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ComoScout

Type 5889A...

System for process monitoring and -optimization in plastic injection molding

ComoScout is a process monitoring system for injection molding machines. It uses signals from any sensors with a voltage output, e.g. temperature sensors or signals from an injection molding machine to monitor the process in general. Based on the acquired data, ComoScout offers versatile monitoring and optimization functions and offers possibilities to retrofit an OPCUA data interface.

- All relevant process data are summarized on one page on the "dashboard"
- Process-oriented operating philosophy for simple and efficient operation of the unit
- Integrated cycle history (data memory) of at least 50 000 cycles (corresponds to about 5 days of "non-stop" production)
- Automatic determination of the most important process parameters for monitoring and evaluation of process stability.
- Process control by means of real-time thresholds
- OPCUA interface

Description

The digitalization of production processes offers new opportunities in many industries. It provides more product flexibility and variety, enhances resource and cost efficiency, and it leverages transparency and traceability. ComoScout is the ideal entry point for process monitoring and Industry 4.0 in plastics processing and injection molding: it offers great value for money for users not yet familiar with digital feedback systems.

Thanks to its OPC-UA functionality, ComoScout serves as a data-driven interface to higher-level systems such as an MES. It therefore is able to connect even older machines with modern smart production environments. This retrofit capability makes it especially attractive for sectors and applications to enter into the digital world.

If required for more extensive analyses or for documentation purposes, the ComoScout 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.

Application

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

- Process and production monitoring
- Process and production documentation
- Process analysis
- 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 frontside top)	IP	53
Voltage between supply points and case	V_{rms}	<40

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Technical data (continuation)

Voltage Inputs on front side (X24/X25)

Number		2x8
Measuring range	V	0 … ±10
Common-mode voltage range	V	±40
Input impedance	kΩ	100
Supply of external consumers, thereby max current (sum of all consumers)	VDC mA	24 400

Voltage inputs on back side (X10)

Number		1x4
Measuring range	V	0 … ±10
Common-mode voltage range	V	±40
Input impedance	kΩ	100
Supply of external consumers, thereby max current (sum of all consumers)	VDC mA	24 400
Voltage output	V	0 … ±10
Output impedance	Ω	<50

Digital Inputs (D-Sub 9 pol)

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 pol)

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

- Google Chrome (recommended)
- Internet Explorer (from Version 11)

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Dimensional drawings ComoScout

