

Elektroplan (Zusatz) Electric diagram (addition)

WITOS TCU S3000

S3000
Baureihe /
Series

-
Seriennummer /
Serial No

23.05.2017
Ausgabedatum /
Date of issue

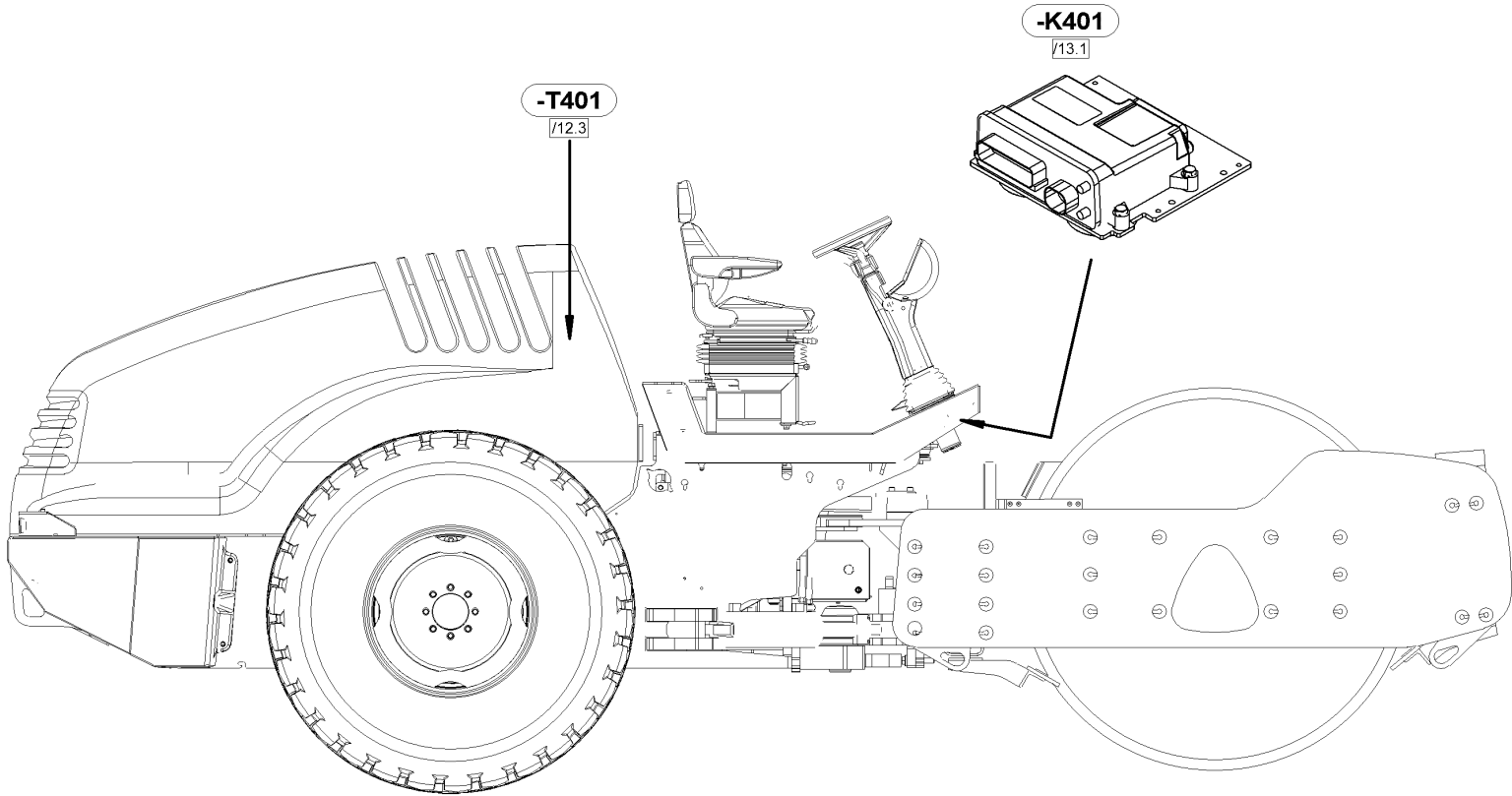
2485499_00
Katalog Bestellnummer /
Catalogue order No

Schutzvermerk nach ISO 16016

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zum Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

Protection Notice ISO 16016

The reproduction, distribution and utilization of this document as well as the communication of its contents to others without explicit authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or design.



