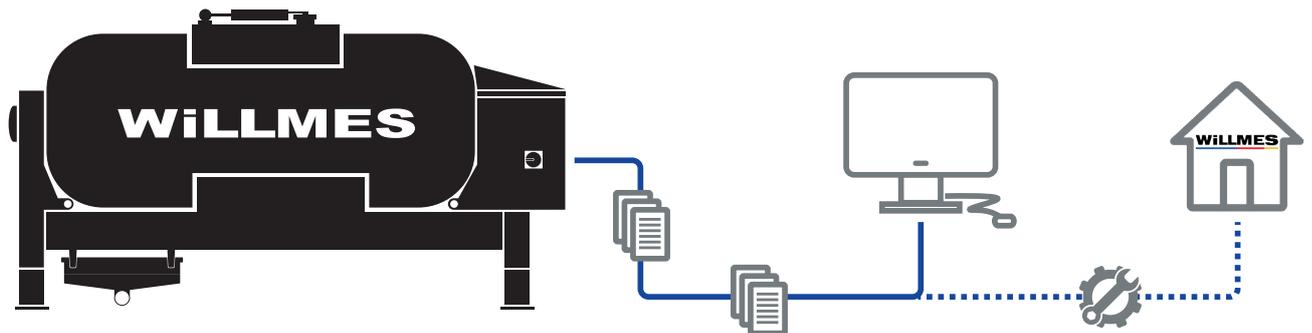Option suitable for:

SIGMA & MERLIN

WiLLMES

Specialists in
Pressing Technology

Smart interface 4.0

Interface for data exchange

Short description

Smart interface 4.0 connects to your computer via your local network. Current press data and operating modes are transmitted to the customer's network via the local network connection using an Ethernet interface. There, the data can be integrated into your process visualisation software.

Features and benefits

For complete documentation, the press data can be visualised, stored and evaluated in the customer's own IT system. This enables a higher-level process analysis, which can also be used to optimise the pressing process.

Smart interface 4.0 is compatible with all SIGMA and MERLIN presses and can be retrofitted at any time.

Remote maintenance is also possible via the Ethernet interface, provided VPN access is set up.

Smart Interface 4.0 requires a hardware extension with a communications processor. The customer must have an IP address for the press and a cable connection to the network.

Technical details

This option makes it possible to integrate the press-related data into a higher-level system. An overview of the listed data that can be read by a higher-level system can be found at the end of the description.

UDP is used as the interface. Integration into the existing system is done by the customer. Integration into a system that already works with a Siemens CPU is alternatively possible with this option.

Lean includes hardware and the data that can be read by UDP
      a. Writing data (program number, etc.) is only possible after separate individual offer (in addition to LEAN).
      b. With higher-level Siemens control systems, a connection by PUT and GET at predefined programme points is possible by extending the scope of the LEAN card.

Other systems or communication paths are not possible without a hardware change and must be offered separately.

OPC and other variants are only possible upon request and detailed pricing.
Commissioning, telephone support and remote control (PLC) for 2 hours is always included.

For remote maintenance, the press must be connected to a network with internet access and VPN must be provided.

