L6190B2006U Honeywell

Themostat réglable Aquastat pour canalisation ou cuve - 25 à 95° - SPDT - Diff 8K - avec collier
Réf L6190B2006U   **45.74€**TTC*
https://www.domomat.com/24029-themostat-reglable-aquastat-pour-canalisation-ou-cuve-25-a-95-spdt-diff-8k-avec-collier-honeywell-l6190b2006

Themostat réglable Aquastat pour canalisation ou cuve - 25 à 95° - SPDT - Diff mauel - avec collier
Réf L6190C2004U   **50.57€**TTC*
https://www.domomat.com/24250-themostat-reglable-aquastat-pour-canalisation-ou-cuve-25-a-95-spdt-diff-mauel-avec-collier-honeywell-l6190c2004u.html
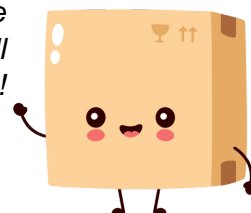
Themostat réglable Aquastat montage en façade - 40 à 110° - SPST - Diff 4 à 10K - sonde 1,5m
Réf L6189A2043U   **41.04€**TTC*
https://www.domomat.com/24251-themostat-reglable-aquastat-montage-en-facade-40-a-110-spst-diff-4-a-10k-sonde-15m-honeywell-l6189a2043

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Thermostats Honeywell
chez Domomat !

* : Prix sur le site Domomat.com au 29/04/2024. Le prix est susceptible d'être modifié.
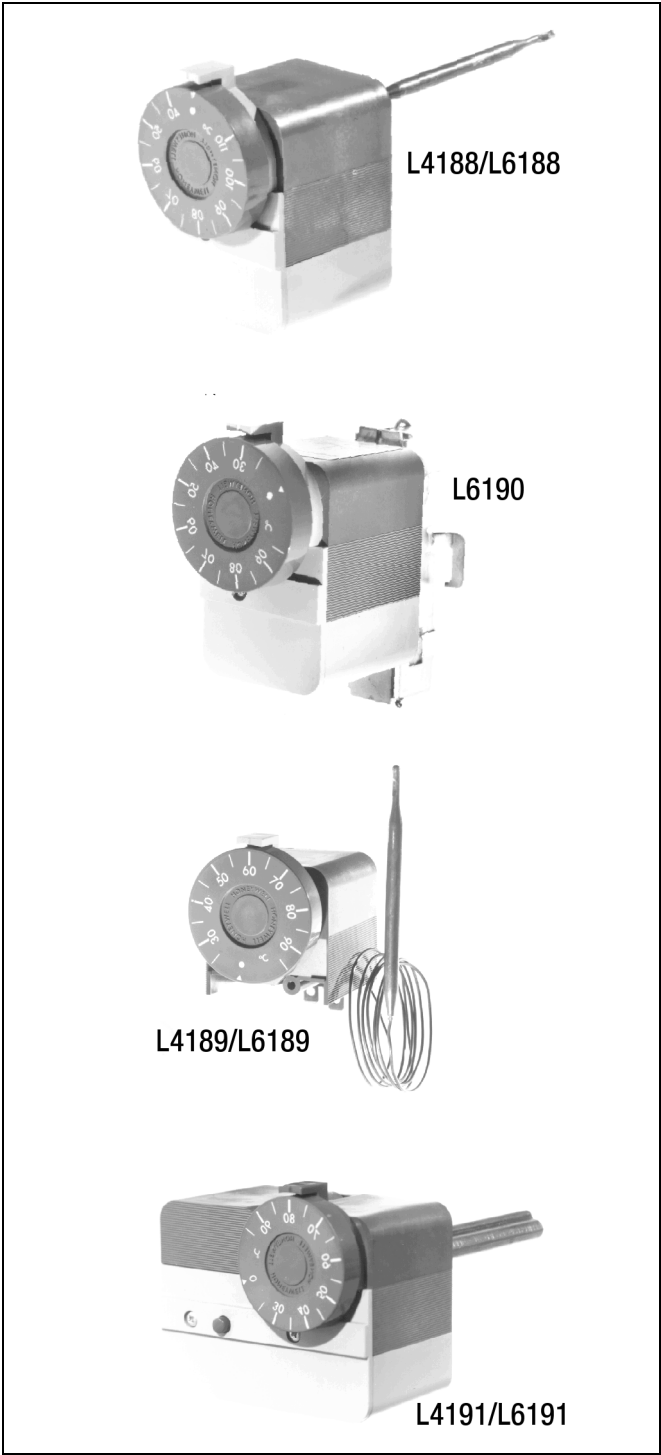
Honeywell

L41../L61.. SERIES

THERMOSTAT (AQUASTAT)

APPLICATION

The L41../L61.. series aquastats are primarily designed for application on water filled heating systems and systems for hot water supply, mainly domestic use.

L4188/L6188

L6190

L4189/L6189

L4191/L6191

Contents

EN2R-9005 0406R3-NE

DESCRIPTION OF DEVICE FUNCTIONS

Aquastats thermostats

Honeywell manufactures a coprehensive range of water temperature thermostats (trade name Aquastat) for controlling and limiting boiler water temperature in hydronic heating systems.

These sensitive, fast response devices are available in either direct, panel or surface mount versions.

Sensing element

The liquid filled sensing element, including well or sensor assembly, responds to temperature changes of water in a heating system.

The sensor element has a diaphragm type power head connected to a tube type capsule, through a small bore capillary.

Expansion of the liquid, which completely fills the sensing element, is the means of motion of the diaphragm.

The sensor assembly, used on the surface mounted aquastat, envelopes the sensing capsule by means of an aluminium heat shield for better heat conduction, an insulator of glasswool and a mounting bracket.

Control mechanism

The control mechanism is mounted into the thermoplastic housing. The mechanism transfers the motion of the diaphragm to a snap action switch (Micro Switch) and also provides the facility to adjust the temperature level on which the Micro Switch has to operate.

The mechasnism consists of a two piece lever with calibration screw, a plastic actuator for the switch, a cam and shaft for the set-point adjustment, a loading spring for cam and levers and a pad with pushplate to transfer the diaphragm motion to the lever.

Knob with scale and index

The plastic knob with scale and index enables the user to adjust the Aquastat on a selected temperature setting within its range. The knob fits on the cam and stays on it due to the force of the spring on the nave of the knob.

This spring force enables the installer to pull the knob from the cam without the use of tools.

The hole in the knob and the shaft of the cam are provided with a flat side which allows mounting of the knob only in one position in order to maintain the calibration.

The plastic index will be fastened by means of two M4 thread forming screws on the housing.

Micro Switch

The Micro Switch mechanism is also mounted into the plastic housing. the mechanism consists of a snap action spring type PL with contacts and a moveable or a fixed and a stationary contact bracket.

