

ComoNeo

Type 5887A...

System for process monitoring and process optimization in plastic injection molding applications

ComoNeo is a process monitoring system made by Kistler that is designed to optimize, monitor and document injection molding processes based on cavity pressure. Apart from processing cavity pressures, the unit also allows for the acquisition and evaluation of contact temperatures from the mold (connection via thermocouple amplifier Type 2205A...) and signals from the injection molding machine (e.g. screw position, machine pressure, etc.).

- The "Dashboard" shows all relevant process data at a glance on a single page
- EO Assistant for creating and defining monitor boxes automatically
- Process-oriented operating concept for easy and efficient control of the unit
- Automatic mold identification for rapid mold replacement and short setup times
- Integrated cycle history (data memory) holds at least 50 000 cycles (equals approximately 5 days of "non-stop" production)
- Automatic calculation of the key process parameters necessary to monitor and evaluate process stability
- Restart assistant: the simple way to transfer established processes from one machine to another
- Automatic Hot Runner Balancing (optional)
- Manual and automatic control of the switch-over point (optional)
- Online-quality prediction as an additional method for separating out scrap
- Multicomponent Injection Molding (optional)
- Composite mold (optional)

Description

ComoNeo has been designed specifically for the requirements of injection molding processes and the needs of operators working in the production environment. Its innovative user interface combined with the capacitive multi-touch display allows the user to control the unit with maximum efficiency and perfect ease of use. Since the hardware of the unit has also been designed with functionality in mind, the connections have been separated into a mold side (connections to the injection mold) and a machine side (connections to the injection molding machine or handling device).

On the mold side, one ComoNeo unit can accommodate up to 32 cavity pressure sensors and up to 16 contact temperature sensors (connection via thermocouple amplifier Type 2205A...).



ComoNeo base unit with optional touch screen display

On the machine side, the unit offers 12 digital inputs and 24 digital outputs. The ComoNeo also makes it possible to record and analyze 4 analog machine signals (screw position, machine pressure, etc.). USB and Ethernet interfaces allow for a smooth exchange of data. Since the user interface is entirely based on Web technology, the visualization and the configuration of the ComoNeo are available on any notebook, PC, tablet, and smartphone sharing the network. Refer to the browsers recommended on this data sheet to ensure the best possible operating convenience (page 2). Up to 128 monitoring functions allow the ComoNeo to ensure reliable scrap separation on the basis of the recorded data. The selection and placement of the monitoring functions can be carried out either manually by the user or automatically by the EO Assistant built into the system. Equipped with four different operating modes, the ComoNeo can be adapted perfectly to the injection molding process. Setup and production mode are used, respectively, to optimize the settings and to activate the sorting of the parts. The unit also offers a production mode which will be activated if, for instance, a production break was detected and the injection molding machine is at a standstill. The ComoNeo is set to standby mode when no measurements are being taken. Aside from tools designed for process monitoring, the ComoNeo offers a host of process analysis and process optimization options. These options draw from an integrated cycle history that stores as a minimum 50 000 cycles. If required for more extensive analyses or for documentation purposes, the ComoNeo can be integrated into the corporate network via its Ethernet interface, making it possible for all measured data and evaluations to be transferred completely to Kistler's database AkvisIO or ComoDataCenter.

The ComoNeo is used in the field of plastic injection molding for:

- Mold trials
- Process analysis and optimization
- Process and production monitoring
- Process and production documentation
- Process control (Control of hot runner and switch over)
- Process data transfer

Technical data

General

Measuring time	min	≤40
Sampling rate	kHz	16
Bandwidth	kHz	0.3 ... 5
Number of evaluation objects		128
Dimensions excluding display LxWxH	mm	198x77x148
Operating temperature	°C	0 ... 50
Voltage supply	VDC	18 ... 30
Power consumption excluding display	W	≤15
Power consumption including display	W	≤50
Protection class (installation mold side top)	IP	53
Voltage between supply points and case	V _{rms}	<40

Mold cavity pressure sensor connections

Number	2x4 / 1x8 / 2x8 / 4x8	
Measuring ranges		
Measuring range 1	pC	±14 ... 200
Measuring range 2	pC	±200 ... 20 000
Drift		
at 25°C	pC/s	<0.1
at 50°C	pC/s	<0.5