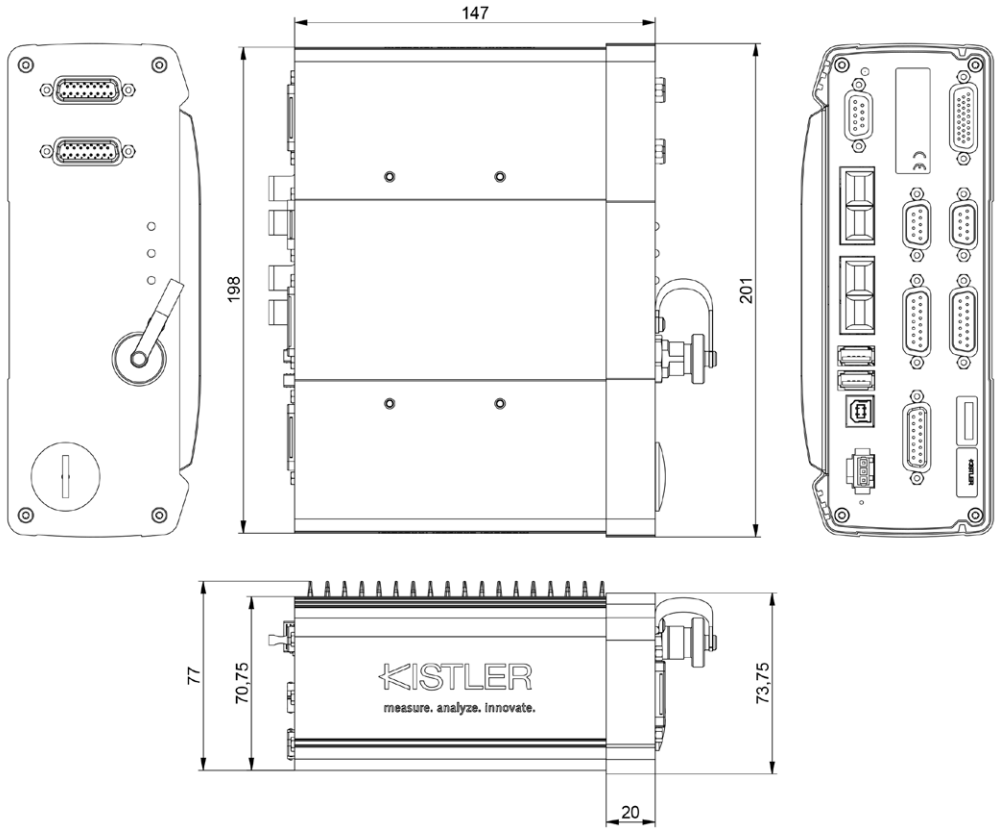

Fig. 1: Dimensions ComoScout basic unit

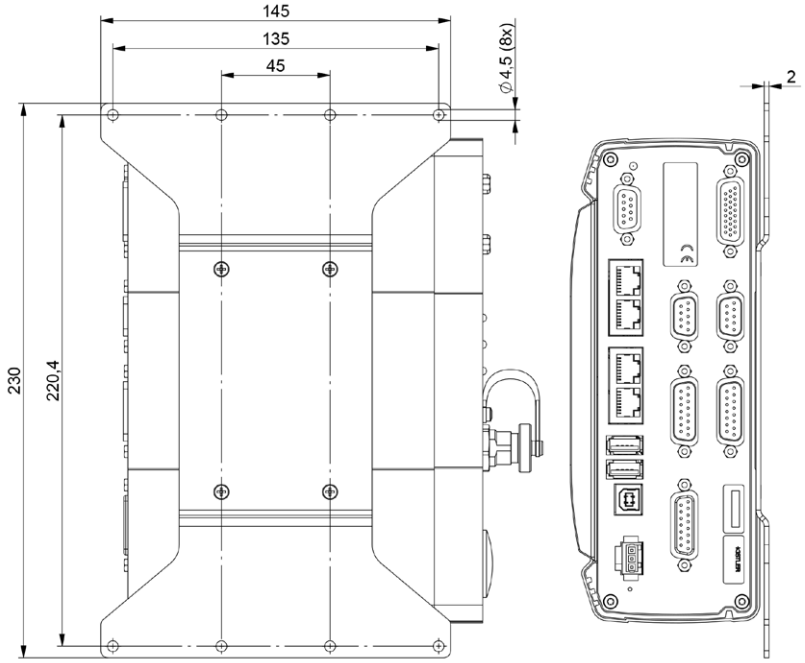

Fig. 2: Dimensions ComoScout mounting plate Mat. No. 7.511.368

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Dimensions drawings touch display