The Micro Switch mechanism is intended to control electrically a burner, a relay, etc. in dependency of the temperature changes in a heating system.

On choice the Micro Switch mechanism can be delivered with the following contact arrangements:

- **S**ingle **P**ole **S**ingle **T**hrow,
  C-1 breaks on temperature rise
- **S**ingle **P**ole **D**ouble **T**hrow,
  C-1 breaks on temperature rise.
  C-2 makes on temperature rise.

The contacts are connected to 6.3 mm terminals which are extending from the outside of the Aquastat housing.

Cover and conduit entries

The housing(s) of the Aquastat can be provided with conduit boxes which are provided with holes to fit Pg 13.5 conduits. To obtain easy wiring possibilities these boxes can be mounted or disconnect without the use of tools (hook in approach).

The conduit box is locked with the front cover, which is fastened by means of an M3 thread forming screw. Also the top cover is locked by the front cover.

Set-point stops

On request, the Aquastat can be delivered with a high and low limit stop. The purpose of these stops is to provide the user with the facility to choose a maximum and/or minimum setting on the scale.

The stop is situated on the rear side of the setting knob. Adjustment is only possible after removal of the knob.

Manual or tool reset

On request, the Aquastat can be delivered with a manual reset or a tool reset feature.

The tool reset feature is covered by the front cover.

Operating of the reset button is only possible after removal of the front cover.

The manual reset button potrudes the front cover of the Aquastat and resetting can be done without the use of a tool.

Adjustable differential

On request, it is possible to deliver the Aquastat with an adjustable switch differential.

The adjustable switch differential feature consists of a plastic adjusting dial with pointer, which is connected to a moveable contact.

Turning of the dial changes the contact gap of the Micro Switch and thus the differential.

The dial is situated under the front cover or behind the panel. Adjustable differential feature is only applicable on **controllers** and **recycling limit controls**

DESCRIPTION

The L41../L61.. series aquastats are sensitive water temperature control, which are provided with a liquid filled sensing system.
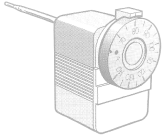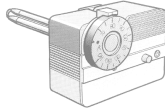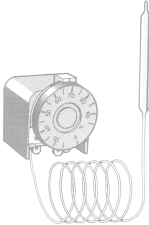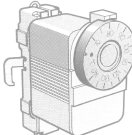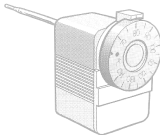
The following main types are available:

- **Single, panel mount immersion**
  Aquastat with remote bulb to select the most favourable position on a boiler or vessel.
- **Single, direct mounted immersion**
  Aquastat with insulating cover to protect against accidental touching of live parts.
- **Dual, direct mounted immersion**
  Dual Aquastat and consisting of two basic single units, which are mounted together and protected by one common cover and using one well for the two sensors.
- **Single, surface mounted**
  The sensor of this type is to be mounted directly on the surface of a boiler or pipe in a heating system. The Aquastat mechanism is directly attached to this sensor.

The L41../L61.. series aquastats are primarily designed for application on water filled heating systems and systems for hot water supply, mainly domestic use.

The L41../L61.. series aquastats can be divided in the following main types:

- **Controller**
  Controls the water temperature in accordance with the setting of an external knob (TÜV-type TR)
- **Recycling limit control**
  Limits the water temperature below or above an adjusted level and resets automatically. This type has a greater differential and no external knob (TÜV-type TW).
- **Thermal cut-out with external reset button (manual reset)**
  Limits the water temperature on a maximum adjusted level. This type does not reset automatically and it does not have an external knob.
- **Thermal cut-out with internal reset button (tool reset)**
  Limits the water temperature on a maximum adjusted level. This type does not reset automatically and it does not have an external knob.

OVERVIEW/SELECTION GUIDE

Application	Single Aquastat thermostats		Dual Aquastat thermostats
	Controller or limiter thermostat		Controller and limiter thermostat with standard sensing element
Direct mount (immersion)	L4188A, B, C 25 ... 95°C 40 ... 110°C 70 ... 140°C	L6188A, B, C 25 ... 95°C 40 ... 110°C 70 ... 140°C	L4191A, B and L6191A, B 25 ... 95°C 50 ... 95°C 40 ... 110°C 70 ... 140°C
Panel mount (immersion)	L4189A, B, C 25 ... 95°C 40 ... 110°C 110 ... 230°F	L6189A, B, C 25 ... 95°C 40 ... 110°C 70 ... 140°C 110 ... 230°F	
Surface mount (with mounting strap)	L6190A, B, C 25 ... 95°C		
Replacement aquastat (immersion)	L6188A 2044 40 ... 110°C		

FEATURES

- 6.3 mm quick connect terminals for receptacles
- Mounting either in a horizontal or vertical position.
- Housing is provided with two mounting holes which are suitable for M4 thread forming screws, for mounting on a control panel.
- Cable entry in the conduit box is suitable for Pg 13.5 conduit or is provided with a plastic grommet (at choice).
- The high and low setpoint stops are field adjustabe with steps of 2.5°C.
- Capillary available in 350 mm (optional), 1000 mm (standard), 1500 mm (optional) and 2000 mm (optional) length.
- Surface mounted Aquastat can be mounted on cylinders of 300 ... 460 mm diameter as well on pipes from 40 ... 150 mm diameter.
- Wide range of well assemblies available.

L4188 - L6188 SINGLE AQUASTAT - DIRECT IMMERSION
APPLICATIONS AND ORDERING INFORMATION

L4188/L6188
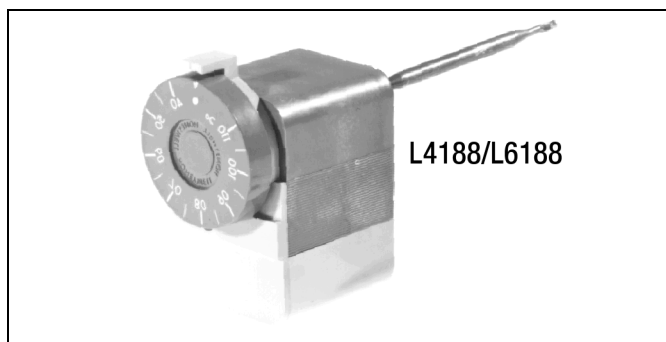
Application

L4188 and L6188 are sensitive, immersion-type water temperature thermostats for controlling and limiting boiler water temperature in hydronic heating systems.

The thermostat has a liquid-filled sensing element which fits into an immersion well (order separately) for direct mounting into a boiler, tank or other vessel.

