ **Combination with other pilots or solenoids** is possible to meet all demands.

Diameter in inch (mm equivalence)		1"1/2 (40)	2" (50)	2"1/2 (65)	3-2-3" (80-50-80)	3-2-3" (80-65-80)	3" (80)	4-3-4" (100-80-100)	4" (100)	5-4-5" (125-100-125)	6-4-6" (150-100-150)	6" (150)	8" (200)	10" (250)	12" (300)	14" (350)	16" (400)
Available connections	Threated	X	X	X	X	X	X		X								
	Flanged		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Grooved	X	X	X	X	X	X	X	X								
Kv (m³/h)		40	70	100	72	130	170	170	290	290	300	490	790	1400	1800	1850	1950
Max flowrate (m³/h)		25	45	60	50	70	90	90	150	150	150	320	550	950	1200	1650	1750
Minimum/maximum operating pressure (bar)		0.8 / 16	0.7 / 16				0.6 / 16		0.4 / 16				0.3 / 16				
Weight (flanged version) (kg) W/O pilot circuit		1.8 (threated)	7.9	10.1	11	11.4	17.5	20.1	25.5	29.5	35.8	49.5	71	109	140	177	344
Length flanged version (mm)		159 (threated)	190	216	230	216	283	283	305	305	325	406	470	635	749	350	406

Other characteristics: www.RAPHAEL-valves.com



RAF FLOAT LEVEL

Altitude pilot range: 8 / 15 / 30m.

APPLICATION PROVIDED BY RAF

RAF ON/OFF LEVEL (float or altitude) – Filling of reservoirs with low consumption, to allow water renewal in the reservoir. Filling of reservoirs from pumping stations.

RAF modulating float level – Insure a complete full time filling of the reservoir to keep the maximum volume at disposal. By admitting flow into the tank in direct proportion to the flow out of the tank, pressure and velocity variations in the inlet network are reduced.



RAF ALTITUDE LEVEL

GOOD TO KNOW

RAF exists also in angular version: RAF-A.

RAF is available in reduced bore version for DN80/100/125/150.

RAF on/off level potentially delivers a high flow rate. Taking this point into consideration is important for preserving the inlet network, and could require an additional control on the same valve as pressure sustaining or rate of flow limit.

Pre-sales and after-sales support departments help to define the right solution (tailor-made) and the right sizing.

Automatic control valves are scalable by adding or removing functions, and by modify pilot spring range.

RAF leads the market in Fire Protection Regulation.

AUTOMATIC CONTROL VALVES BY RAPHAEL

RAPHAEL RANGE

RAF RATE OF FLOW AND OVERSPEED

RAF RATE OF FLOW limits the maximum flow rate by controlling the differential pressure between the inlet and the outlet of an orifice plate, regardless of pressure variations.

RAF OVERSPEED closes automatically and irreversibly in an adjustable time as soon as the flow exceeds a pre-set and adjustable value, regardless of pressure variations. As standard, a manual reset is required.



MARKETS



Irrigation



Fire protection network



Water treatment



Water transmission



Water distribution network



Desalination



Industrial water applications



Dams and hydro power



Fire protection network

TECHNICAL DATA

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Available connections: refer to the chart

Nominal Pressure (PN):
16 bar

Medium Temperature: up to 70°C

Body material: ductile iron, stainless steel or other alloys on request

Coating: Cast iron with Rilsan (Nylon11), Epoxy, Enamel

APPROVALS

UL pending

ADVANTAGES

MONO DIAPHRAGM VALVE

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LOW HEAD LOSSES

With inner flow passages streamlined and coated with low-friction materials.

EASY SETTINGS

Done only by screwing (to increase the set point value) or unscrewing (to decrease the set point value) the screw on the top of the pilot.

