

B400-120, B402-120, B403- 21,
C400-120, C402-120, C403-121, E400-2BSA,
E402-5BS, E403-4BS, F400-2BS, F402-3BS,
F403-4BS и др.

Атмосферостойкие реле температуры с несколькими выходами серии 400. Технические характеристики.



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OVERVIEW

The 400 Series is a versatile family of pressure, differential pressure and temperature switches for applications which require single or multiple switching capabilities. Dual and triple switch versions provide multi-output for alarm and shutdown, pre-alarm and alarm, high/low limit or level staging functions.

A wide variety of microswitch and process connection options, along with a weather-tight enclosure, make the 400 Series an ideal choice for most ordinary location applications. Its worldwide use is assured with approvals and certifications to agency standards.

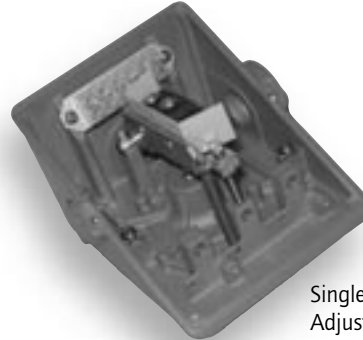
Widely used throughout the process industries, the 400 Series provides threshold protection and control for many critical functions. Typical installations are found in industrial gas production, energy generation including pumps, turbines and compressors, pulp and paper, and water and wastewater treatment.

FEATURES

- UL listed and cUL certified. FM approved. CE compliant to low voltage directive and pressure equipment directive. Optional ATEX intrinsic safety compliance.
- One, two or three switch output may be separated up to 100% of range.
- Setting via reference dial or hex screw adjustment.
- Wide variety of available options and pressure sensor modules.
- Most models available for immediate delivery.



Differential Pressure Model with M210 Option - Dial Indication



Single Switch Output, Hex Screw Adjustment Model with M100 option - Terminal Block Wiring



Temperature Model with Remote Bulb & Capillary and M321 option - Gasketed Lexan Window

Dual Switch, Low Water Column Differential Pressure Model



SPECIFICATIONS

STORAGE TEMPERATURE	-65 to 160°F (-54 to 71°C)
AMBIENT TEMPERATURE LIMITS	-40 to 160°F (-40 to 71°C); set point typically shifts less than 1% of range for a 50°F (28°C) ambient temperature change
SET POINT REPEATABILITY	Temperature models: ± 2% of adjustable range Pressure: models 126-376, 520-535, 540-547, 570-572, S126B-S164B: ± 2% of adjustable range; models 440-457, 550-559: ± 1% of adjustable range; models 610-614: ± 3% of adjustable range
SHOCK	Set point repeats after 15 G, 10 millisecond duration
VIBRATION	Set point repeats after 2.5 G, 5-500 Hz
ENCLOSURE	Die cast aluminum, epoxy powder coated, gasketed, captive cover screws
ENCLOSURE CLASSIFICATION	Designed to meet enclosure type 4X requirements
SWITCH OUTPUT	One, two or three SPDT switches, may be separated up to 100% of range except models 521-524, 531-534: 50%; models 520, 525, 530, 535, 570-572: 30%; switches may be wired "normally open" or "normally closed"
ELECTRICAL RATING	15 A 125/250/480 VAC resistive. Electrical switches have limited DC capabilities. Consult factory for additional information.
WEIGHT	Approx. 3 to 7.5 lbs.; varies with model
ELECTRICAL CONNECTION	One 3/4" NPT and two 7/8" diameter knockouts
PRESSURE CONNECTION	All models 1/4" NPT (female) except models S126B-S164B, 520-535: 1/2" NPT (female); models 540-547: 1/8" NPT (female)
TEMPERATURE ASSEMBLY	'E' types use the same assemblies as 'F' types, however, range spans are limited due to use of reference dials Bulb and capillary: 6 feet 304 stainless steel Immersion stem: models 120 & 121: nickel-plated brass; optional 316L stainless steel available
FILL	Temperature Models: Model 1BS: solvent filled; models 2-8: non-toxic oil filled
TEMPERATURE DEADBAND	Type F typically 1% and type E, B & C typically 2% of range under laboratory conditions (70°F ambient circulating bath at rate of 1/2°F per minute change)
DIFFERENTIAL PRESSURE INDICATOR (OPTION M210)	Differential pressure indication available J400K, J402K models 147-S157B; accuracy approximately 1-1/2% mid 50% of range, 3% at ends; window is plexiglass and gasketed; indicator may be field adjusted for approximately ±1% accuracy at any set point within range



TEMPERATURE MODEL CHART

Type B400, single switch output, immersion stem, internal adjustment via reference dial
 Type B402, dual switch output, immersion stem, internal adjustment via reference dial
 Type B403, triple switch output, immersion stem, internal adjustment via reference dial
 Type C400, single switch output, immersion stem, internal hex screw adjustment
 Type C402, dual switch output, immersion stem, internal hex screw adjustment
 Type C403, triple switch output, immersion stem, internal hex screw adjustment
 Type E400, single switch output, bulb & capillary***, internal adjustment via reference dial
 Type E402, dual switch output, bulb & capillary***, internal adjustment via reference dial
 Type E403, triple switch output, bulb & capillary***, internal adjustment via reference dial
 Type F400, single switch output, bulb & capillary***, internal hex screw adjustment
 Type F402, dual switch output, bulb & capillary***, internal hex screw adjustment
 Type F403, triple switch output, bulb & capillary***, internal hex screw adjustment