Ordering information

O.S. number	Application	Temperature range	Switch differential (K)	Switch type	Setting means	Remarks (see notes)
L4188A 2015	Controller	25 ... 95°C	4	SPST	External knob	-
L4188A 2023	Controller	40 ... 110°C	4	SPST	External knob	5
L4188A 2031	Controller	25 ... 95°C	4	SPST	External knob	5
L4188B 2005	Controller	40 ... 110°C	4	SPST	Internal screw	4 - 5
L4188B 2013	Controller	25 ... 95°C	4	SPST	Internal screw	4 - 5
L6188A 2002	Controller	25 ... 95°C	4 ... 10 (adjustable)	SPDT	External knob	6
L6188A 2010	Controller	40 ... 110°C	4 ... 10 (adjustable)	SPDT	External knob	6
L6188A 2028	Controller	25 ... 95°C	4 ... 10 (adjustable)	SPDT	External knob	3
L6188A 2036	Controller	70 ... 140°C	4 ... 10 (adjustable)	SPDT	External knob	6
L6188A 2044	Controller	40 ... 110°C	4 ... 10 (adjustable)	SPDT	External knob	Tradeline 1 - 7
L6188B 2000	Controller	25 ... 95°C	4	SPDT	Internal screw	4
L6188B 2018	Controller	70 ... 140°C	4 ... 10 (adjustable)	SPDT	Internal screw	3 - 7
L6188B 2026	Controller	40 ... 110°C	4 ... 10 (adjustable)	SPDT	Internal screw	
L6188B 2034	Controller	25 ... 95°C	4 ... 10 (adjustable)	SPDT	Internal screw	6 - 7
L6188B 2042	Controller	25 ... 95°C	4	SPDT	Internal screw	
L6188C 2008	Limiter	70 ... 140°C	Manual reset	SPDT	Internal screw	7
L6188C 2016	Limiter	25 ... 95°C	Manual reset	SPDT	Internal screw	6 - 7

1 = High limit stop
2 = High limit stop at 60°C
3 = Capilliary length 1500 mm and mounting bracket
4 = Without cover and conduit box
5 = Quick connect terminals only
6 = With well assembly
7 = With push-in plug

L4188 - L6188 SINGLE AQUASTAT - DIRECT IMMERSION

Specifications

Ambient temperature limits
0 ... 70°C

Electrical connection
6.3 mm spade terminals

Enclosure
IP40

Electrical rating
10 A at 250 Vac, resistive load
2.5 A at 250 Vac, inductive load
15 A at 250 Vac, locked motor
250 mA at 30 mVdc (special option)

Terminal data
C-1 breaks on temperature rise (SPDT and SPST)
C-2 makes on temperature rise (SPDT only)
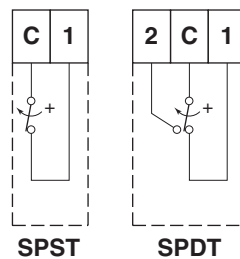
Accessories

Immersion wells, see page 18
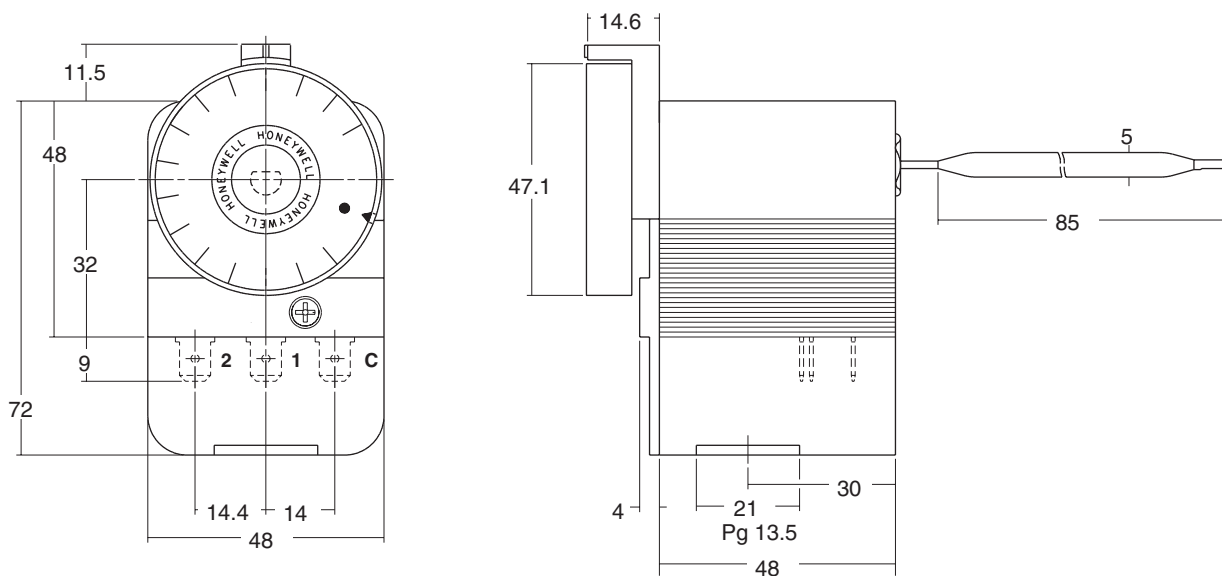

Fig. 1. Internal schematics L4188/L6188

Fig. 2. Dimensional drawing L4188/L6188

L4189 - L6189 SINGLE AQUASTAT - PANEL MOUNTING (IMMERSION) APPLICATIONS AND ORDERING INFORMATION

L4189/L6189

Application

L4189 and L6189 are sensitive, immersion-type water temperature thermostats for controlling and limiting boiler water temperature in hydronic heating systems.

These thermostats are designed for panel mounting and are supplied with a remote bulb and a liquid-filled sensing element which fits into an immersion well (order separately) for mounting into a boiler, tank or other vessel.
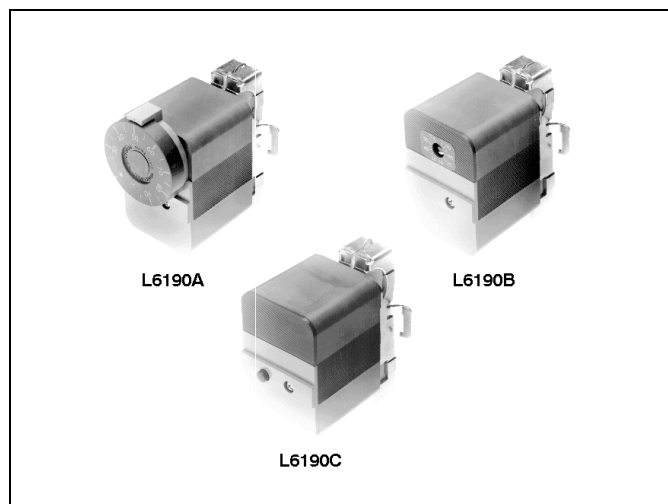
Ordering information

