

AT SERIES

Pneumatic Modulating
Valve Actuator

Durable. Accurate. Compact. Modular.

TECHNICAL BROCHURE



Design & Materials

Cowan has a US Patent and Canadian Patent for the design

Barrel | High-strength composite standard; aluminum, steel or stainless steel optional

Rod Wiper | Prevents contamination inside the cylinder

Standard:
Analog output compatible with most digital positioners (see page 7)

Optional:
Digital output for open and close indication

Piston Packing
Nitrile U-cup standard; low-temp optional

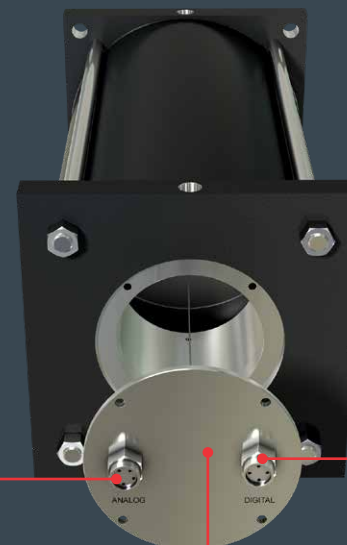
Gland Packing
Polyurethane U-cup standard; low-temp optional

Transducer module

- Easy-access for field maintenance and replacement
- Completely self-contained
- No need to disassemble cylinder or remove the valve assembly

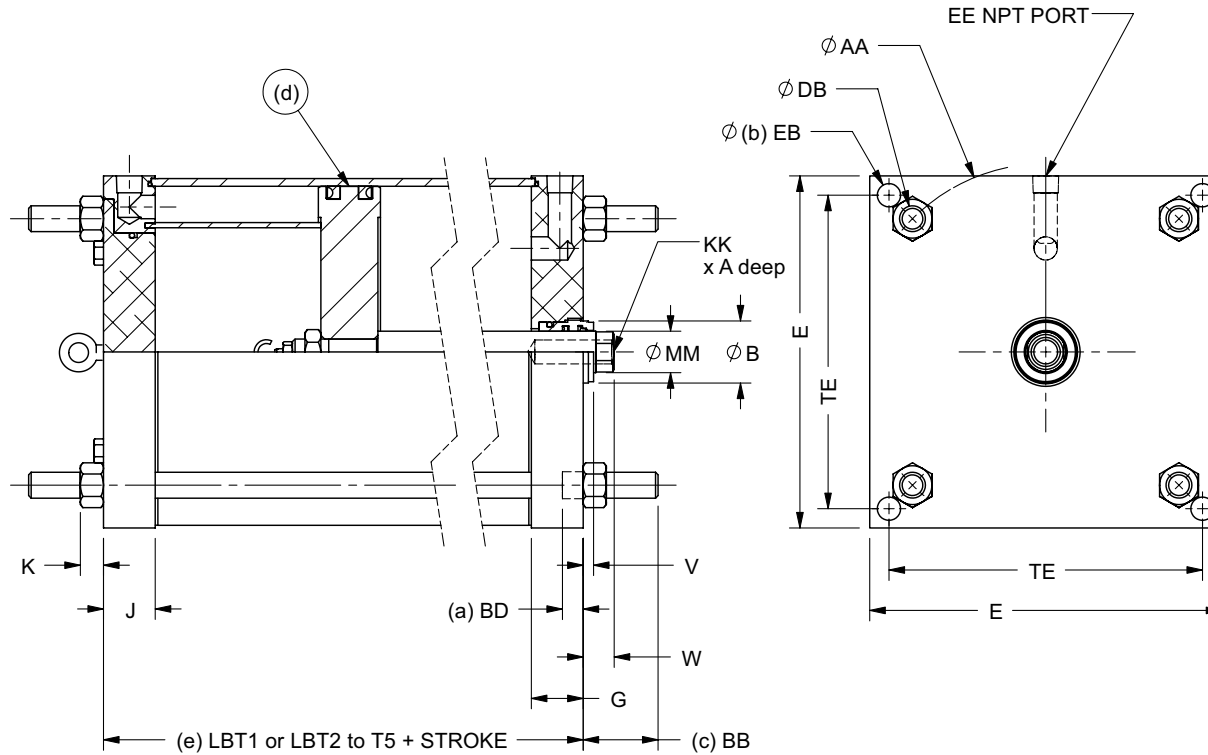
Temperature Ratings	
Low Temp. Seals	-40 C to 90 C
Standard Seals	-20 C to 90 C