Model	Adjustable Set Point Range		Max. Temp.		Scale Division††		Stem or Bulb Size* /Finish**
	°F	°C	°F	°C	°F	°C	
OD x Length							
Type B400, B402, B403, single, dual, or triple switch output, immersion stem, internal adjustment via reference dial.							
Type C400, C402, C403, single, dual, or triple switch output, immersion stem, internal hex screw adjustment							
120	0 to 225	-17.8 to 107.2	275	135	5	5	9/16" x 1-7/8" nickel-plated brass
121	200 to 425	93.3 to 218.3	475	246.1	5	5	9/16" x 1-7/8" nickel-plated brass
Type E400, E402, E403, single, dual, or triple switch output, bulb & capillary***, internal adjustment via reference dial							
2BSA	-120 to 100	-84.4 to 37.8	150	65.6	10	5	3/8 x 2-7/16"
5BS	-20 to 80	-28.9 to 26.7	130	54.4	5	2	3/8 x 5"
4BS	25 to 100	-3.9 to 37.8	150	65.6	5	2	3/8 x 6-3/4"
2BSB	30 to 250	-1.1 to 121.1	300	148.9	10	5	3/8 x 2-5/8"
3BS	100 to 400	37.8 to 204.4	450	232.2	10	10	3/8 x 2-1/8"
8BS	350 to 640	176.7 to 337.8	690	365.6	10	10	3/8 x 3-1/4"
Type F400, F402, F403, single, dual, or triple switch output, bulb & capillary***, internal hex screw adjustment							
1BS†	-180 to 120	-117.8 to 48.9	170	76.7	N/A		3/8 x 3-3/4"
2BS	-125 to 350	-87.2 to 176.7	400	204.4	N/A		3/8 x 2-7/16"
3BS	-125 to 500	-87.2 to 260	550	287.8	N/A		3/8 x 2-1/8"
4BS	-40 to 120	-40 to 48.9	170	76.7	N/A		3/8 x 6-3/4"
5BS	-40 to 180	-40 to 82.2	230	110	N/A		3/8 x 5"
6BS	0 to 250	-17.8 to 121.1	300	148.9	N/A		3/8 x 4-1/2"
7BS	0 to 400	-17.8 to 204.4	450	232.2	N/A		3/8 x 3"
8BS	50 to 650	10 to 343.3	700	371.1	N/A		3/8 x 3-1/4"

† Model not available on type F403

†† Only applies to types B400, B402, B403, E400, E402 and E403

* Optional immersion stem lengths and capillary lengths are available

** Optional stainless steel immersion stem and capillary covering available

*** Standard capillary lengths are 6ft

OPTIONS FOR TEMPERATURE MODELS

UNION CONNECTORS

For all bulb & capillary switches, types E and F

Option	Replacement Number	Description
	<u>Brass</u>	
W027	SD6213-27	1/2" NPT w/ 3/4" bushing
W045	SD6213-45	3/4" NPT
W051	SD6213-51	1/2" NPT
	<u>304 Stainless Steel</u>	
W028	SD6213-28	1/2" NPT w/ 3/4" bushing
W046	SD6213-46	3/4" NPT
W050	SD6213-50	1/2" NPT

THERMOWELLS

For all bulb & capillary switches, types E and F

	<u>Brass</u>	
W075	SD6225-75	1/2" NPT with 3/4" NPT adapter bushing, 4" BT
W191	SD6225-191	1/2" NPT, 4" BT
W118	SD6225-118	1/2" NPT with 3/4" NPT adapter bushing, 7" BT
W192	SD6225-192	1/2" NPT, 7" BT
	<u>316 Stainless Steel</u>	
W076	SD6225-76	3/4" NPT, 4.5" BT
W193	SD6225-193	1/2" NPT, 4.5" BT
W119	SD6225-119	3/4" NPT, 7.5" BT
W177	SD6225-177	1/2" NPT, 7.5" BT

For all immersion stem switches; types B and C

W139	SD6225-139	3/4" NPT X 1-23/32" BT, BRASS
W140	SD6225-140	3/4" NPT X 1-23/32" BT, 316 ST/ST

W000 IMMERSION STEM AND THERMOWELLS

Note: Option W000 is a special Immersion Stem construction that has no external thread. This option fits inside a special thermowell and is secured with a set-screw. Available on types B and C only.

Option	Description
W000	Immersion stem only, brass
W097	Immersion stem and thermowell. Includes W000 stem and 1/2" NPT x 1-23/32" BT brass thermowell
W099	Immersion stem and thermowell. Includes W000 stem and 1/2" NPT x 1-23/32" BT 316 st/st thermowell.

OPTIONAL LENGTHS:

Optional immersion stem lengths to 15" available in brass, with or without 316 st/st thermowell. Consult UE for additional information. Optional capillary length to *50' available in copper or 304 st/st. Armor or Teflon® capillary protection available to lengths less than or equal to capillary length. Consult UE for additional information.

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