O.S. number	Application	Temperature range	Switch differential (K)	Switch type	Setting means	Capillary length (mm)	Remarks (see notes)
L4189A 2006	Controller	25 ... 95°C	4	SPST	External knob	1000	2
L4189A 2014	Controller	25 ... 95°C	4	SPST	External knob	1500	-
L4189A 2089	Controller	25 ... 95°C	4	SPST	External knob	1000	1 - 4 - 5
L4189A 2097	Controller	25 ... 95°C	4	SPST	External knob	1000	5
L4189A 2105	Controller	25 ... 95°C	4	SPST	External knob	350	1 - 6
L4189B 2012	Controller	100 ... 230°F	4	SPST	Internal screw	1000	3
L6189A 2001	Controller	25 ... 95°C	8	SPDT	External knob	1500	2
L6189A 2019	Controller	25 ... 95°C	4	SPDT	External knob	1500	-
L6189A 2043	Controller	40 ... 110°C	4 ... 10 (adjustable)	SPDT	External knob	1500	-
L6189A 2068	Controller	25 ... 95°C	4	SPDT	External knob	1000	2
L6189A 2092	Controller	110 ... 230°F	7 ... 18°F (adjustable)	SPDT	External knob	1500	1
L6189A 2118	Controller	110 ... 230°F	15°F	SPDT	External knob	1500	1
L6189A 2134	Controller	110 ... 230°F	7 ... 18°F (adjustable)	SPDT	External knob	1500	1
L6189A 2142	Controller	110 ... 230°F	15°F	SPDT	External knob	2000	1
L6189A 2159	Controller	110 ... 230°F	7 ... 18°F (adjustable)	SPDT	External knob	2000	1
L6189B 2009	Controller	25 ... 95°C	4	SPDT	Internal screw	1000	-
L6189B 2025	Controller	25 ... 95°C	4	SPDT	Internal screw	1000	2, Tradeline
L6189B 2041	Controller	40 ... 110°C	8	SPDT	Internal screw	1500	-
L6189C 2007	Limiter	40 ... 110°C	Manual reset	SPDT	Internal screw	1500	-
L6189C 2023	Limiter	110 ... 230°F	Manual reset	SPDT	External knob	1500	-
L6189C 2031	Limiter	110 ... 230°F	Manual reset	SPDT	External knob	2000	-

1 = High limit stop
2 = Without knob and index
3 = With mounting bracket
4 = With conduit box
5 = With cable connector
6 = Low limit stop

L4189 - L6189 SINGLE AQUASTAT - PANEL MOUNTING (IMMERSION)
SPECIFICATIONS AND DIMENSIONS

Specifications

Ambient temperature limits
0 ... 70°C

Electrical connections
6.3 mm spade terminals

Enclosure
IP40

Electrical rating
10 A at 250 Vac, resistive load
2,5 A at 250 Vac, inductive load
15 A at 250 Vac, locked motor
250 mA at 30 mVdc (special option)

Terminal data
C-1 breaks on temperature rise (SPDT and SPST)
C-2 makes on temperature rise (SPDT only)

Capilliary length
350 mm, 1000 mm, 1500 mm and 2000 mm

Accessories
Immersion wells, see page 18

Fig. 3. Internal schematics L4189/L6189

Fig. 4. Dimensional drawing L4189/L6189

L6190 SINGLE AQUASTAT - SURFACE MOUNTING
APPLICATION AND ORDERING INFORMATION

L6190A

L6190B

L6190C

Application

The L6190 is a sensitive water temperature thermostat designed for surface mounting on domestic hot water cylinders or pipe work. The SPDT switching action is accomplished by a snap-action microswitch actuated by the temperature sensing element.

The L6190 is supplied complete with mounting strap for rapid and easy installation. Draining of the system or tapping of the cylinder or pipe work is not required. The required temperature control point is easily set using a screw driver.

Ordering information

O.S. number	Application	Temperature range	Switch differential (K)	Switch type	Setting means	Strap length (mm)
L6190A 2016	Surface mounting	25 ... 95°C	8	SPDT	External knob	250
L6190B 2006	Surface mounting	25 ... 95°C	8	SPDT	External setting	2000
L6190B 2014	Surface mounting	25 ... 95°C	12	SPDT	External setting	2000
L6190B 2022	Surface mounting	25 ... 95°C	4	SPDT	External setting	2000
L6190B 2030	Surface mounting	25 ... 95°C	4 ... 10 (adjustable)	SPDT	Internal setting	250
L6190C 2004	Surface mounting	25 ... 95°C	Manual reset	SPDT	Internal setting	2000
L6190C 2012	Surface mounting	25 ... 95°C	Manual reset	SPDT	Internal setting	2000

L6190 SINGLE AQUASTAT - SURFACE MOUNTING

SPECIFICATIONS AND DIMENSIONS

Specifications

Ambient temperature limits
0 ... 70°C

Electrical connection
6.3 mm spade terminals or screw terminals

Enclosure
IP40

Electrical rating
10 A at 250 Vac, resistive load
2,5 A at 250 Vac, inductive load
15 A at 250 Vac, locked motor

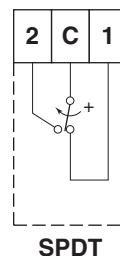**Terminal data**
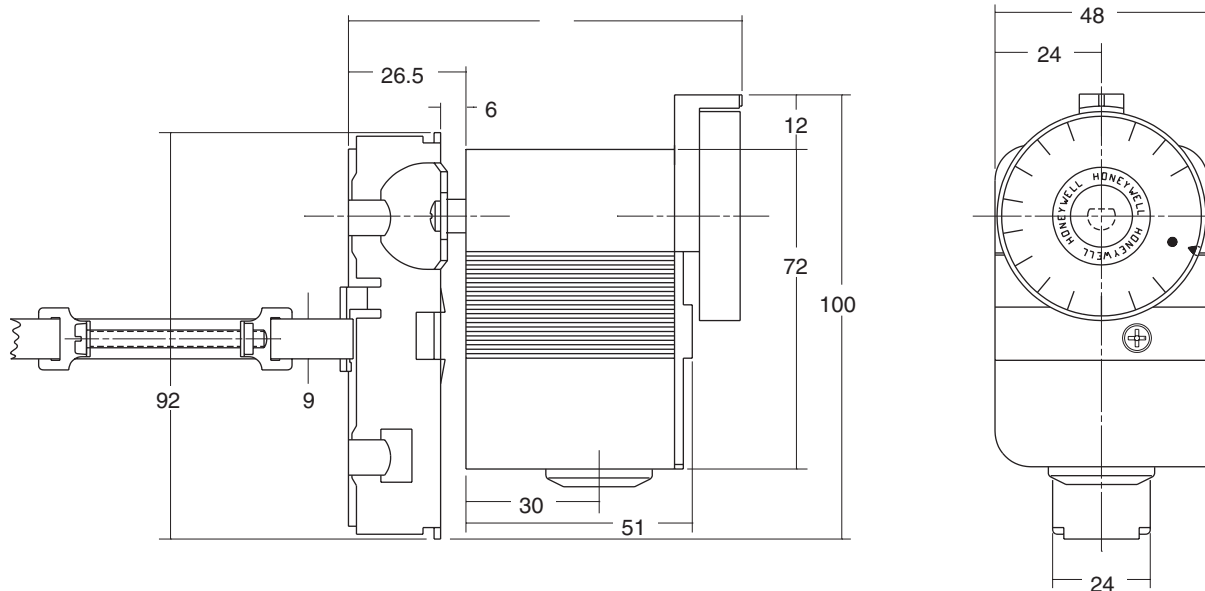C-1 breaks and C-2 makes on temperature rise