Material Breakdown	STANDARD	Corrosion Resistant	AWWA
Head & Cap	Steel	SS 316	Cad Plated
Barrel	Composite	Composite	Composite
Piston	Aluminum (4"-8") & Steel (10" and above)	Steel	Cad Plated
Piston Rod	AISI 1045	SS 316	SS 316
Gland	SAE 660	Delrin	Delrin
Tie Rod 4" - 10"	AISI 1045	SS 316	SS 316
Tie Rod 12" & Above	AISI 1045	SS 17 - 4 PH	SS 17 - 4 PH



Actuator Dimensions

Actuation Solutions and Systems for the World's Most Challenging Environments



- Note:**
- a. 4" to 7" bore only
 - b. 8" to 26" bore only
 - c. For mounting MX1, MX2, MX3
 - d. Wear band for 10" bore and larger
 - e. Use LBT1 with option T1; use LBT2 to LBT5 with option T2 to T5

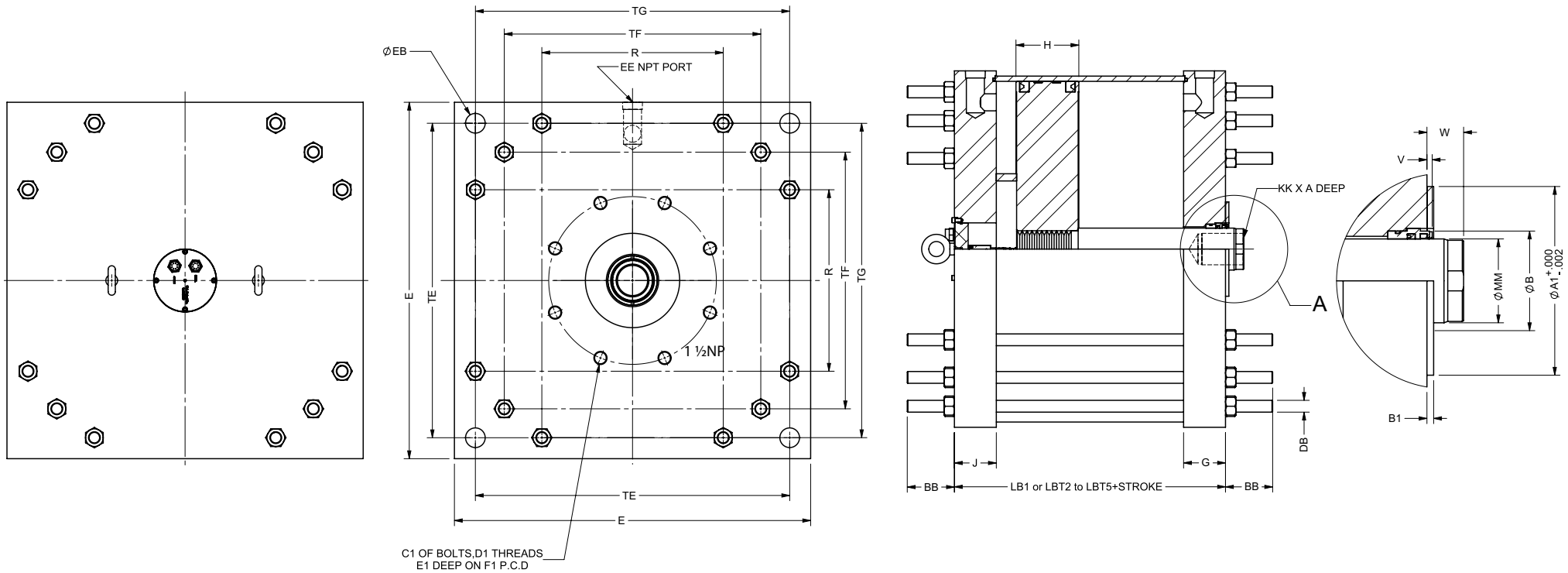
Dimensions (in)																			Thrust Values (lbs)			ISO or MSS Mounting Pattern*		
BORE	A	AA	B	BB	BD	DB UNF	E	EB	EE NPT	G	J	K	KK UNF	LBT1	LBT2	MM	TE	V	W	60 PSI	80 PSI	100 PSI	STD	OPT
5	1.75	5.80	1.50	1.81	¾	½-20	5.50	N/A	¼	1.50	1.5	0.56	⅝-18	N/A	8.88	1.00	N/A	0.25	0.75	1,131	1,508	1,885	F/FA07	
6	1.75	6.90	1.50	1.81	⅞	½-20	6.50	N/A	¼	1.63	1.63	0.56	⅝-18	N/A	9.38	1.00	N/A	0.25	0.75	1,649	2,199	2,749	F/FA07	
7	1.75	8.10	1.50	2.31	½	⅝-18	7.50	N/A	⅜	1.25	1.25	0.49	⅝-18	N/A	8.88	1.00	N/A	0.25	0.75	2,262	3,016	3,770	F/FA07	