Thermocouple amplifier Type 2205... connections for cavity wall

Temperature sensors

Number		1x8 / 2x8
Measuring range	V	0 ... ±10
Common-mode voltage range	V	±40
Input impedance	kΩ	100

Voltage inputs for machine signals

Number		1x4
Measuring range	V	0 ... ±10
Common-mode voltage range	V	±40
Input impedance	kΩ	100

Digital inputs (D-Sub 9 pin)

Number		2x2
Type		AC optocoupler
Voltage range	V	0 ... 30
Logical input level high	V	≥10
Logical input level low	V	≤5
Input current at 24 VDC	mA	<5

Digital inputs (D-Sub 15 pin)

Number		2x4
Type		resistance/ Z diode
Voltage range	V	0 ... 30
Logical input level high	V	≥10
Logical input level low	V	≤5
Input impedance	kΩ	≥8

Supported browsers for visualization since ComoNeo 5.0

Google Chrome (recommended)
Microsoft Edge

Dimensional drawings ComoNeo

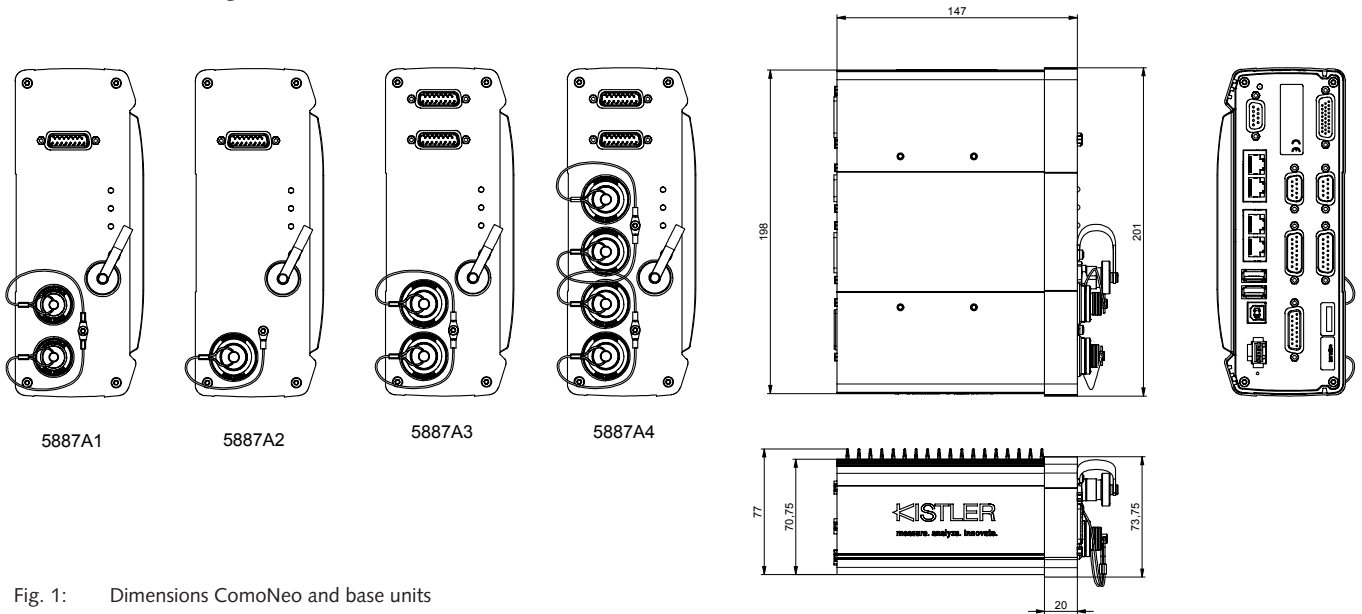


Fig. 1: Dimensions ComoNeo and base units

Dimensional drawings mounting plate

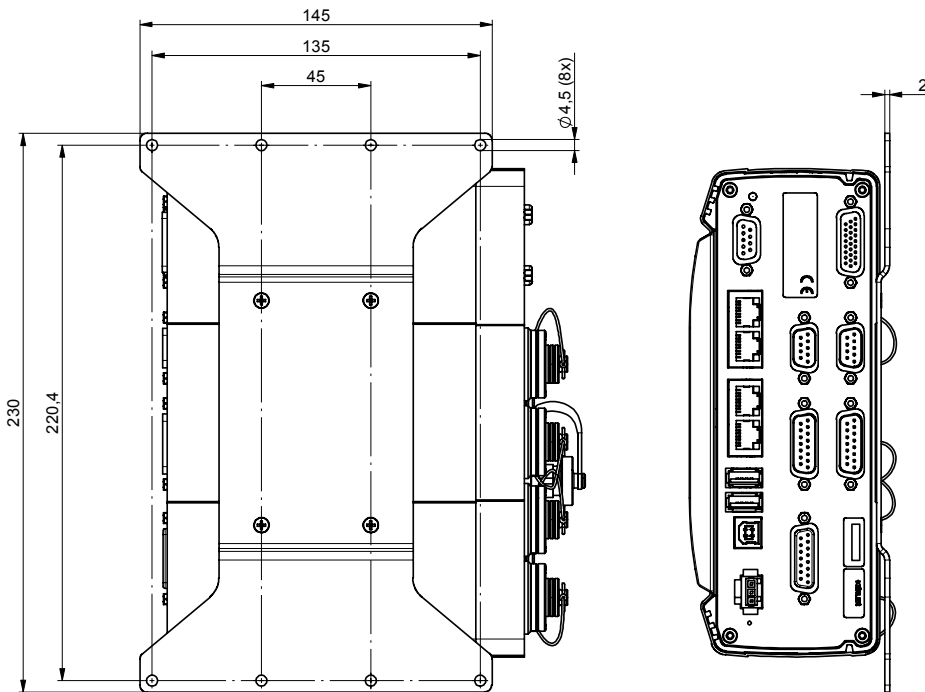


Fig. 2: Dimensions ComoNeo mounting plate 7.511.368

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Dimensions drawings touch display

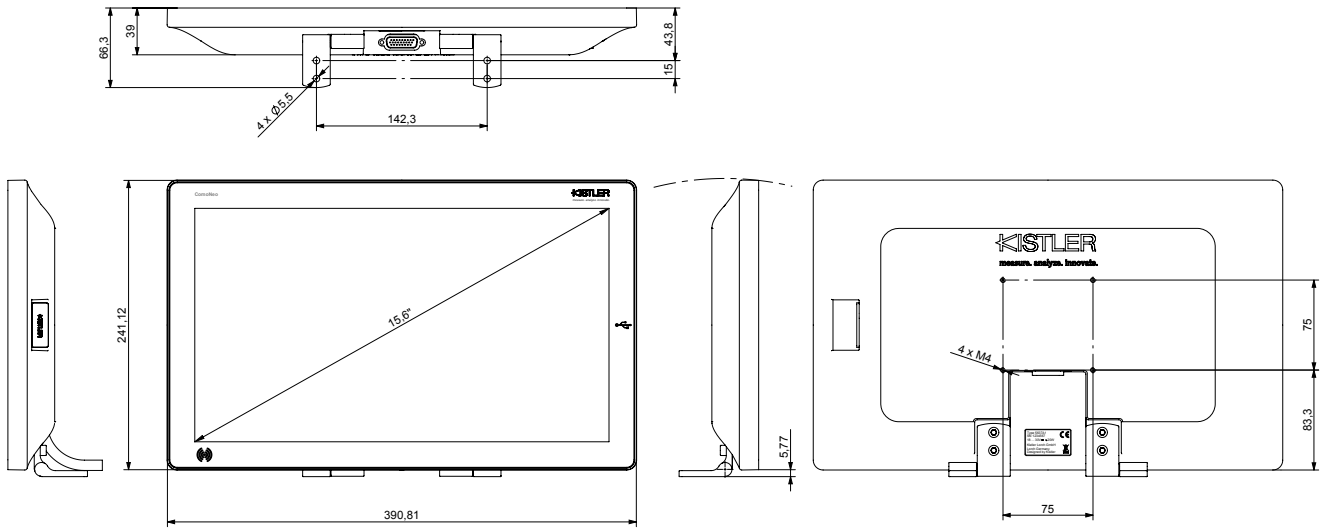


Fig. 3: Dimensions ComoNeo 15.6" touch display

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Connections - mold side

Cavity pressure sensors, 4-channel

Pin allocation	Function	PIN
Charge input	Channel 1	1
X20: Channel 1 ... 4	Channel 2	2
X21: Channel 5 ... 8	Channel 3	3
	Channel 4	4
	GND	5
	1-WIRE	6