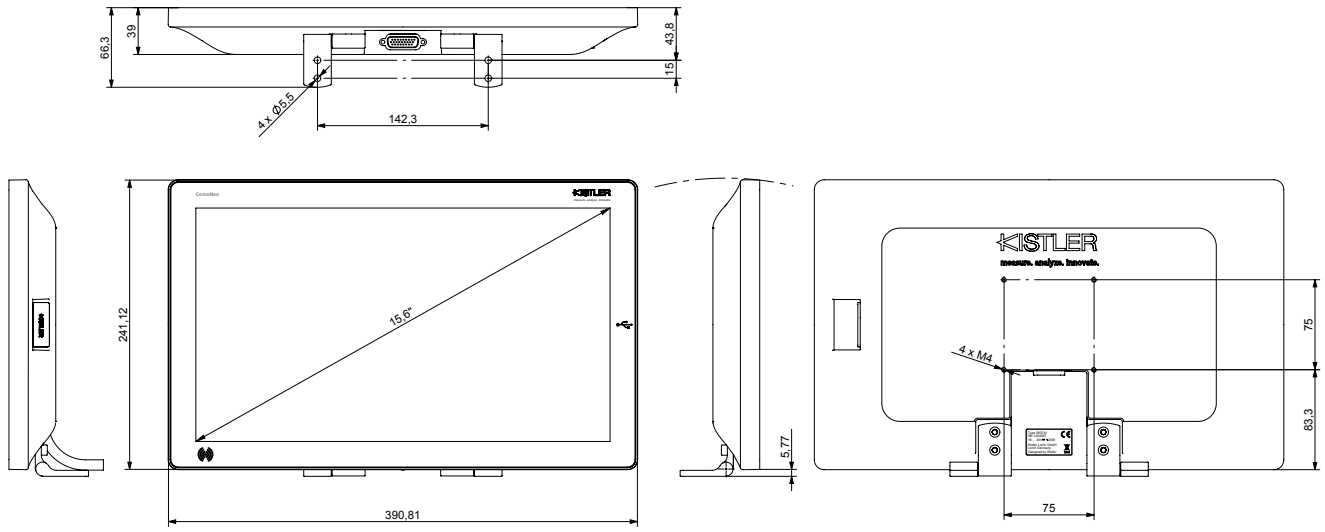


Fig. 3: Dimensions ComoNeo 15.6" touch display

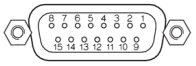
Connections front side

Voltage input, 8-channel

Steckerbelegung	Function	PIN
Voltage input X24: channel 1 … 8 X25: channel 9 … 16	Channel 1	1
	Channel 2	2
	Channel 3	3
	Channel 4	4
	Channel 5	5
	Channel 6	6
	Channel 7	7
	Channel 8	8
	24 VDC	9
	Dig. Output DO1	10
	Dig. Output DO2	11
	Reference Point DO x	12
	1-WIRE	13
	AGND (Channel x, 1-WIRE)	14
	EGND (24 V VDC)	15

Type: D-SUB
15 pol female

X24, (X25)

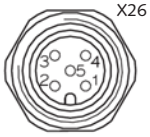


Inducative proximity switch

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

Type: M12,
5 pol female

X26



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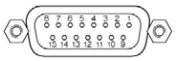
Connectors back side

Voltage inputs for 4 analoge 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, AO x)	11
	vacant	12
	1-WIRE	13
	GND (1-WIRE)	14
	EGND (24 V VDC)	15

Type: D-SUB
15 pol female

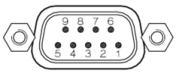
X10



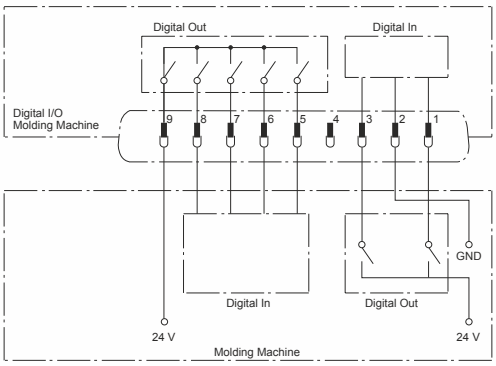
Digital Inputs and outputs D-Sub 9 pol

Type: D-SUB
9 pol male

X12, X15



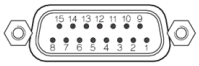
PIN allocation	Function		PIN
Digital E/A X12: IMM 1 X15: IMM 2	DI 1	Cycle start_in	1
	DGND_DIx		2
	DI 2	Universal_in	3
	24 VDC		4
	DO 1	Device ready	5
	DO 2	EZ-Thresholds	6
	DO 3	BG “Sorting”	7
	DO 4	Alarm	8
	Reference point DO_x		9