8	1.75	9.10	1.50	2.31	N/A	⅝-18	8.50	0.56	⅜	1.25	1.25	0.49	⅝-18	9.50	8.88	1.00	7.57	0.25	0.75	2,969	3,958	4,948	F/FA10	F/FA07
10	2.25	11.20	2.00	2.69	N/A	¾-16	10.75	0.81	½	1.25	1.25	0.75	1-14	9.63	9.00	1.38	9.40	0.25	0.88	4,623	6,164	7,705	F/FA10	F/FA07
12	2.25	13.30	2.00	2.69	N/A	¾-16	12.75	0.81	½	1.25	1.25	0.75	1-14	10.00	9.38	1.38	11.10	0.25	0.88	6,697	8,929	11,161	F/FA14	F/FA10
14	2.25	15.40	2.00	3.19	N/A	⅞-14	14.88	0.94	½	1.50	1.50	0.88	1-14	10.75	10.13	1.38	12.87	0.25	0.88	9,147	12,196	15,245	F/FA14	F/FA10
16	2.25	17.80	2.63	3.63	N/A	1-14	17.00	1.06	¾	1.75	1.75	1.00	1¼-12	11.25	10.63	2.00	14.85	0.25	1.13	11,875	15,834	19,792	F/FA14	F/FA10
18	2.25	20.00	2.63	3.75	N/A	1⅛-12	19.00	1.19	¾	1.75	1.75	1.13	1¼-12	11.25	10.63	2.00	16.69	0.25	1.13	15,080	20,106	25,133	F/FA16	F/FA14
20	2.25	22.25	3.13	4.00	N/A	1¼-12	21.00	1.31	¾	2.00	2.00	1.26	1¼-12	12.00	11.38	2.50	18.43	0.25	1.13	18,555	24,740	30,925	F/FA16	F/FA14
24	3.50	26.50	3.75	4.50	N/A	1¼-12	25.25	1.31	¾	2.50	2.50	1.25	2¼-12	14.00	13.38	3.00	21.75	0.25	1.25	26,719	35,626	44,532	F/FA25	F/FA16
26	3.50	28.75	4.25	5.50	N/A	1½-12	27.50	C/F	¾	2.50	2.50	1.50	2½-12	15.00	9.50	3.50	C/F	0.25	1.25	31,278	41,705	52,131	F/FA30	F/FA25