Capilliary length
55 mm

SPDT

Fig. 5. Internal schematic L6190

Fig. 6. Dimensional drawing L6190

EN2R-9005 0406R3-NE

L4191 - L6191 DUAL AQUASTAT - DIRECT IMMERSION
APPLICATION AND ORDERING INFORMATION

L4191/L6191

Application

L4191 and L6191 are dual units in which two independently working water temperature thermostats are housed in one cover. Each thermostat has a separate liquid filled sensing element which fits into a common immersion well for direct mounting into a boiler, tank or other vessel. One thermostat, with external temperature setting dial, acts as a controller while the other, with internal setting dial, acts as a high limit control.

Two main types are available, one with controller and auto recycling high limit and the other with controller and high limit with manual reset.

Ordering information L4191

O.S. number	Application	Temperature range	Switch differential (K)	Switch type	Setting means	Remarks (see notes)
L4191A 2002	Controller	25 ... 95°C	4	SPST	External knob	9
	Limiter	25 ... 95°C	4	SPST	Internal screw	9
L4191A 2010	Controller	25 ... 95°C	4	SPST	External knob	7 - 9 - 10
	Limiter	25 ... 95°C	4	SPST	Internal screw	9
L4191B 2018	Controller	70 ... 140°C	4	SPST	External knob	6
	Limiter	70 ... 140°C	Manual reset	SPDT	Internal screw	1
L4191B 2042	Controller	25 ... 95°C	4	SPST	External knob	5 - 9 - 10
	Limiter	25 ... 95°C	Manual reset	SPDT	Internal screw	9 - 10

1 =Gold contacts for thermocouple applications, without jumper
2 =High limit stop at 80°C/low limit stop at 60°C
3 =High limit stop at 82°C
4 =Low limit stop at 95°C
5 =Isolated neutral terminal
6 =High limit stop at 95°C
7 =With well assembly
8 =High limit stop
9 =With jumper
10 =With push-in plug
11 =Without knob and index

Ordering information L6191

O.S. number	Application	Temperature range	Switch differential (K)	Switch type	Setting means	Remarks (see notes)
L6191A 2007	Controller	40 ... 110°C	4 ... 10 (adjustable)	SPDT	External knob	6 - 7 - 9
	Limiter	40 ... 110°C	4	SPDT	Internal screw	9
L6191A 2015	Controller	25 ... 95°C	4	SPDT	External knob	3
	Limiter	101°C fixed	4	SPST	Internal setting	1
L6191A 2023	Controller	50 ... 95°C	4	SPDT	External knob	3
	Limiter	101°C fixed	4	SPST	Internal screw	1
L6191B 2005	Controller	25 ... 95°C	4	SPDT	External knob	7 - 9 - 10
	Limiter	40 ... 110°C	Manual reset	SPDT	Internal screw	9
L6191B 2013	Controller	40 ... 110°C	4	SPDT	External knob	5 - 6 - 7 - 9
	Limiter	40 ... 110°C	Manual reset	SPDT	Internal screw	9
L6191B 2021	Controller	70 ... 140°C	4 ... 10 (adjustable)	SPDT	External knob	4 - 7 - 9
	Limiter	70 ... 140°C	Manual reset	SPDT	Internal screw	9
L6191B 2047	Controller	70 ... 140°C	4 ... 10 (adjustable)	SPDT	External knob	4 - 7 - 9 - 11
	Limiter	70 ... 140°C	Manual reset	SPDT	Internal screw	9
L6191B 2054	Controller	25 ... 95°C	4	SPDT	External knob	7 - 10
	Limiter	50 ... 95°C	Manual reset	SPDT	Internal screw	

1 =Gold contacts for thermocouple applications, without jumper
2 =High limit stop at 80°C/low limit stop at 60°C
3 =High limit stop at 82°C
4 = Low limit stop at 95°C
5 = Isolated neutral terminal
6 = High limit stop at 95°C
7 = With well assembly
8 = High limit stop
9 = With jumper
10 =With push-in plug
11 = Without knob and index

L4191 - L6191 DUAL AQUASTAT - DIRECT IMMERSION
SPECIFICATIONS AND DIMENSIONS

Specifications

Ambient temperature limits
0 ... 70°C

Electrical connection
6.3 mm spade terminals

Enclosure
IP40

Electrical rating:
10 A at 250 Vac, resistive load
2,5 A at 250 Vac, inductive load
15 A at 250 Vac, locked motor
250 mA at 30 mVdc (special option)

Terminal data
C-1 breaks on temperature rise
C-2 makes on temperature rise
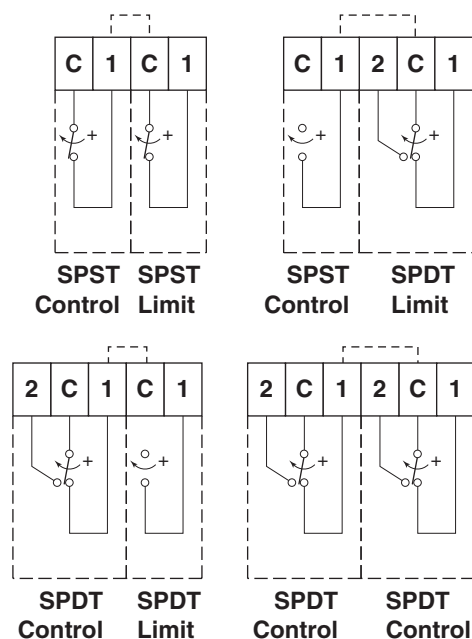
Accessories
Immersion wells, see page 18

