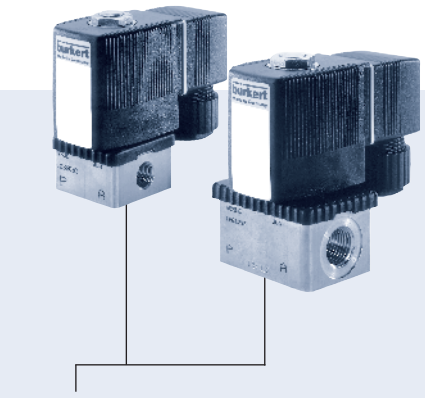
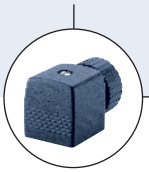
burkert
FLUID CONTROL SYSTEMS

2/2-way direct acting Solenoid Valve, normally closed



- High quality seal material
- High cycling rate
- Special versions up to 356°F (+180°C)
- Threaded port and sub-base connections
- Compact design

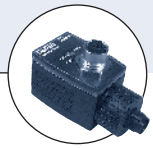
Type 6013 can be combined with…



Type 2508
Cable plug



Type 1078
Timer unit



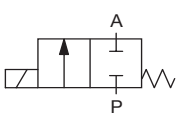
Type 2511
ASI cable plug

This direct-acting 2/2-way miniature solenoid valve is available in two versions.

Standard version:
Type 6013 is a small direct acting solenoid valve for general purpose used for shut-off, dosing, filling, ventilating and for technical vacuum. It is of modular design and may be mounted individually or as a block on a multiple manifold.

Analysis and vacuum technology:
Type 6013 A is a high-quality small solenoid valve for analysis and vaccum technology. It is manufactured under clean-room conditions. This includes thorough cleaning of all parts in contact with media from organic and inorganic substances. The limit for residual hydrocarbons is below 0.2 mg/dm². 100 % of the valves are subjected to a special leakage test with regard to tight seating and tightness to the exterior. The permissible leakage rate is 10^{-4} mbar l/s. The valve is used for shut-off, dosing, filling, ventilating and particularly for analysis technology.

Circuit function A



2/2-way valve, normally closed by spring force

Technical data	
Body materials Type 6013 Type 6013 A	 Brass, Stainless steel 1.4305 Brass, Stainless steel 1.4305
Seal material	FKM, PTFE/Graphite (EPDM on request)
Analysis version **(Type 6013 A)**	silicon, oil and fat free version Tightness <10^{-4} mbar l/s
Limit value for risidual carbon **(Type 6013 A)**	 <0,2 mg/dm²
Media Type 6013 Type 6013 A	▪ technical vacuum ▪ neutral gases and liquids (e.g. compressed air, water, hydraulic oil) ▪ neutral media, which do not attack the body and seal materials (see chemical resistance chart)
Media temperature FKM PTFE/Graphite	 14°F to 212°F (-10°C to +100°C) (PA coil) till 248°F (120°C) (Epoxy coil) to 356°F (+180°C) (see chemical resistance chart)
Ambient temperature	max. 131°F (+55°C)
Viscosity	max. 21 cSt
Port connection Type 6013 Type 6013 A	 NPT 1/8, NPT 1/4, NPT 3/8, sub-base G1/8, G1/4
Operating voltage Type 6013 Type 6013 A	 24 V DC, 24 V/60 Hz, 120 V / 60 Hz, 240 V / 60 Hz 24 V DC, 230 V / 50 Hz (other voltages on request)
Voltage tolerance	± 10%
Duty cycle/Single valve with block assembly on manifold	100% Continuous rating Intermittent operation 60% (30 min)
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A (previously DIN 43650) for cable plug Type 2508 (see Accessories)
Installation	As required, preferably with actuator upright
Assembly	no oils, fats or silicone to be used during assembly
Protection class	IP65 with cable plug
Insulation class	Polyamide coil B Epoxy coil H