CHARACTERISTICS

- └ **Unique cover** – Made of ductile iron.
- └ **Diaphragm** – “No spring” patented diaphragm guarantees uniform pressure distribution on sealing area, prevents diaphragm deformation and ensures longer maintenance free operation.
- └ **Body** – “Bridge” type, straight flow, ductile iron.
- └ **Fasteners** – Self-retaining chrome plated steel nuts and hex stainless steel bolts enable easy access and keep it corrosion free.
- └ Pilot circuit is protected by a **self-flushing finger filter**, installed in the water inlet of the valve: maintenance free.
- └ **Combination with other pilots or solenoids** is possible to meet all demands.

Diameter in inch (mm equivalence)		1"1/2 (40)	2" (50)	2"1/2 (65)	3-2-3" (80-50-80)	3-2-3" (80-65-80)	3" (80)	4-3-4" (100-80-100)	4" (100)	5-4-5" (125-100-125)	6-4-6" (150-100-150)	6" (150)	8" (200)	10" (250)	12" (300)	14" (350)	16" (400)
Available connections	Threated	X	X	X	X	X	X	-	X	-	-	-	-	-	-	-	-
	Flanged		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Grooved	X	X	X	X	X	X		X								
Kv (m³/h)		40	70	100	72	130	170	170	290	290	300	490	790	1400	1800	1850	1950
Max flowrate (m³/h)		25	45	60	50	70	90	90	150	150	150	320	550	950	1200	1650	1750
Minimum/maximum operating pressure (bar)		0.8 / 16	0.7 / 16				0.6 / 16		0.4 / 16					0.3 / 16			
Weight flanged version (kg) W/O pilot circuit		1.8 (threated)	7.9	10.1	11	11.4	17.5	20.1	25.5	29.5	35.8	49.5	71	109	140	177	344
Length flanged version (mm)		159 (threated)	190	216	230	216	283	283	305	305	325	406	470	635	749	350	406
Length orifice plate (mm)			16	16	16	16	16	16	16	20	20	20	20	20	20	20	20

Other characteristics: www.RAPHAEL-valves.com

└ **Pilot adjustment ranges:** 0.5 to 4 bar / 0.5 to 6 bar (standard) / 2 to 10 bar / 2 to 16 bar.

APPLICATION PROVIDED BY RAF

└ **RAF Rate of flow** limits the flow to fill a reservoir or before a treatment plant, or before an industrial area, in order to avoid excessive demand that may threaten the stability of the complete network. It is also a solution to balance flow rate in a water network and to mix different water qualities.

└ **RAF Overspeed** avoids reservoir drain in case of major leak, saves the resource and guaranties the resupply after repair. It also protects strategic areas like highways, railway lines, urban infrastructures and ski slopes.

GOOD TO KNOW

└ RAF exists also in angular version: RAF-A.

└ RAF is available in reduced bore version for DN80/100/125/150.

└ Pre-sales and after-sales support departments help to define the right solution (tailor-made) and the right sizing.

└ Automatic control valves are scalable by adding or removing functions, and by modifying pilot spring range.

└ RAF leads the market in Fire Protection Regulation.

AUTOMATIC CONTROL VALVES BY RAPHAEL

RAPHAEL RANGE

RAY PRESSURE

RAY PRESSURE offers the possibility of controlling an upstream pressure, a downstream pressure or both and brings the advantages of a double chamber.

RAY PRESSURE REDUCING reduces and stabilises a higher inlet pressure to a steady lower and pre-set downstream pressure, regardless of flow and/or inlet pressure variations.

RAY PRESSURE SUSTAINING insures a minimum and pre-set inlet pressure regardless of flow and/or downstream pressure variations and can be also used as a Pressure Relief Valve to dissipate excess system pressure.



MARKETS



Water treatment



Water transmission



Water distribution network



Industrial water applications

TECHNICAL DATA

Fluid: drinking water or 2mm filtered untreated water

Nominal Diameter (DN):
from 40 to 250mm (2" to 10")
Available connections: flanged

Nominal Pressure (PN):
16 bar

Medium Temperature: up to 65°C

Body material: ductile iron

Coating: Cast iron with Rilsan (Nylon11), Epoxy, Enamel

APPROVALS

W/O

ADVANTAGES

DOUBLE CHAMBER AND Y TYPE

Develop maximum power, immediate response and high hydraulic performances even if the pressure differential is very low.