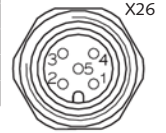
Type: Fischer 103 A056
male 4-channel



Inductive proximity switch

Pin allocation	Function	PIN
Proximity switch	24 VDC	1
	Factory Reset A	2
	Trigger	3
	Factory Reset B	4
	EGND	5

Type: M12,
5 pin female



Cavity pressure sensors, 8-channel

Pin allocation	Function	PIN
Charge input	Channel 1	1
X20: Channel 1 ... 8	Channel 2	2
X21: Channel 9 ... 16	Channel 3	3
X22: Channel 17 ... 24	Channel 4	4
X23: Channel 25 ... 32	Channel 5	5
	Channel 6	6
	Channel 7	7
	Channel 8	8
	vacant	9
	1-WIRE	10
	GND	11

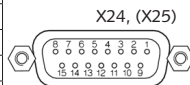
Type: Fischer 104
male 8-channel



Voltage Input, Thermocouple Amplifiers, 8-channel

Pin allocation	Function	PIN
Voltage input	Channel 1	1
X24: Channel 1 ... 8	Channel 2	2
X25: Channel 9 ... 16	Channel 3	3
	Channel 4	4
	Channel 5	5
	Channel 6	6
	Channel 7	7
	Channel 8	8
	24 VDC	9
	Dig. Output DO 1	10
	Dig. Output DO 2	11
	Reference point DO x	12
	1-WIRE	13
	AGND (channel x, 1-WIRE)	14
	EGND (24 V VDC)	15

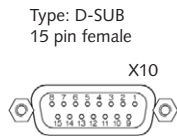
Type: D-SUB
15 pin female



Connectors - machine side

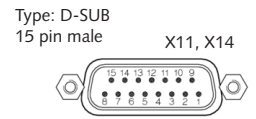
Voltage inputs for 4 machine signals

Pin allocation	Function	PIN
Voltage input X10: Channel 1 ... 4	Channel 1 +	1
	Channel 1 –	2
	Channel 2 +	3
	Channel 2 –	4
	Channel 3 +	5
	Channel 3 –	6
	Channel 4 +	7
	Channel 4 –	8
	24 VDC	9
	Analog outp. AO 1	10
	AGND (channel x, AO x)	11
	vacant	12
	1-WIRE	13
	GND (1-WIRE)	14
	EGND (24 V VDC)	15



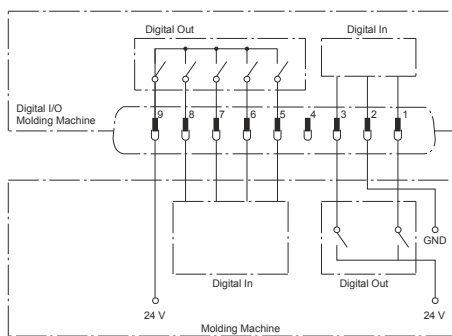
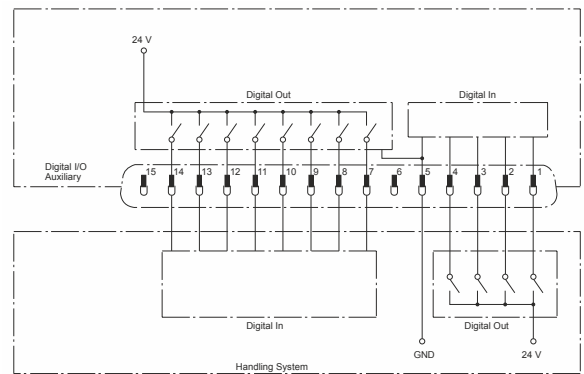
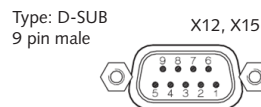
Digital inputs and outputs