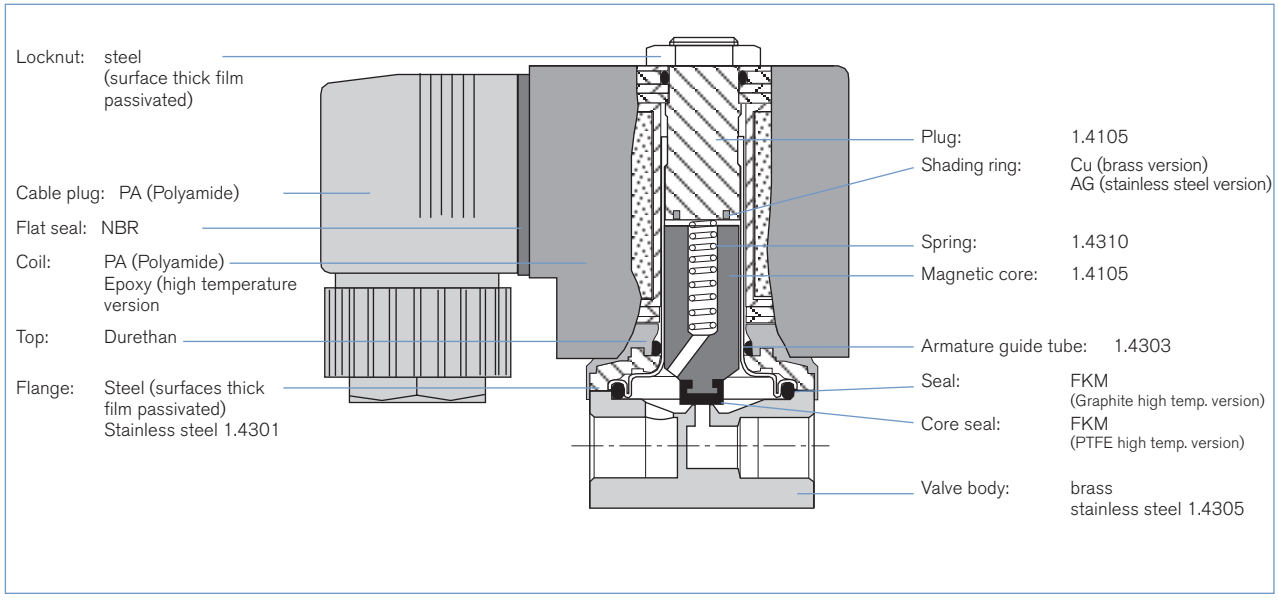
DTS 1000086402 EN Version: A Status: RL (released | freigegeben | validé) printed: 05.10.2012

Technical data, continued

Orifice [mm]	Port connection	C_v value water [GPM]	Pressure range AC [PSI]	Pressure range DC [PSI]	Power consumption [1] [W]	Elec. power Inrush (AC)	Elec. power Hold (AC)	Coil size	Response times opening [ms]	Response times closing [ms]
2.0	1/8	0.14	0 – 362.5	0 – 174	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.0	1/4	0.14	0 – 362.5	0 – 174	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.0	sub-base	0.14	0 – 362.5	0 – 174	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.5	1/8	0.18	0 – 232	0 – 145	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.5	1/4	0.18	0 – 232	0 – 145	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	1/8	0.26	0 – 145	0 – 87	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	1/4	0.26	0 – 145	0 – 87	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	3/8	0.26	0 – 203	0 – 116	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30
4.0	1/4	0.35	0 – 58	0 – 21.75	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
4.0	3/8	0.35	0 – 87	0 – 36.25	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30
6.0	1/4	0.64	0 –21.75	0 – 7.25	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
6.0	3/8	0.64	0 – 36.25	0 – 10.875	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30

[1] Values in brackets at coil temperature 68°F (20°C)

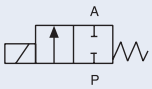
Material



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Ordering chart for valves (other versions on request)

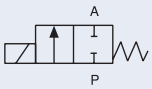
General purpose valves with brass body and FKM seals