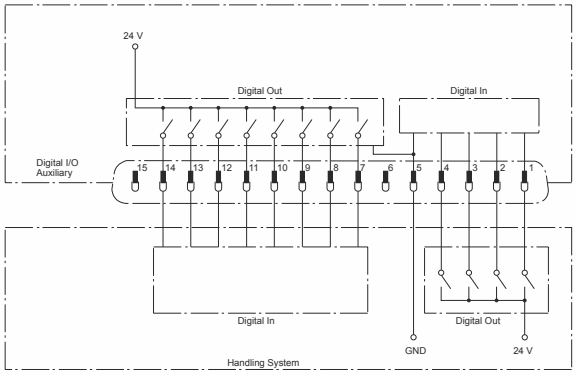
Digital Inputs and outputs D-Sub 15 pol

Type: D-SUB
15 pol male

X11, X14



PIN allocation	Function		PIN
Digital E/A X11: Auxiliary 1 X14: Auxiliary 2	DI 1	Reserve1_in	1
	DI 2	Reserve2_in	2
	DI 3	Reserve3_in	3
	DI 4	Reserve4_in	4
	DGND_DIx_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



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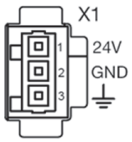
CAUTION

- Damage might be caused due to wrong wiring!

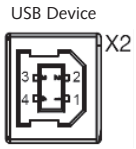
Operating voltage input

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



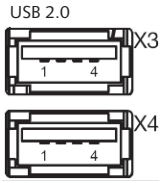
USB device

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



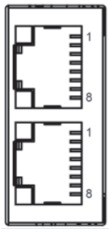
USB 2.0 Master X3, X4

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



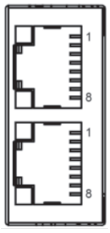
Ethernet 10/100 (TCP/IP, PC level) X5, X6

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



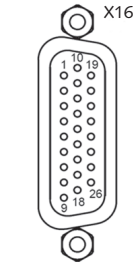
Ethernet 10/100 (field bus slave) X7, X8 (without function)

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



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



OPC UA Interface

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

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Included Accessories	**Type/Mat. No.**
• Ethernet cable crossed RJ45, length: 5 m	1200A49
• Mounting plate	55135343
• Case feet, self-adhesive, black	
• Data carrier ComoNeo, maXYmos, NCFx software and documentation	

ComoScout Software activation codes
(Unlock code for subsequent activation of the software)

• ComoNeoCONNECT License to activate the transfer of curve data via OPCUA interface	2834A7
• 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 Paket software bundle containing 2834A8 and 2834A9	2834A10
• Connection to AkvisIO	2829D01

ComoScout stanard accessories

• Power adapter 100 … 240 VAC/24 VDC incl. country specific cable	5781B5
ComoNeo display for optimum visualization	
– 15,6“ capacitive multi-touch display	5637A1
– Connection cable display (l = 2.5 m)	1200A217A2,5
– Connection cable display (l = 5 m)	1200A217A5

Connecting cable digital signals injection molding machine/ Handling D-Sub 9 pin

• Length l = 7 m	1500B43A7
• Length to customer order (L_{min} = 1 m/L_{max} = 15 m)	1500B43Asp

Connecting cable digital signals injection molding machine / handling D-Sub 15 pin

• Length l = 7 m	1500B42A7
• Length to customer order (L_{min} = 1 m/L_{max} = 15 m)	1500B42Asp

Connecting cable analog signals injection molding machine / Handling D-Sub 15 pin

• Length l = 7 m	1500B47A7
• Length to customer order (L_{min} = 1 m/L_{max} = 15 m)	1500B47Asp

• Thermocouple amplifier for 2 … 8 Temperature sensors Type K, J, N	2205…

4-channel extension cable to thermocouple amplifier Type 2205… at mold

• Length l = 2 m	1491A2
• Length l = 5 m	1491A1A5
• Length to customer order (L_{min} = 0,3 m/L_{max} = 20 m)	1491A1Asp

8-channel Y extension cable to thermocouple amplifier Typ 2205… at mold

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

• Inductive proximity switch incl. Connecting cable Length l = 5 m	2231A1

Additional ComoScout accessories

• AkvisIO (database software for documentation and detailed analysis)	2878A...

Only accessories specific to ComoScout and approved by Kistler may be used.
Ordering key ComoScout

Type 5889A ☐

Base unit

ComoScout for 16 + 4 analog voltage inputs (16 on the front side, 4 on the back side)	**1**

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