SIMPLICITY

Of the internal mechanism reduces maintenance frequency and insures accuracy: This no spring control valve has a double-chamber rubber fabric diaphragm with a unique plug per diameter made of hard rubber on steel core with special profile, allowing very fine flow regulation.

CAVITATION FREE OPERATION

Is insured by the design of the main valve and the combination of a special plug and stainless steel seat.

CHARACTERISTICS

└ **Double-chambered actuator** and internal mechanism can be removed as on integral unit and conversion to single-chambered can be done on site.

└ **Y type** – Insures high flow efficiency with very low head loss.

└ **Diaphragm** – “No spring” patented diaphragm.

└ **Unique universal rubber plug** – For all work conditions.

└ **Pilots, solenoids**, fittings and pipes can be in brass/copper, stainless steel or polyethylene plastic and nylon.

└ Pilot circuit is protected by a **self-flushing finger filter**, installed in the water inlet of the valve: maintenance free.

└ **Combination with other pilots or solenoids** is possible to meet all demands.

Diameter in inch (mm equivalence)	2" (50)	3" (80)	4" (100)	6" (150)	8" (200)	10" (250)
Kv (m ³ /h)	60	140	200	570	840	1500
Length (mm)	203	254	305	406	521	635
Height (mm)	298	350	380	470	650	780
Weight flanged version (kg) W/O pilot circuit	13	22	33	71	122	212

Other: DN50 available threaded



RAY PRESSURE SUSTAINING



RAY PRESSURE REDUCING/
SUSTAINING

└ Pilot adjustment ranges:

- Pressure reducing or pressure sustaining: 2 to 10 bar / 0.5 to 4 bar / 0.5 to 6 bar / 2 to 16 bar.
- Both 2 to 10 bar as a standard.

APPLICATION PROVIDED BY RAF

└ **RAY Pressure Reducing** – Reducing the pressure on the main network, regulating multi-level networks, protecting the network against high upstream pressure variations, emergency supply from one pressure zone to another, pressure control on membrane treatment plant, reducing leakage thanks to the control of the supplying pressure.

└ **RAF Pressure Sustaining (or relief):**

- Sustaining the pressure in the network regardless of flow demand or prioritizing pressure zones (in-line installation): heighten a piezometrical line to supply a high located area, protecting a pump...
- Protecting the network against excessive pressure (off-line installation), protecting a pump from no flow rate operation.

GOOD TO KNOW

- └ Pre-sales and after-sales support departments help to define the right solution (tailor-made) and the right sizing.
- └ Automatic control valves are scalable by adding or removing functions, and by modify pilot spring range.

AUTOMATIC CONTROL VALVES BY RAPHAEL

RAPHAEL RANGE

RAY LEVEL

RAY LEVEL offers different possibilities for controlling the level with the altitude pilot or float pilot, operating as an on/off valve or modulating valve, and brings the advantages of a double chamber.

The wide range of altitude and float pilot provides the right solution regarding installation, design and customer requirements. Coupled with double-chambered design, RAY level is the solution when inlet pressure is low and critical for the others.

Filling a tank without overflowing and preserving the inlet network are insured for all cases.



MARKETS



Water treatment



Water transmission



Water distribution network



Industrial water applications

TECHNICAL DATA

Fluid: drinking water or 2mm filtered untreated water

Nominal Diameter (DN):

from 50 to 250mm (2" to 10")

Available connections: flanged

Nominal Pressure (PN):

Nominal: 16 bar

Medium Temperature: up to 65°C

Body material: ductile iron

Coating: Cast iron with Rilsan (Nylon11), Epoxy, Enamel

APPROVALS

W/O

ADVANTAGES

FLOAT PILOTS

For modulating (float level control) or on/off (bi-level control) combining the simplicity of their mechanism with a high accuracy. Both have to be mounted in the tank (offset paving).