Circuit function	Orifice [mm]	Port connection [NPT]	C_v value [GPM]	Wattage	Pressure range [PSI]	Voltage/ Frequency [V/Hz]	Item no.[1] UL listed FM Class 1 Div 2 CSA / CE	Item no.[2] UL recognized CSA / CE
A 2/2-way Valve NC 	2.0	NPT 1/8"	0.14	8	0 – 174	024/DC	457 314	457 294
					0 – 362	024/60	457 315	457 295
					0 – 362	120/60	457 316	457 296
					0 – 362	240/60	457 317	457 297
	2.5	NPT 1/8"	0.19	8	0 – 145	024/DC	457 318	457 298
					0 – 232	024/60	457 319	457 299
					0 – 232	120/60	457 320	457 300
					0 – 232	240/60	457 321	457 301
	3.0	NPT 1/8"	0.27	8	0 – 87	024/DC	456 506	456 315
					0 – 145	024/60	456 507	456 316
					0 – 145	120/60	456 508	456 317
					0 – 145	240/60	456 509	456 318
		NPT 1/4"	0.27	8	0 – 87	024/DC	456 510	456 319
					0 – 145	024/60	456 511	456 320
					0 – 145	120/60	456 512	456 321
					0 – 145	240/60	456 513	456 322
	4.0	NPT 1/4"	0.35	8	0 – 22	024/DC	456 514	456 323
					0 – 58	024/60	456 515	456 324
					0 – 58	120/60	456 516	456 325
					0 – 58	240/60	456 517	456 326
	6.0	NPT 1/4	0.64	10	0 – 11	024/DC	–	456 848
					0 – 36	024/60	–	456 849
					0 – 36	120/60	–	456 850
					0 – 36	240/60	–	456 851

1) Includes Type 2509 series 1/2" conduit plug
2) Includes Type 2508 series standard cable plug

Ordering chart for valves (other versions on request)

General purpose valves with stainless steel body and FKM seals

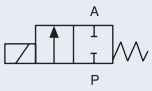
Circuit function	Orifice [mm]	Port connection [NPT]	C_v value [GPM]	Wattage	Pressure range [PSI]	Voltage/ Frequency [V/Hz]	Item no.[1] UL listed FM Class 1 Div 2 CSA / CE	Item no.[2] UL recognized CSA / CE
A 2/2-way Valve NC 	2.0	NPT 1/8"	0.14	8	0 – 174	024/DC	457 322	457 302
					0 – 362	024/60	457 323	457 303
					0 – 362	120/60	457 324	457 304
					0 – 362	240/60	457 325	457 305
	3.0	NPT 1/8"	0.27	8	0 – 87	024/DC	456 522	456 331
					0 – 145	024/60	456 523	456 332
					0 – 145	120/60	456 524	456 333
					0 – 145	240/60	456 525	456 334
		NPT 1/4"	0.27	8	0 – 87	024/DC	456 526	456 335
					0 – 145	024/60	456 527	456 336
					0 – 145	120/60	456 528	456 337
					0 – 145	240/60	456 529	456 338
	4.0	NPT 1/4"	0.35	8	0 – 22	024/DC	456 530	456 494
					0 – 58	024/60	456 531	456 495
					0 – 58	120/60	456 532	456 496
					0 – 58	240/60	456 533	456 497

1) Includes Type 2509 series 1/2" conduit plug
2) Includes Type 2508 series standard cable plug

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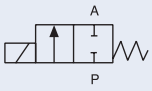
Ordering chart for valves (other versions on request)

Valves for high temperatures (up to 356°F), PTFE/graphite seal, brass body, stainless steel seat

Circuit function	Orifice [mm]	Port connection [NPT]	C_v value [GPM]	Wattage	Pressure range [PSI]	Voltage/ Frequency [V/Hz]	Item no. CE
A 2/2-way Valve NC 	2.0	NPT 1/4"	0.14	8	0 – 174	024/DC	457 376
					0 – 362	024/60	457 377
					0 – 362	120/60	457 378
					0 – 362	240/60	457 379
	3.0	NPT 1/4"	0.27	10	0 – 115	024/DC	457 380
					0 – 203	024/60	457 381
					0 – 203	120/60	457 382
					0 – 203	240/60	457 383