Drawing by:		Approved by:		last change:	
date	06.03.2017	date		date	
name	Lan	name		name	
E - CAE		Document type:		Function group No.:	
		ESP			

Status:

AE = changeable

PF = prototype release

SF = serial release

Document No.:

Partial Document No.:

Version No.:



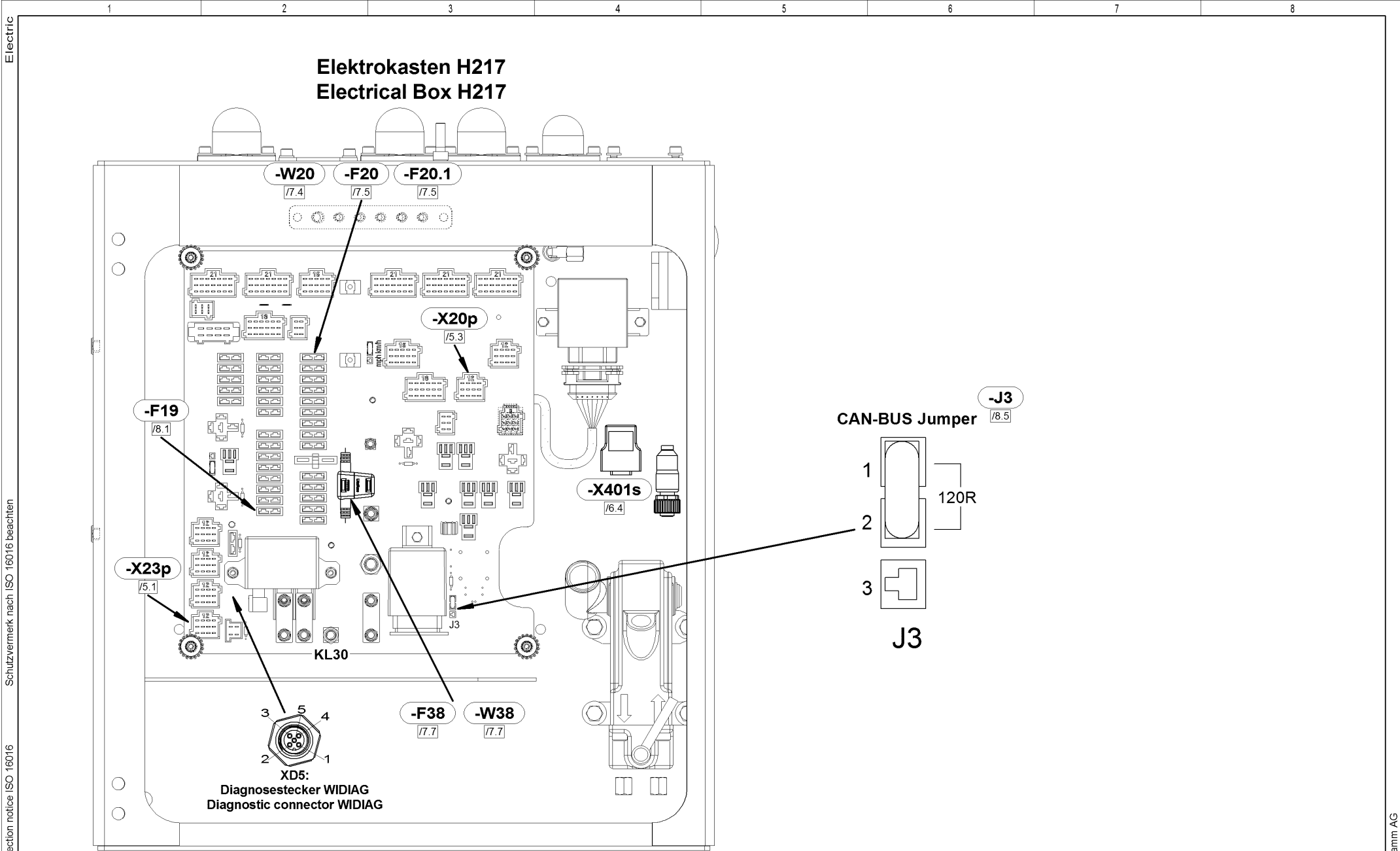
Material No.:		Revision No.:	
2485499		00	
Series code:	Valid for Serial No.:		
S3000	from	to	
Sheet plant:			
Sheet Location:			