ALTITUDE PILOTS

For on/off control are mounted on the control valve, which provides for easy installation and maintenance by a direct access to setting(s).

DOUBLE CHAMBER AND Y TYPE

Develop maximum power, immediate response and high hydraulic performances even if the pressure differential is very low.

CHARACTERISTICS

└ **Double-chambered actuator and internal mechanism** can be removed as an integral unit and conversion to single-chambered can be done on site.

└ **Y type** – Insures high flow efficiency with very low head loss.

└ **Diaphragm** – “No spring” patented diaphragm.

└ **Unique universal rubber plug** – For all work conditions.

└ Pilot circuit is protected by a **self-flushing finger filter**, installed in the water inlet of the valve: maintenance free.

└ **Combination with other pilots or solenoids** is possible to meet all demands.

Diameter in inch (mm equivalence)	2" (50)	3" (80)	4" (100)	6" (150)	8" (200)	10" (250)
Kv (m ³ /h)	60	140	200	570	840	1500
Length (mm)	203	254	305	406	521	635
Height (mm)	298	350	380	470	650	780
Weight flanged version (kg) W/O pilot circuit	13	22	33	71	122	212

Other: DN50 available threaded

└ **Altitude pilot range:** 8 / 15 / 30m.



RAY ALTITUDE LEVEL

APPLICATION PROVIDED BY RAY LEVEL

└ **RAY ON/OFF level (float or altitude)** – Filling of reservoirs with low consumption, to allow water renewal in the reservoir. Filling of reservoirs from pumping stations.

└ **RAY modulating float level** – Insure a complete full time filling of the reservoir to keep the maximum volume at disposal. By admitting flow into the tank in direct proportion to the flow out of the tank, pressure and velocity variations in the inlet network are reduced.

GOOD TO KNOW

└ RAY on/off level potentially delivers a high flow rate. Taking this point into consideration is important for preserving the inlet network, and could require an additional control on the same valve as pressure sustaining or rate of flow limit.

└ RAY electric level float is another way to control a level (see picture).

└ Pre-sales and after-sales support departments help to define the right solution (tailor-made) and the right sizing.

└ Automatic control valves are scalable by adding or removing functions, and by modifying pilot spring range.



RAY ELECTRIC LEVEL FLOAT

AUTOMATIC CONTROL VALVES BY RAPHAEL

RAPHAEL RANGE

RAY RATE OF FLOW AND OVERSPEED

RAY RATE OF FLOW limits the maximum flow rate by controlling the differential pressure between the inlet and the outlet of an orifice plate, regardless of pressure variations.

RAY OVERSPEED closes automatically and irreversibly in an adjustable time as soon as the flow exceeds a pre-set and adjustable value, regardless of pressure variations. As standard, a manual reset is required.



MARKETS



Water treatment



Water transmission



Water distribution network



Industrial water applications

TECHNICAL DATA

Fluid: drinking water or 2mm filtered untreated water

Nominal Diameter (DN):
from 50 to 250mm (2" to 10")
Available connections: Flanged

Nominal Pressure (PN):
Nominal: 16 bar

Medium Temperature: up to 65°C

Body material: ductile iron

Coating: Cast iron with Rilsan (Nylon11), Epoxy, Enamel

APPROVALS

W/O

ADVANTAGES

DOUBLE CHAMBER AND Y TYPE

Develop maximum power, immediate response and high hydraulic performances even if the pressure differential is very low.

SIMPLICITY OF THE INTERNAL MECHANISM

Reduces maintenance frequency and insures accuracy: This no spring control valve has a double-chamber rubber fabric diaphragm with a unique plug per diameter made of hard rubber on steel core with special profile, allowing very fine flow regulation.

CAVITATION FREE OPERATION

is insured by the design of the main valve and the combination of a special plug and stainless steel seat.