Ordering chart for valves (other versions on request)

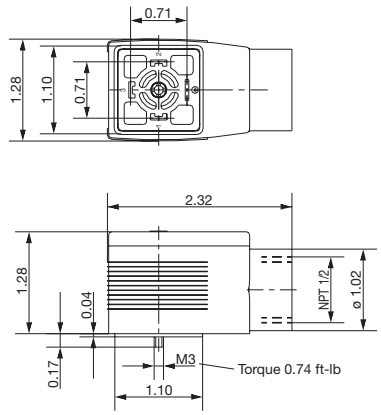
Valves for flange versions with brass body and FKM seals

Circuit function	Orifice [mm]	Port connection	C_v value [GPM]	Wattage	Pressure range [PSI]	Voltage/ Frequency [V/Hz]	Item no. UL listed	Item no. UL recognized
A 2/2-way Valve NC 	2.0	Flange	0.14	8	0 – 174	024/DC	457 326	457 310
					0 – 362	024/60	457 327	457 311
					0 – 362	120/60	457 328	457 312
					0 – 362	240/60	457 329	457 313
	3.0	Flange	0.27	8	0 – 87	024/DC	456 696	456 675
					0 – 145	024/60	456 697	456 676
					0 – 145	120/60	456 698	456 677
					0 – 145	240/60	456 699	456 678

Coils acc. EEx. Approvals on request.

6013 Analytical valve see page 5

Type 2509 dimension [mm]



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Technical Data - Analytical version

Analytical version	Media flowing through are not contaminated
Limit value for risidual carbon	< 0,2 mg/dm²
Permissible leakage rate media	10^{-4} mbar l/sec ▪ neutral media, which do not attack the body and seal materials ▪ technical vacuum
Elec. connection	tag connector acc. to DIN EN 175301-803 A (previoulsy DIN43650) for cable plug Type 2508 (see accessories)
Assembly note	no oils, fats or silicone used during the assembly

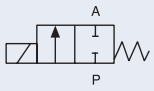
Solenoid valves for higher Requirements
This version is suitable particularly for highly pure gaseous and liquid media. All media-affected parts are submitted to additional purification processes, so that the media is not contaminated under any circumstances. The assembly takes place under clean-room conditions.

The tightness test takes place at the Helium leak detector from a min. of 10^{-4} mbar l/sec.

Ordering chart for valves (further versions on request)

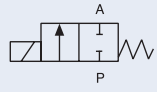
6013A Analytical valve with brass body and FKM seal, (Polyamide coil)

Delivered without cable plug (see accessories)

Circuit function	Orifice [mm]	Port connection	C_v value water [GPM]	Pressure range [PSI]	Coil power [W]	Weight [g]	Voltage/ Frequency [V/Hz]	Item no.
A 2/2-way valve NC	2.0	G 1/8	0.14	0 – 174	8	325	24/DC	137 826
				0 – 362.5			230/50	137 827
	2.5	G1/8	0.18	0 – 145	8	325	24/DC	137 828
				0 – 232			230/50	137 829
	3.0	G 1/4	0.26	0 – 87	8	430	24/DC	137 830
				0 – 145			230/50	137 831
	4.0	G 1/4	0.35	0 – 29	8	430	24/DC	137 132
				0 – 58			230/50	137 833

6013A Analytical valve with stainless steel body and FKM seal, (Polyamide coil)