Pin allocation	Function		PIN
Digital I/O	DI 1	Reserve1_in	1
X11: Auxiliary 1	DI 2	Reserve2_in	2
X14: Auxiliary 2	DI 3	Reserve3_in	3
	DI 4	Reserve4_in	4
	DGND_Dlx_DOx		5
	vacant		6
	DO 1	EO-Result1_out	7
	DO 2	EO-Result2_out	8
	DO 3	EO-Result3_out	9
	DO 4	EO-Result4_out	10
	DO 5	EO-Result5_out	11
	DO 6	EO-Result6_out	12
	DO 7	EO-Result7_out	13
	DO 8	EO-Result8_out	14
	vacant		15



Digital inputs and outputs

Pin allocation	Function		PIN
Digital I/O	DI 1	Cycle start_in	1
X12: IMM 1	DGND_DIx		2
X15: IMM 2	DI 2	Universal_in	3
	24 VDC		4
	DO 1	Device ready	5
	DO 2	RT Thresholds	6
	DO 3	EO "Sorting"	7
	DO 4	Alarm	8
	Reference point DO_x		9



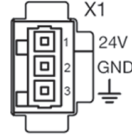
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- Damage might be caused due to wrong wiring!

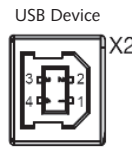
Operating voltage input

Pin allocation	Function	PIN
Operating voltage	24 VDC	1
	EGND	2
	Shielding (housing)	3



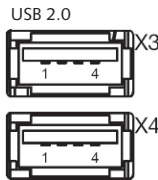
USB device

Pin Allocation	Function	PIN
USB Device	5 V	1
	D-	2
	D+	3
	GND	4



USB 2.0 Master X3, X4

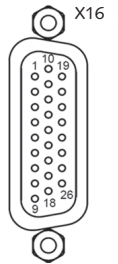
Pin Allocation	Function	PIN
USB 2.0 Master	5 V	1
	D-	2
	D+	3
	GND	4



Display connection X16

Pin Allocation	Function	PIN
Display connection	LVDS 2P	1
	LVDS 2N	2
	LVDS CLK P	3
	LVDS CLK N	4
	BLEN	5
	5VB	6
	GND	7
	GND	8
	E24V	9
	LVDS 1P	10
	LVDS 1N	11
	LVDS 3P	12
	LVDS 3N	13
	PWREN	14
	5VB	15
	5VA	16
	GND	17
	N.C.	18
	LVDS 0P	19
	LVDS 0N	20
	USB P	21
	USB N	22
	PWM	23
	5VA	24
	GND	25
	EGND	26

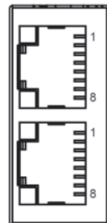
Type: HD-SUB 26



Ethernet 10/100 (TCP/IP, PC level) X5, X6

Pin Allocation	Function	PIN
Ethernet 10/100 RJ45	RX+	1
	RX-	2
	TX+	3
	5	4
	4	5
	TX-	6
	8	7
	7	8

Type: 2x RJ45



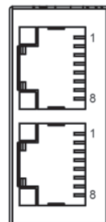
OPC UA Interface

Interface	Ethernet
OPC variant	OPC UA Server
OPC standard	following Euromap 77

Ethernet 10/100 (field bus slave) X7, X8 (without function)

Pin Allocation	Function	PIN
Ethernet 10/100 RJ45	RX+	1
	RX-	2
	TX+	3
	5	4
	4	5
	TX-	6
	8	7
	7	8