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byte/bit	Bedeutung	definition		
	Betriebsart Byte_0	running mode byte_0		
0.0	Steuerung EIN	control ON	true = ON	false = OFF
0.1	BA Vakuum	mode vacuum	true = ON	false = OFF
0.2	BA Trommel	mode turning	true = ON	false = OFF
0.3	BA Pressen manuell	mode pressing manual	true = ON	false = OFF
0.4	BA Automatik	mode automatic	true = ON	false = OFF
0.5	Automatik läuft	automatic is running	true = ON	false = OFF
0.6	Automatik unterbrochen	automatic is interrupted	true = ON	false = OFF
0.7	BA Zentralbefüllung	mode axial-filling	true = ON	false = OFF
	Betriebsart Byte_1	running mode byte_1		
1.0	Druckabbau	vacuum is running	true = ON	false = OFF
1.1	Druckaufbau	pressing is running	true = ON	false = OFF
1.2	Vakuum erreicht	vacuum is reached	true = ON	false = OFF
1.3	Solldruck erreicht	target-pressure is reached	true = ON	false = OFF
1.4	Drehen links	drum is turning ccw	true = ON	false = OFF
1.5	Drehen rechts	drum is turning cw	true = ON	false = OFF
1.6	Störung liegt vor	fault is active	true = ON	false = OFF
1.7	Warnung liegt vor	warning is active	true = ON	false = OFF
	Störungen Byte_2	faults byte_2		
2.0	Drehfeld n.i.O.	DIRECTION OF ROTATION NOT OK	true = ON	false = OFF
2.1	----	----		
2.2	Druckaufbau Gebläse	BLOWER PRESSURE BUILT-UP	true = ON	false = OFF
2.3	Druckaufbau Verdichter	COMPRESSOR PRESSURE BUILT UP	true = ON	false = OFF
2.4	Druckabbau	PRESSURE BUILT DOWN	true = ON	false = OFF
2.5	Klappblech n.i.O.	FLAP SHEET NOT OK	true = ON	false = OFF
2.6	Deckel nicht geschlossen	DOOR NOT CLOSED	true = ON	false = OFF
2.7	Mostpumpe - Saftwanne voll	TROUBLE JUICE PUMP JUICE TRAY FILLED	true = ON	false = OFF
	Störungen Byte_3	faults byte_3		
3.0	Druckmessdose ZB	PRESSURE TRANSDUCER CENTRAL FILLING	true = ON	false = OFF
3.1	NOT-AUS Steuerspannung	EMERGENCY STOP MAINPOWER	true = ON	false = OFF
3.2	Seilzug Tresterblech	SAFTY ROPE POMACE GUARD	true = ON	false = OFF
3.3	Druckluft	COMPRESSED AIR	true = ON	false = OFF
3.4	Motorschutzschalter	PROTECTIVE MOTOR SWTICH	true = ON	false = OFF
3.5	----	----		
3.6	Saftwanne	JUICE TRAY	true = ON	false = OFF
3.7	Druckmessdose Pressdruck	PRESSURE TRANSDUCER PRESSING PRESS.	true = ON	false = OFF
	Störungen Byte_4	faults byte_4		
4.0	Fehlpos. Initiatoren Inertgas	Wrong position N² Sensor	true = ON	false = OFF
4.1	Inertgas deaktiviert	INERT GAS disabled	true = ON	false = OFF
4.2	----	----		
4.3	----	----		
4.4	----	----		
4.5	----	----		
4.6	----	----		
4.7	----	----		
	Störungen Byte_5	faults byte_5		
5.0	----	----		
5.1	----	----		
5.2	Ausfall Flow-Control	FAILURE FLOW-CONTROL	true = ON	false = OFF
5.3	Abschaltdruck ZB	pressure central filling	true = ON	false = OFF
5.4	Druckmessdose Inertgas	TRANSDUCER INERTGAS-PRESSURE	true = ON	false = OFF

byte/bit	Bedeutung	definition		
5.5	Inertgas-Kupplung nicht dicht	INERTGAS-CLUTCH NOT THICK	true = ON	false = OFF
5.6	Inertgas Gasmangel	LACK OF GAS	true = ON	false = OFF
5.7	Fehler beim Andocken	FAULT DURING COUPLING ACTION	true = ON	false = OFF
	Meldungen Byte_6	messages byte_6		
6.0	Deckel nicht geschlossen	Door not closed	true = ON	false = OFF
6.1	Wasserventil	Water valve !	true = ON	false = OFF
6.2	Lagerschmierung erforderlich	Lubricating drum, bearing required	true = ON	false = OFF
6.3	Presse extern gesperrt	External locked	true = ON	false = OFF
6.4	----	----		
6.5	----	----		
6.6	Drehen nicht möglich	Lid mouvement - turn not possible	true = ON	false = OFF
6.7	----	----		
	Meldungen Byte_7	messages byte_7		
7.0	Kein Vakuum	no vacuum	true = ON	false = OFF
7.1	Keine Füllstellung	no fillposition	true = ON	false = OFF
7.2	Keine Pressposition	no pressposition	true = ON	false = OFF
7.3	ZB offen	Central filling open	true = ON	false = OFF
7.4	Andere BA aktiv	Other mode active	true = ON	false = OFF
7.5	Saftwanne nicht unter Presse	Juice tray not in place	true = ON	false = OFF
7.6	Klappblech offen	Flap sheet not in place	true = ON	false = OFF
7.7	Saftwanne unter Presse	Juice tray under drum	true = ON	false = OFF
	Meldungen Byte_8	messages byte_8		
8.0	----	----		
8.1	----	----		
8.2	----	----		
8.3	Automatik aktiv bei Inertgas	automatic active at IGE	true = ON	false = OFF
8.4	Inertgas deaktiviert	IGE disabled	true = ON	false = OFF
8.5	----	----		
8.6	----	----		
8.7	Inertgas Schlitten vorne	IGE slide forward	true = ON	false = OFF
	Meldungen Byte_9	messages byte_9		
9.0	Presse in Füllposition	drum in fill-position	true = ON	false = OFF
9.1	Presse in Pressposition	drum in press-position	true = ON	false = OFF
9.2	Presse in Entlastposition	drum in release-position	true = ON	false = OFF
9.3	Presse in Reinigungsposition	drum in cleaning-position	true = ON	false = OFF
9.4	----	----		
9.5	----	----		
9.6	----	----		
9.7	----	----		
	Staus Byte_10	status byte_10		
10	Deckel	door	see remark 10)	
	Staus Byte_11	status byte_11		
11	Saftventil	juice valve	1 = open	0 = closed
	Staus Byte_12	status byte_12		
12	Zentralbefüllung ZB	Central filling	1 = open	0 = closed
	Staus Byte_13	status byte_13		
13	Mostpumpe	most pump	1 = on	0 = off
	Staus Byte_14 + 15	status byte_14 + 15		
14	Solldruck High-Byte	target pressure high-byte		
15	Solldruck Low-Byte	target pressure low-byte		
	Staus Byte_16 + 17	status byte_16 + 17		