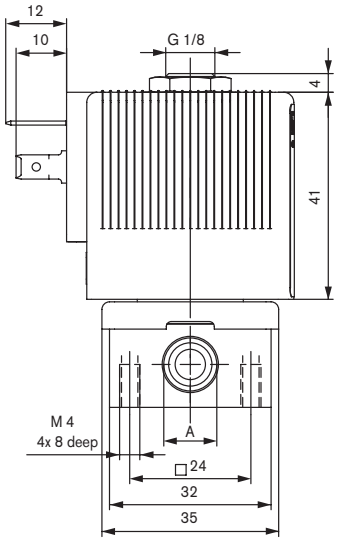
Delivered without cable plug (see accessories)

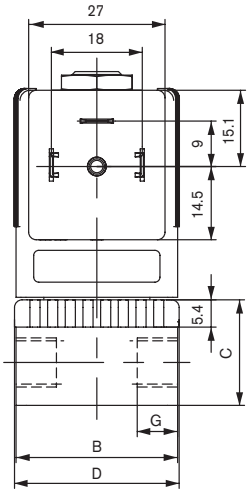
Circuit function	Orifice [mm]	Port connection	C_v value water [GPM]	Pressure range [PSI]	Coil power [W]	Weight [g]	Voltage/ Frequency [V/Hz]	Item no.
A 2/2-way valve NC	2.0	G 1/8	0.14	0 – 174	8	325	24/DC	137 818
				0 – 362.5			230/50	137 819
	2.0	G1/4	0.14	0 – 174	8	430	24/DC	137 820
				0 – 362.5			230/50	137 821
	3.0	G 1/4	0.26	0 – 87	8	430	24/DC	137 822
				0 – 145			230/50	137 823
	4.0	G 1/4	0.35	0 – 29	8	500	24/DC	137 824
				0 – 58			230/50	137 825

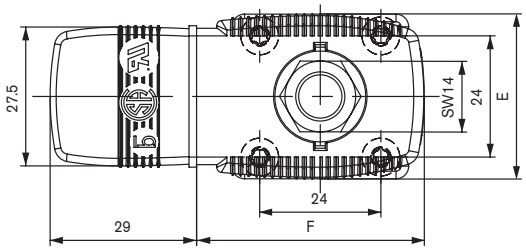
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Dimensions [mm]

View without cable plug

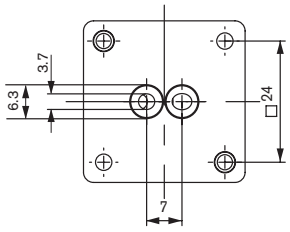


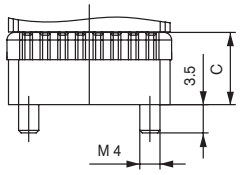




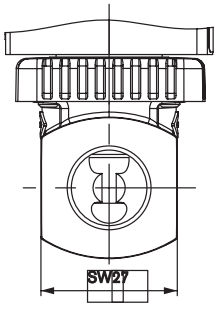
Sub-base version

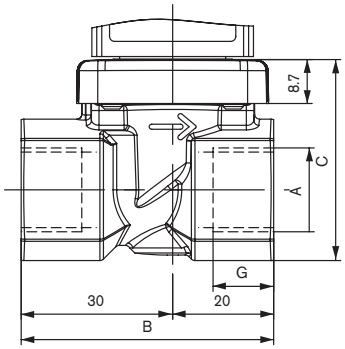
underside view





NPT 3/8 connection





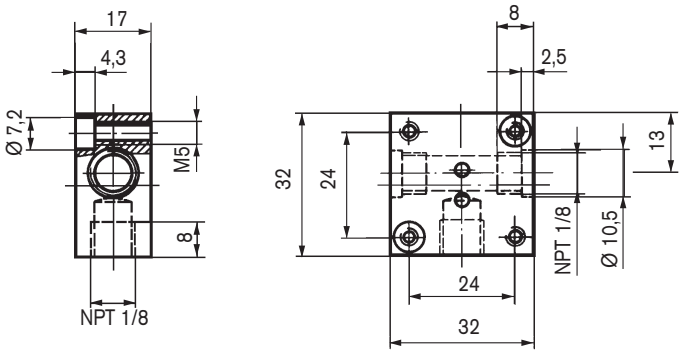
Port connection	Body dimensions [mm]					Coil width	Coil depth
	A	B	C	D	G	E [mm]	F [mm]
NPT 1/8	NPT 1/8	32	20.8	32.6	8	32 (8W)	45 (8W)
NPT 1/4	NPT 1/4	46	26.8	49	12	32 (8W)	45 (8W)
NPT 3/8	NPT 3/8	50	39.8	49	12	40 (10W)	51 (10W)
sub-base	–	32	14.3	32.6	–	32 (8W)	45 (8W)