*Other Mounting Patterns are available; consult factory

*Mounting Dimensions and values located on page 7

Actuator Dimensions 28" – 42" Bore

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Dimensions (in)																									
BORE	Code letter	A	AA	B	BB	DB	E	EB	EE	G	H	J	K	KK	LB+Stroke (Single Stage)	LT+ 2xStroke (Tandem Cylinder)	LB T1	LB T2	MM	V	W	R	TE	TF	TG
28	F	3.50	30.63	4.25	4.13	8x1 1/8-12	31.25	1.56	3/4	4.00	5.00	3.25	0.97	2 1/4-12UN	12.25	21.75	17.00	17.00	3.50	0.25	1.25	17.60	26.00	25.00	N/A
30	I	3.50	30.63	4.25	4.13	8x1 1/8-12	31.50	1.88	1 1/2 NP	4.00	5.00	3.25	0.97	2 1/4-12UN	12.25	21.75	17.00	17.00	3.50	0.25	1.50	18.70	26.70	26.70	N/A
32	J	3.50	34.63	4.75	4.75	8x1 1/8-12	34.00	1.88	1 1/2 NP	4.00	6.00	4.00	0.97	2 3/4-12UN	14.00	30.00	16.00	16.00	4.00	0.25	1.75	17.30	30.00	30.00	N/A
36	Q	4.50	41.00	6.25	4.75	12x1 1/8-12	39.00	2.50	1 1/2 NP	6.00	8.00	6.00	0.97	4-12UN	20.00	34.00	20.00	20.00	5.50	0.25	1.75	13.30	33.00	27.60	36.60
42	U	4.50	47.50	6.25	4.75	12x1 1/8-12	45.00	2.50	1 1/2 NP	6.00	8.00	6.00	0.97	4-12UN	20.00	34.00	20.00	20.00	5.50	0.25	1.75	15.40	38.00	31.80	42.30

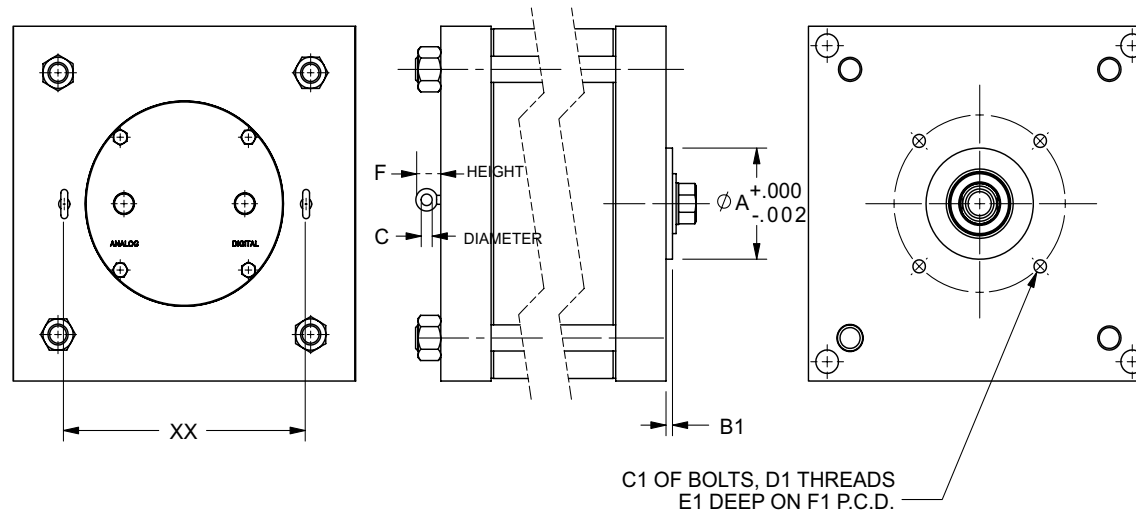
*Other Mounting Patterns are available; consult factory