CHARACTERISTICS

└ **Double-chambered actuator and internal mechanism** can be removed as an integral unit and conversion to single-chambered can be done on site.

└ **Y type** – Insures high flow efficiency with very low head loss.

└ **Diaphragm** – “No spring” patented diaphragm.

└ **Unique universal rubber plug** – For all work conditions.

└ **Pilots, solenoids, fittings and pipes** can be in brass/copper, stainless steel or polyethylene plastic and nylon.

└ Pilot circuit is protected by a **self-flushing finger filter**, installed in the water inlet of the valve: maintenance free.

└ **Combination with other pilots or solenoids** is possible to meet all demands.

Diameter in inch (mm equivalence)	2" (50)	3" (80)	4" (100)	6" (150)	8" (200)	10" (250)
Kv (m ³ /h)	60	140	200	570	840	1500
Length (mm) + Orifice plate	203 + 12	254 + 12	305 + 12	406 + 12	521 + 12	635 + 12
Height (mm)	298	350	380	470	650	780
Weight flanged version (kg) W/O pilot circuit	13	22	33	71	122	212

└ **Pilot adjustment ranges:** 0.5 to 4 bar / 0.5 to 6 bar (standard) / 2 to 10 bar / 2 to 16 bar.

APPLICATION PROVIDED BY RAF

└ **RAY Rate of flow** – Limits the flow to fill a reservoir or before a treatment plant, or before an industrial area, in order to avoid excessive demand that may threaten the stability of the complete network. It is also a solution to balance flow rate in a water network and to mix different water qualities.

└ **RAY Overspeed** – Avoids reservoir drain in case of major leak, saves the resource and guarantees the resupply after reparation. It also protects strategic areas like highways, railway lines, urban infrastructures and ski slopes.

GOOD TO KNOW

└ Pre-sales and after-sales support departments help to define the right solution (tailor-made) and the right sizing.

└ Automatic control valves are scalable by adding or removing functions, and by modifying pilot spring range.

AUTOMATIC CONTROL VALVES BY RAPHAEL

RAPHAEL RANGE

G TYPE

G TYPE is a unique type of automatic control valve in the TALIS range. Effectively, this valve is a piston valve, while others are diaphragm valves.

In order to provide very good resistance to cavitation and to withstand high restriction levels at a wide range of flow and diameters, G TYPE is heavy-duty, available in PN64, and different alloys are offered as well as different options. As a classic automatic control valve, G TYPE is piloted with the same range of RAPHAEL pilots (in common with RAF and RAY). This enables to control pressure, flow or level in high load networks.



MARKETS



Irrigation



Water treatment



Water transmission



Water distribution network



Desalination



Industrial water applications



Dams and hydro power



Fire protection network

TECHNICAL DATA

Fluid: raw water or filtered water

Nominal Diameter (DN):
from 50 to 800mm (2" to 32")

Flange drilling according to customer's demand

Nominal Pressure (PN):
16 bar to 64 bar

Medium Temperature: up to 85°C

Body material: ductile iron, stainless steel or other alloys on request

Coating: epoxy or enamel

APPROVALS

W/O

ADVANTAGES

LONG LIFE SYSTEM

Insured by the design and materials of the body and the internal mechanism which offers different kind of plug, determined, in function, by the hydraulic requirements. The piston is also guided in a specific cylinder.

METAL CONSTRUCTION

The metal construction of the piston enables a smooth operation, with no vibrations.

EASY SETTINGS

Done only by screwing (to increase the set point value) or unscrewing (to decrease the set point value) the screw on the top of the pilot.

CHARACTERISTICS

- └ **Piston valve** with no diaphragm, ideal for very high pressure differential.
- └ **Large outlet area** after the plug dissipates cavitation.
- └ **Regulation in high restriction rates** is obtainable by a half restricted plug that combines cost effective protection to both the seat and seal, keeping sensitive parts from the passage of high velocity water.
- └ **Low corrosion rates** are obtainable due to high quality stainless steel internal parts and high quality epoxy or enamel.
- └ **Fasteners** – self-retaining chrome-plated steel nuts and hex stainless steel bolts enable easy access and keep it corrosion free.
- └ **Pilots, solenoids, fittings and pipes** are available in different materials.
- └ **Combination with different pilots** – Possible to meet all demands.