SPST	SPST	SPST	SPDT
Control	Limit	Control	Limit

SPDT	SPDT	SPDT	SPDT
Control	Limit	Control	Control

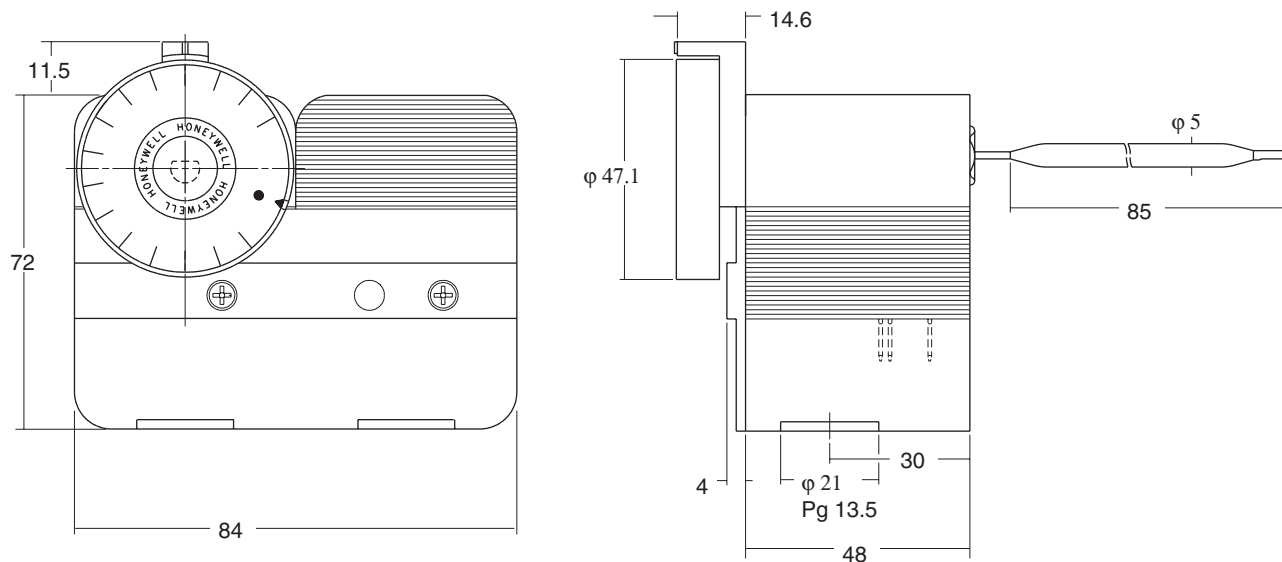**Fig. 7. Internal schematics**

Fig. 8. Dimensional drawing L4191/L6191

L6188A 2044 TRADELINE SINGLE AQUASTAT - DIRECT IMMERSION APPLICATIONS AND ORDERING INFORMATION

Application

L6188A 2044 Tradeline Aquastat is a sensitive immersion-type water temperature thermostat for regulating and limiting boiler water temperature in hydronic heating systems.

The Honeywell Tradeline technique of using adapters enables the L6188A 2044 Aquatat thermostat to field replace Honeywell Aquastat thermostats as well as many competitive devices (using the existing well*). No draining of the system is needed. Ideal for service organisations to stock since only one Aquastat is needed for most calls.

* If a new immersion well is needed order separately.

Ordering information L6188A 2044

O.S. number	Application	Temperature range	Switch differential (K)	Switch type	Setting means	Remarks (see notes)
L6188A 2044	Controller	40 ... 110°C	4 ... 10 (adjustable)	SPDT	External knob	1

1 = High limit stop at 95°C/low limit stop at 50°C

L6188A 2044 TRADELINE SINGLE AQUASTAT - DIRECT IMMERSION
SPECIFICATIONS AND DIMENSIONS

Specifications

Temperature range
40 ... 110°C

Differential
4 ... 10 (adjustable)

Limit stops:
Low limit: adjustable, factory set at 50°C
High limit: adjustable, factory set at 95°C

Ambient temperature limits
0 ... 70°C

Electrical connection
6.3 mm spade terninals

Enclosure
IP40

Electrical rating
10 A at 250 Vac, resistive load
2,5 A at 250 Vac, inductive load
15 A at 250 Vac, locked motor
Terminal data

C-1 breaks on temperature rise
C-2 makes on temperature rise
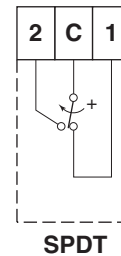
Accessories
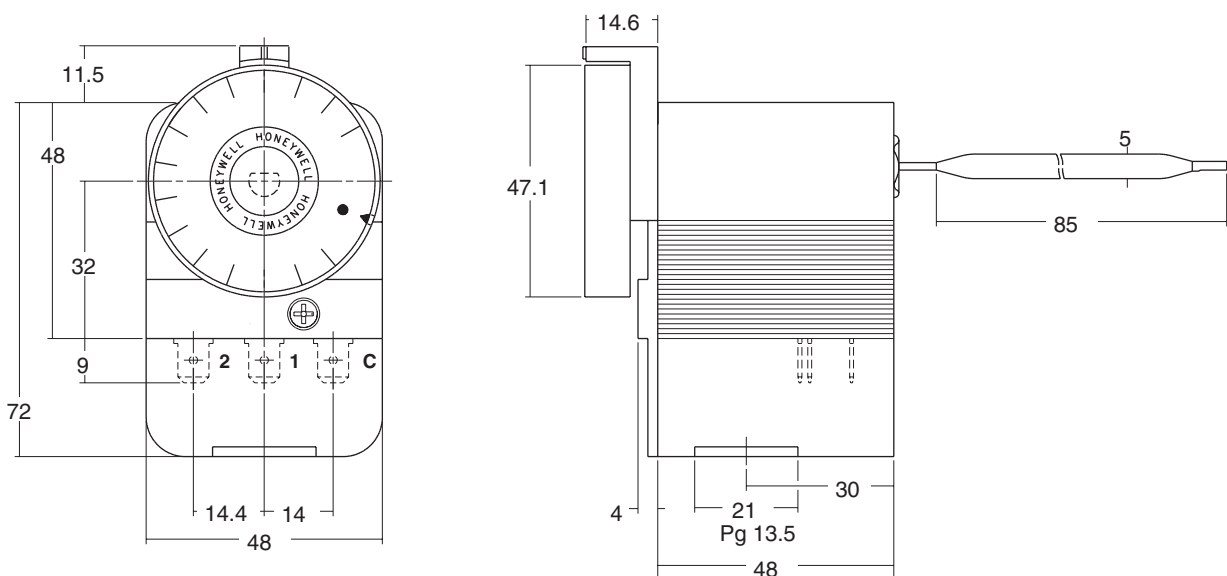Immersion wells, see page 18

Fig. 9. Internal schematic

Fig. 10. Dimensional drawing L6188A 2044

EN2R-9005 0406R3-NE

PERFORMANCE

Fixed switch differential

On controls and recycling limits a fixed differential of:
4 ± 1.5°C, 8 ± 3°C or
12 ± 3°C is supllied as a standard.