byte/bit	Bedeutung	definition
16	Istdruck High-Byte	actual pressure high-byte
17	Istdruck Low-Byte	actual pressure low-byte
	Reserve Byte_18 - 23	options byte_18 - 23
18 - 23	----	----
	Staus Byte_24	status byte_24
24	Automatik akt. Schritt-Nr.	automatic act. Step-no.
	Staus Byte_25	status byte_25
25	Automatik akt. Zyklus-Nr.	automatic act. cycle-no.
	Aktuelles Auto-Prg. Byte_26 - 46	actual auto-progr. Byte 26 - 46
26	Auto_RepCyclNr	Auto_RepCyclNr
27	Auto_LastSerreNr	Auto_LastSerreNr
28 + 29	Auto_Run_pe (High-,Low-Byte)	Auto_Run_pe (High-,Low-Byte)
30 + 31	Auto_Run_dp (High-,Low-Byte)	Auto_Run_dp (High-,Low-Byte)
32 + 33	Auto_Run_d (High-,Low-Byte)	Auto_Run_d (High-,Low-Byte)
34	Auto_Run_x	Auto_Run_x
35	Auto_Run_R	Auto_Run_R
36	Auto_Run_y	Auto_Run_y
37	Auto_Run_Option	Auto_Run_Option
38 + 39	Auto_Run_pmax (High-,Low-Byte)	Auto_Run_pmax (High-,Low-Byte)
40 + 41	Auto_Run_dpFC (High-,Low-Byte)	Auto_Run_dpFC (High-,Low-Byte)
42 + 43	Auto_Run_pLimFC (High-,Low-Byte)	Auto_Run_pLimFC (High-,Low-Byte)
44 + 45	Auto_Run_dmin (High-,Low-Byte)	Auto_Run_dmin (High-,Low-Byte)
46 + 47	Auto_Run_tFC (High-,Low-Byte)	Auto_Run_tFC (High-,Low-Byte)
	Automatik Laufzeit Byte_48 - 51	automatik runtime Byte 48 - 51
48 + 49	Laufzeit Minuten (High-,Low-Byte)	auto-time minutes (High-,Low-Byte)
50 + 51	Laufzeit Sekunden (High-,Low-Byte)	auto-time seconds (High-,Low-Byte)
	Reserve Byte_52 - 73	options byte 52 - 73
52 - 73	----	----

UDP-TCP-Communication

byte/bit	Bedeutung	definition

UDP/TCP-Test Tool:

Die Funktionalität der Kommunikation kann mit nachstehendem Tool überprüft werden. Hierbei muss in der linken Spalte/Hälfte die IP-Adresse 10.124.11.51 (= eingestellte Adresse auf dem CP343-1 Lean) sowie der Port 5120 eingetragen werden. Danach mit der Taste "Send" irgendwelche Daten (z.B. Enter data to send ... oder 1234) diese Daten an die CP343-1 senden. Hiermit erfasst die CP die IP-Adresse des Senders und schickt insgesamt 80 Byte an den Sender (siehe Local IP-Address) über Port 5120 (muss in der rechten Hälfte/Spalte eingetragen werden) im Sekundentakt zurück. Hinweis: Die ersten 6 Byte beinhalten die IP-Adresse und die Port-Nr. des Empfängers und sind nicht in den "Received Data" explizit dargestellt.

With the following tool the communication can be tested. For this the IP-address 10.124.11.51 (= this address is configured at CP343-1 Lean-module) must be edit as well as the Port 5120. Then some data like "Enter data to send ..." or "1234" must be send to the CP343-1 Lean by pushing button "Send". So the CP recognize the IP-address of the sender-system and can send send now totally 80 byte back to sender (see Local IP-Address) by using Port 5120 (must be edit also) every second. Remarks: The first 6 byte content the IP-address and Port-no. and are not shown in the received Data.