G TYPE PRESSURE
REDUCING

└ **Pilots adjustment ranges** – See RAF or RAY ranges.

GOOD TO KNOW

- └ Pre-sales and after-sales support departments help to define the right solution (tailor-made) and the right sizing.
- └ Automatic control valves are scalable by adding or removing functions, and by modifying pilot spring range.

Diameter in inch (mm equivalence)	2" (50)	2" 1/2 (65)	3" (80)	4" (100)	6" (150)	8" (200)	10" (250)	12" (300)
Kv (m³/h)	45	87	105	180	380	670	1010	1200
Weight (kg) W/O pilot circuit	15	54	54	62	104	167	250	280
Length (mm)	210	310	310	356	458	510	660	860
Height (mm)	510	360	360	450	550	600	650	690

Diameter in inch (mm equivalence)	14" (350)	16" (400)	18" (450)	20" (500)	24" (600)	28" (700)	30" (750)	32" (800)
Kv (m³/h)	1820	2400	3600	4100	5800	8900	9300	10100
Weight (kg) W/O pilot circuit	400	790	1150	1370	1690	2300	2900	3460
Length (mm)	980	1100	1250	1250	1450	1570	1620	1710
Height (mm)	920	980	1080	1080	1300	1550	1750	1840



AUTOMATIC CONTROL VALVES BY RAPHAEL

RAPHAEL RANGE

ELECTRICAL CONTROL RANGE

All automatic control valves in RAPHAEL range can also be controlled by solenoids, optionally combined with pilot(s).

RAPHAEL electrical control range retains all the benefits of the different designs: RAF-P, RAF, RAY, G.

Step-by-step control and on/off control with solenoid(s) are the two main solutions. Combined with the design of the main valve, whatever it is, established for modulating, RAPHAEL electrical control offers a much longer service lifetime than motorized butterfly or gate valves.

Pressure, flow rate and level can be controlled by using an external controller or a simple button control.



MARKETS



Irrigation



Water treatment



Water transmission



Water distribution network



Desalination



Industrial water applications



Dams and hydro power



Fire protection network

TECHNICAL DATA

Fluid: drinking water or 2mm filtered untreated water

Voltage: 6/12/24/48/110/230V direct or alternative

Medium Temperature: up to 70°C

Other: see technical data from the chosen control valve type

APPROVALS

W/O

ADVANTAGES

SOLENOIDS

Available in different materials, specially dedicated for irrigation or freshwater, desalination treatment plant etc.

FREELY SETTINGS

As a simple actuator, rules integrated in the remote system are fully changeable. As a standard control valve, taps on the pilot circuit allow the operator to take back control.

LOW ELECTRICAL CONSUMPTION

With solenoids (6/12/24V...) for all diameters (up to 1000mm).

CHARACTERISTICS

See characteristics from the chosen control valve type.



APPLICATION EXAMPLES

└ **RAPHAEL Electrical Pressure Reducing** – Reducing the pressure on the main network by using a controller (regulation-based as a function of time or flow).

└ **RAPHAEL Electrical Flow Control** – Regulating a flow rate by using a controller and generally a flow meter.

└ **RAPHAEL Electrical Level control** – Generally used with an on/off HYDROSTAB Electrical control valve to open or close the main valve regarding the level in the tank.

GOOD TO KNOW

└ Pre-sales and after-sales support departments help to define the right solution (tailor-made) and the right sizing.

└ Automatic control valves are scalable by adding or removing functions, and by modifying pilot spring range.

└ In case of loss of power, it is possible to choose the closing, opening or current position. In addition, a second hydraulic pilot circuit could be put into service by a normally opened solenoid.