BORE	Thrust Values (lbs)			ISO or MSS Mounting Pattern*	
	60 PSI	80 PSI	100 PSI	STD	OPT
28	36,368	48,490	60,613	F/FA25	F/FA30
30	41,834	55,779	69,724	F/FA25	F/FA30
32	47,501	63,334	79,168	F/FA30	F/FA35
36	59,647	79,529	99,412	F/FA30	F/FA35
42	81,701	108,935	136,168	F/FA30	F/FA35

*Mounting Dimensions and values located on page 7

Actuator Dimensions – Mounting

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Eye bolt mounting holes			
BORE	XX	C	F
12	9.00	1	2
14	10.00	1	2
16	12.00	1 1/3	3
18	12.00	1 1/3	3
20	14.00	1 5/8	3 1/2
22	16.00	1 5/8	3 1/2
24	18.00	1 5/8	3 1/2
26	20.00	1 5/8	3 7/8
28	20.00	1 5/8	3 7/8
30	20.00	1 5/8	3 7/8
32	26.00	1 2/3	4 1/3
36	30.00	1 2/3	4 1/3
42	36.00	2 1/8	6 1/4

MSS Flange Mounting Dimensions (in)							
MSS FLANGE	MAX. THRUST (lbs.)	A1	B1	C1	D1	E1	F1
FA07	4,500	2.166	0.120	4	5/16-18	1 1/16	2.750
FA10	9,000	2.312	0.120	4	3/8-16	1 1/16	4.000
FA14	25,000	3.750	0.160	4	5/8-11	1 3/16	5.500
FA16	35,000	5.000	0.190	4	3/4-10	1 1/8	6.500
FA25	50,000	6.000	0.190	8	5/8-11	1 1/8	10.000
FA30	75,000	7.000	0.190	8	3/4-10	1 1/8	11.750
FA35	140,000	8.500	0.190	8	1-8	1 1/4	14.000
FA40	230,000	9.000	0.320	8	1 1/4-7	1 1/2	16.000

*Thrust of up to 425,000 lbs available.
Consult factory for dimensions

ISO Flange Mounting Dimensions (in)							
ISO FLANGE	MAX. THRUST (lbs.)	A1	B1	C1	D1	E1	F1
F07	4,495	2.165	0.118	4	M8	7/16	2.755
F10	8,990	2.756	0.118	4	M10	5/8	4.016
F14	22,480	3.937	0.157	4	M16	3/4	5.512
F16	33,723	5.118	0.197	4	M20	7/8	6.496
F25	44,964	7.874	0.197	8	M16	7/8	10.000
F30	73,066	9.055	0.197	8	M20	7/8	11.732
F35	157,374	10.236	0.197	8	M30	7/8	14.016
F40	247,302	11.811	0.314	8	M36	7/8	15.984

How to Order

Actuation Solutions and Systems for the World's Most Challenging Environments

SERIES

AT

BORE SIZE

K - 5" S - 14" B - 26"
 L - 6" T - 16" F - 28"
 M - 7" W - 18" I - 30"
 N - 8" X - 20" J - 32"
 P - 10" A - 22" Q - 36"
 R - 12" Y - 24" V - 42"

ROD DIAMETER

E - 1" M - 3 1/2"
 G - 1 3/8" N - 4"
 H - 1 3/4" P - 4 1/2"
 J - 2" R - 5"
 K - 2 1/2" S - 5 1/2"
 L - 3"

ROD END

A4 - Series AT Female

CUSHIONS

8 - none

TRANSDUCER OPTIONS

T1 - Analog output (Ratiometric)
 Digital output (discrete contacts)
 T2 - Analog output (Ratiometric)
 T3 - Analog output (0-20 mA)
 T4 - Analog output (4-20 mA)
 T5 - Analog output (0-5/0-10 Vdc)