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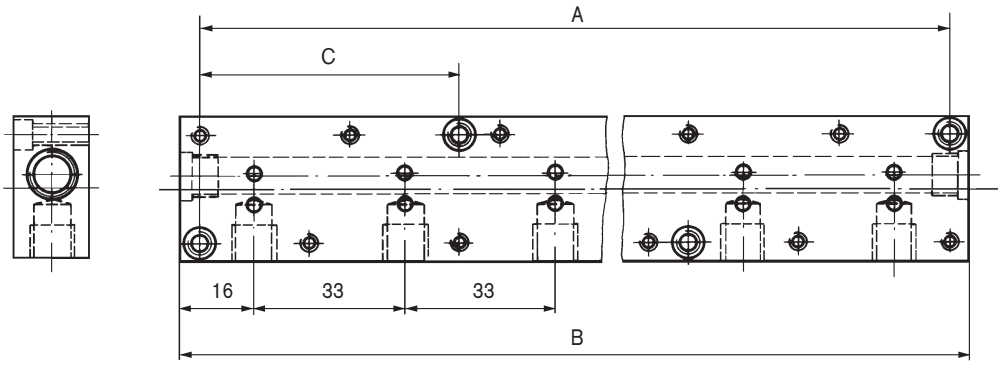
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Block assembly

Single manifold



Multiple manifold



Ordering chart for assembly

Accessory part	Quantity of valve places				Item no.
Single manifold	in Aluminium				613 827
Multiple manifold	in Aluminium	Hole spacing A [mm]	Total length B [mm]	Hole spacing C [mm]	
	2	57	65	–	006 104
	3	90	98	–	613 828
	4	123	131	–	006 106
	5	156	164	57	613 829
	6	189	197	57	613 598
	8	255	263	57	613 831
Connector nipple	with O-Ring, to connect multiple manifolds				005 040
Covering plate	with screws and FKM O-ring for covering unoccupied valve positions				006 193

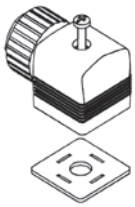
With manifold mounting, please comply with the permissible duty cycle (5 W models with 100% continuous rating or 8 W model with 60% duty cycle). The pressure port for the manifold is designated with P (R), and the outlet port with A (B). Only connect together ports with the same designation.

2/2-way valves of Type 6013 can be operated together on a manifold with 3/2-way valves of Type 6014, circuit function C (not D or T!) if the operating pressures agree according to the rating plates. The manifolds can also be expanded if the valve functions are taken into consideration. Connector nipples with O-rings are used to connect the P (R) ports.

Caution!
Unused, open valve ports must be closed off with covering plates (see Accessories).

Ordering chart for accessories

The flat seal and the fixing screw are included in the delivery.
Other versions with cable plug acc. to DIN EN 175301-803 (previously DIN43650), see Datasheet: Type 2508.



Type 2508 Cable plug
acc. to DIN EN 175301-803
(previously DIN 43650)

Circuitry	Voltage	Item no.
without circuitry	0-250 V	008 376
with LED	12-24 V	008 360
with LED and Varistor	12-24 V	008 367
with LED and Varistor	200-240 V	008 369
further versions	see Datasheet: Type 2508	

Further versions on request

Approvals
Ex version
ATEX
European gas approval Class A, Group 2

Voltage
Further voltages

Materials
Sealing material EPDM, NBR

Pressure
Variants with increased coil power for higher media pressure

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In case of special application conditions, please consult for advice.
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