Optional are:
7 ± 2.7°F,
14 ± 5.4°F
15 ± 5.4°F

Adjustable switch differential

On controllers and recycling limiters an adjustable differential of:
4 ± 1.5°C ... 10 ± 3°C or
7 ± 2.7°F ... 18 ± 5.4°F can be supllied.

Manual or tool reset switch differential

On the thermal cut-out versions (manual or tool reset) of the panel mounted, the single direct mounted and the dual direct mounted Aquastats the maximum reset differential might be 30°C

NOTE: The differential (thermal) is dependant on the rate of change of the temperature in the heating system. The given differential datas are valid for a rate of 1°C per minute.

Ambient temperature error

Ratio of ambient error	Max. setting	Min. setting
With capilliary lenth of 1000 mm	1 : 5.5	1 : 8.5
With capilliary lenth of 50 mm	1 : 12	1 : 25

Example:

An ambient error ratio of 1 : 6 means that an ambient change of 6°C will cause a setpoint shift of the Aquastat of 1°C.

Time constant

- **With well**
  $\tau \leq 30$ s for panel mounted, single direct mounted, dual direct mounted and triple direct mounted Aquastats.
- **Without well**
  $\tau \leq 4$ s
- **With sensor assy (Surface mounted Aquastat)**
  $\tau \pm 50$ s

Setpoint accuracy

+0/-8°C for thermal cut-outs

CONSTRUCTION

All aquastats have the following common parts

- Thermoplastic housing of mainly rectangular form. This housing is the carrier of the Micro Switch mechanism, the 6.3 mm quick connect terminals, the lever mechanism and the adjusting mechanism.
- Thermoplastic switch cover, which protects the switch mechanism and which fits in the above mentioned housing.
- Auxiliary parts to make it possible to use the quick connect terminals also for screw connection.
- External circular setting knob with scale and an index or internal setting with scale.
- Liquid filled sensing element with or without a remote bulb. This element is via a mounting plate connected to the rear side of the thermoplastic housing
- Well assembly in which the bulb of the sensing elements fits. For the dual direct mount aquastat and triple direct mount aquastat the well is enable to contain two resp. three bulbs.
  NOTE: The surface mounted Aquastat does not have a well, but the bulb is enveloped by a sensor assembly of mainly rectangular form which is mounted on the rear side of the thermoplastic housing.
- A reset button for the switch mechanism, manual or tool reset, with exception of the surface mounted Aquastat, which does not have such a button.

Single direct mounted Aquastat needs the following extra parts

- A thermoplastic conduit box with a cable entry.
- A thermoplastic front cover to protect against touching of live parts.
- A thermoplastic top cover for covering of units with internal setting.
- An adjustable dial for the Micro Switch differential (if applicable).

Dual direct mounted Aquastat needs the following extra parts

- Two single thermoplastic conduit boxes (a right and a left one) with cable entry.
- A dual thermoplastic front cover to protect against touching of live parts.
- A thermoplastic top cover for covering of units with internal setting.
- An adjustable dial for the Micro Switch differential (if applicable).
- A bracket on the rear side of the Aquastat to connect both basic units together and which fits into a dual well.

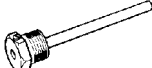**Surface mounted Aquastat needs the following extra parts**

- A thermoplastic conduit box with a cable entry
- A thermoplastic front cover to protect against touching of live parts.
- A thermoplastic top cover with scale for covering of unit with internal setting.
- A fastening strap with fastener, to mount the Aquastat on the surface of boiler or pipe.

Triple direct mounted Aquastat needs the following extra parts
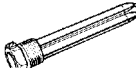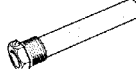
- Three single thermoplastic conduit boxes with a cable entry.
- A dual and a single thermoplastic front cover.
- Two thermoplastic top covers for covering of units with internal setting.
- An adjustable dial for the Micro Switch differential (if applicable).
- Two brackets on the rear side of the Aquastat to connect the three basic units together and which fits into a triple well.
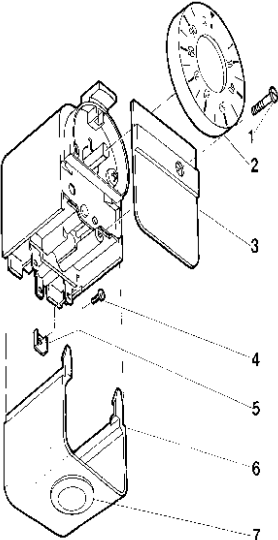
ACCESSORIES AND SPARE PARTS

Single well assembly

Description		Ordernumber	Packing qty (pcs)
Spud thread: $^{1}/_{2}$" BSPT Maximum insertion length (including thread): 105 mm Suitable for Ø 5 mm sensor		45.900.409-003	40
Spud thread: $^{1}/_{2}$" BSPT Maximum insertion length (including thread): 170 mm Suitable for Ø 5 mm sensor		45.900.409-006	100

Dual well assembly

Description		Ordernumber	Packing qty (pcs)
Spud thread: $^{1}/_{2}$" BSPT Maximum insertion length (including thread): 105 mm Suitable for two Ø 5 mm sensors.		45.900.409-007	20
Spud thread: $^{1}/_{2}$" BSPT Maximum insertion length (including thread): 105 mm Suitable for two Ø 5 mm sensors when used with spring. Without spring suitable for three or four Ø 5 mm sensors. Supplied with spring		45.900.409-008	20

Miscellaneous

Description	Ordernumber	Packing qty (pcs)
Knob assembly Scale range: 110 ... 230°F, high limit stop: 180°F	45.900.427-002	200
Knob assembly Scale range: 40 ... 110°C, high limit stop: 82°C	45.900.427-003	200
Strap set for L6190 surface mounted aqustat Strap length: 2000 mm	45.900.443-001	50