POSITIONER

-- Omit if Positioner integrated with Stainless fittings and Stainless Steel braided tubing
 S - Positioner with Stainless Steel Tubing and fittings
 R - Remote Positioner

SEALS

N - Standard Seals
 L - Low Temp

PORTS

NXX - NPT
 TXX - BSPT
 ** XX denotes position
 ex: 12 = Pos 1 head,
 Pos 2 Cap

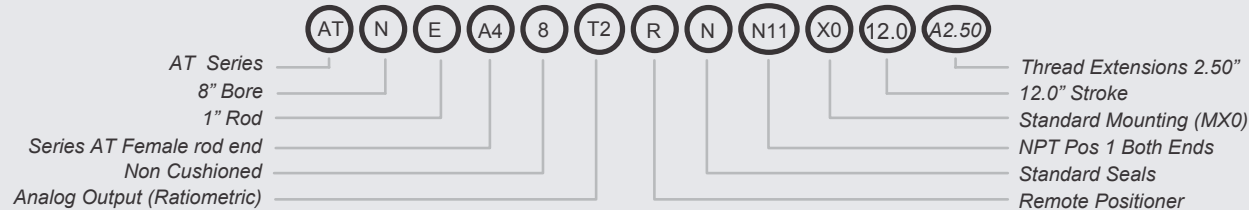
MOUNTINGS

X1 - tie rods extended b.e. (MX1)
 X3 - tie rods extended h.e. (MX3)
 X2 - tie rods extended c.e. (MX2)
 X0 - standard (MX0)
 IS - ISO mounting flange
 MS - MSS mounting flange

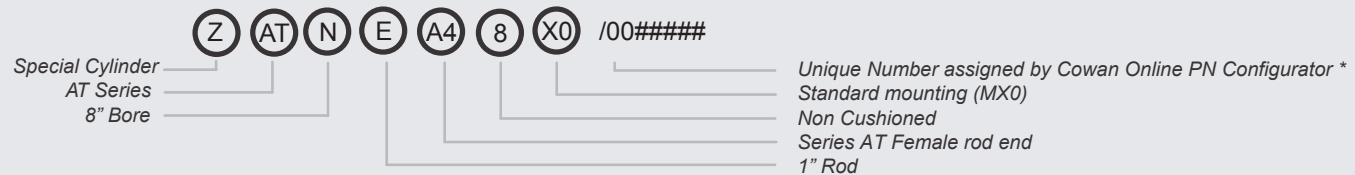
MODS

- Omit if none required
 A# - Thread extensions ex: A2.50 = A = 2.50"
 C1 - Epoxy Paint (Non Stainless Steel parts only)
 C2 - Nickel Plate (Do not specify with C1 or C5)
 C5 - All Stainless Steel construction*
 C6 - Stainless Steel construction with Carbon Fibre barrel*
 LE - Lifting Lugs (8" bore and above)
 M2 - Stainless Steel tie rods (Do not specify with C5 or C6)
 M3 - Stainless Steel piston rod (Do not specify with C5 or C6)
 W# - Rod Extension ex: W2.50 = W = 2.50"
 Modifications to be listed alpha numerically after the stroke #
 ex: ANEA48NN11X012.0A2.50C1W5.50

EXAMPLE



EXAMPLE WITH AUTOMATION OPTIONS



* Refer to Cowan Quote or Invoice for details.

Related materials

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Fail-Safe Systems

Digital Process Control Panels

Pneumatic Process Control Panels

**For sales and technical information,
Contact us at:**

Head Office/Factory:

6194 Notre Dame West
Montreal, Quebec H4C 1V4
TOLL-FREE: 855-341-3415

Sales Office:

211 Watline Ave, Unit 205
Mississauga, Ontario L4Z 1P3
T: 905-829-2910
TOLL-FREE: 855-341-3415
info@cowandynamics.com

f /cowandynamics

in /company/cowan-dynamics

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