Type: 2x RJ45



Included accessories	Type/Art. No.	
• Ethernet cable, crossed RJ45, length: 5 m	1200A49	Connecting cable digital signals injection molding machine/ Handling D-Sub 9 pin
• Mounting plate	55135343	• Length l = 7 m 1500B43A7
• Case feet, self-adhesive, black	65008306	• Length to customer order 1500B43Asp (L _{min} = 1 m/L _{max} = 15 m)
• Data carrier: ComoNeo, maXYmos, NCFx software and documentation		
• Connector for the voltage supply	55145411	8-channel extension cable to 8-channel connector Type 1710B... at mold
		• Length l = 1 m 1997A1
		• Length l = 2 m 1997A2
		• Length l = 5 m 1997A5
		• Length to customer order 1997Aasp (L _{min} = 1 m/L _{max} = 20 m)
ComoNeo software activations codes (Unlock code for subsequent activation of the software)		
• ComoNeoMULTIFLOW Activation of automatic Hot Runner Balancing (Installation service separately: 9962E02-D1-1)	2809A3	
• ComoNeo SWITCH – Activation for automatic Switch-Over detection (SLP)	2834A2	4-channel extension cable to 4-channel connector Type 1708B... at mold
• ComoNeoMERGE – Multicomponent injection molding	2834A3	• Length l = 1 m 1995A1
• ComoNeoCOMPOSITE – Composite mold	2834A5	• Length l = 2 m 1995A2
• Customizable Sensors – License to connect external sensors (0–10V) incl. choose of different units via voltage input on the mold side	2834A6	• Length l = 5 m 1995A5
• ComoNeoCONNECT – License to activate the transfer of curve data via OPCUA interface	2834A7	• Length to customer order 1995Aasp (L _{min} = 1 m/L _{max} = 20 m)
• ComoNeoLOG – License for activating the extended change log (i.e. for Audit Trails)	2834A8	
• ComoNeoLDAP – License to connect ComoNeo with Windows user management	2834A9	
• ComoNeo Medical SW Bundle – software bundle containing 2834A8 and 2834A9	2834A10	
• ComoNeoPREDICT – Online Quality prediction (in combination with StasaQC software – part of delivery)	2824A1	
• Connection to the AkvisIO or ComoDataCenter	2829D01	Additional ComoNeo accessories
		• AkvisIO 2878A... (database software for documentation and detailed analysis)
		• ComoDataCenter 2829D... (database software for documentation and detailed analysis)
		• Hardware adaptor: Ethernet to RS-232 or RS-485 (for Multiflow) 2808A2
		Connecting cable digital signals injection molding machine/ handling D-Sub 15 pin
		• Length l = 7 m 1500B42A7
		• Length to customer order 1500B42Asp (L _{min} = 1 m/L _{max} = 15 m)
		Connecting cable analog signals injection molding machine/ handling D-Sub 15 pin
		• Length l = 7 m 1500B47A7
		• Length to customer order 1500B47Asp (L _{min} = 1 m/L _{max} = 15 m)
ComoNeo standard accessories		• Thermocouple amplifier for 2, 4 or 8 2205B... Temperature sensors type K, J, N
• Power adapter 100 ... 240 VAC/24 VDC incl. country specific cable	5781B5	
ComoNeo display for optimum visualization		4-channel extension cable to thermocouple amplifier Type 2205A... at mold
• 15.6" capacitive multi-touch display	5637A1	• Length l = 2 m 1491A1A2
• Connecting cable display (l = 2.5 m)	1200A217A2.5	• Length l = 5 m 1491A1A5
• Connecting cable (l = 5 m)	1200A217A5	• Length to customer order 1491A1Aasp (L _{min} = 0.3 m/L _{max} = 20 m)

Other ComoNeo accessories (continued)

8-channel Y extension cable to two thermocouple amplifiers

Type 2205B... at mold

- Length l = 2 m 1491A2A2
- Length l = 5 m 1491A2A5

- Inductive proximity switch 2231A1
including connecting cable, length l = 5 m

Adapter boxes and additional cables

- Adapter box 4-channel connector 5415A1
ComoNeo/BNC
- Adapter box 8-channel connector 5415A2
ComoNeo/BNC
- Adapter box 8-channel connector 5415A3
ComoNeo/2x4-channel connector at mold
- Adapter box 4-channel connector 5415A4
ComoNeo/8-channel connector at mold

1-channel extension cable to single connector at mold

- Length l = 2 m 1991A2
- Length l = 5 m 1991A5
- Length to customer order 1991A5p
(L_{min} = 1 m/L_{max} = 20 m)

Ordering key ComoNeo

Type 5887A

Base unit

ComoNeo for 8 (2x4) cavity pressure sensors and 8 (temperatur-) Sensors via volt input	1
ComoNeo for 8 (1x8) cavity pressure sensors and 8 (temperatur-) Sensors via volt input	2
ComoNeo for 16 (2x8) cavity pressure sensors and 16 (temperatur-) sensors via volt input	3
ComoNeo for 32 (4x8) cavity pressure sensors and 16 (temperatur-) sensors via volt input	4



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