Key number	Description			Part number
1	Fixing screw for front covers of single and dual aquastats			45.002.700-001
2	**Knob**			
	Scale range	**Low limit stop**	**High limit stop**	
	40 ... 110°C	-	-	45.002.823-001
	70 ... 140°C	-	-	45.002.823-002
	25 ... 95°C	-	-	45.002.823-003
	40 ... 110°C	-	95°C	45.002.823-004
	70 ... 140°C	95°C	-	45.002.823-005
	40 ... 110°C	50°C	95°C	45.002.823-006
	25 ... 95°C	-	82°C	45.002.823-007
	40 ... 110°C	-	100°C	45.002.823-008
	25 ... 95°C	-	60°C	45.002.823-010
	70 ... 140°C	-	95°C	45.002.823-011
	25 ... 95°C	60°C	80°C	45.002.823-013
	1 ... 7 (40 ... 110°C)	-	85°C	45.002.823-014
	50 ... 95°C	-	82°C	45.002.823-015
	40 ... 110°C	-	82°C	45.002.823-017
	25 ... 95°C	40°C	80°C	45.002.823-019
	80 ... 100°F	-	-	45.004.213-001
	110 ... 230°F	-	-	45.004.213-002
	160 ... 280°F	-	-	45.004.213-003
	110 ... 230°F	-	200°F	45.004.213-004
	110 ... 230°F	-	180°F	45.004.213-005
3	Cover for single Aquastat			45.002.547-002
4	Screw			45.000.219-015
5	Wire clamp			45.002.797-001
6	Conduit box			45.002.540-001
7	Push in plug			45.002.802-001

QUALITY ASSURANCE STATEMENT

Products are manufactured under an ISO 9001 (1994) based and certified Quality System.

The quality system is described in the Honeywell Combustion Controls Center Quality Assurance Programme and its related operational procedures and instructions.

The quality system is approved by Gastec against certificate number 9.302/2.

The quality organisation is responsible for defining, maintaining, improving and verification of the quality systems in the field of design, production process and field quality service.

Assembly processes are guided by work instructions. Patrol inspections form part of the assembly processes.

At the end of the assembly phase, **all** aqustats are leakage and performance tested/adjusted.

Assembly inspection is performed by employees of the quality control department, using their own equipment.

All inspections (incoming and assembly) are performed by trained personel and according inspection procedures.

STANDARDS AND APPROVALS

Standards

The L41../L61.. series Aquastats have been designed according the Low Voltage Directive 73/23/EEC.

This Low Voltage Directive is covered by approvals in Denmark, Finland, Norway, Sweden and Switserland.

EMC Directive 89/336/EEC:
The snap action switch ensures in most cases a switching action in less than 10 ms, which satisfies EMC-Directive without further measures.

The exception is a highly inductive low current load combined with slow rate of temperature change, which requires additional suppression means. For this reason compliance with the EMC-Directive cannot be claimed.

Europen countries accept above certificates as basis for appliance approval.

Approvals

An additional approval is obtained from DIN in Germany according to DIN 3440 as thermostat (TR) or temperature limiter (TW).

In North-America approvals have been obtained from UL, AGA and CSA.

ORDERING INFORMATION

When ordering specify

- Setting point(control and limit if necessary)
- Type of contact (SPDT/SPST/ electrical rating)
- Number of sensing point (single/dual)
- Type of mounting (direct immersion/panel/surface)
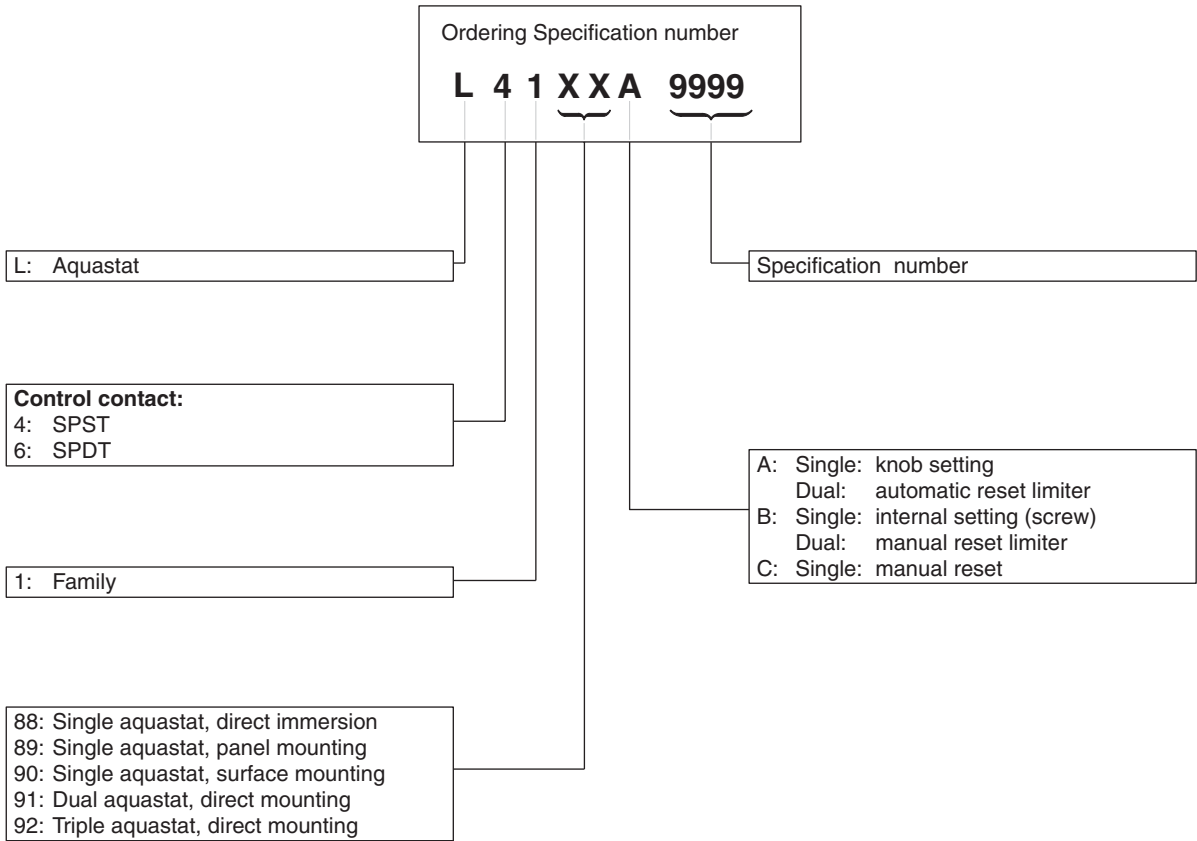- Differential (adjustable/fixed/manual reset)
- Capillary length

Ordering Specification number

L 4 1 X X A 9999

L: Aquastat

Specification number

Control contact:
4: SPST
6: SPDT

A: Single: knob setting
    Dual: automatic reset limiter
B: Single: internal setting (screw)
    Dual: manual reset limiter
C: Single: manual reset

1: Family

88: Single aquastat, direct immersion
89: Single aquastat, panel mounting
90: Single aquastat, surface mounting
91: Dual aquastat, direct mounting
92: Triple aquastat, direct mounting

Fig. 11. Model number chart

Honeywell