Topologie

topology

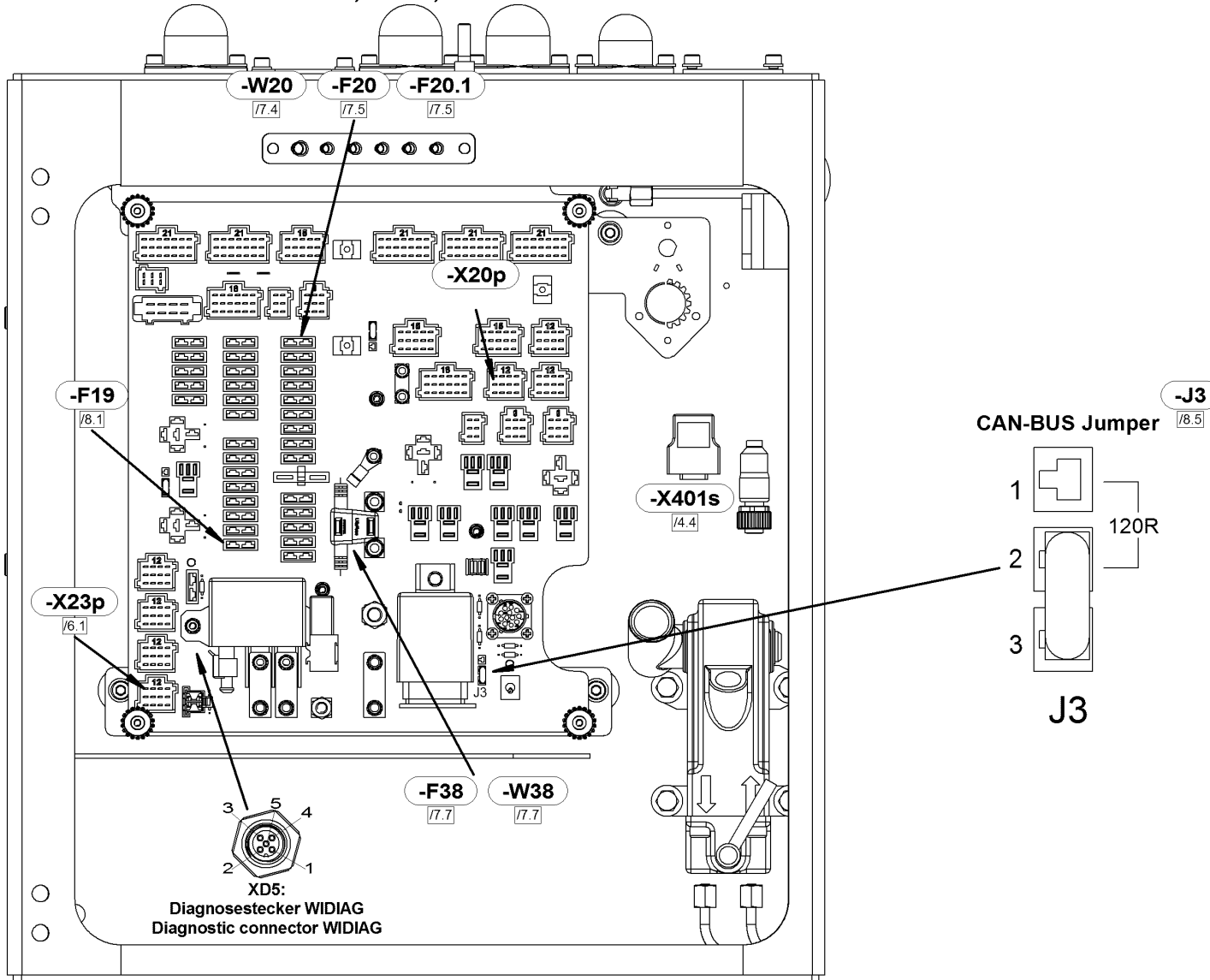
Sheet
3
of
21
Sheets

Rev.	Drawing by:		Approved by:		last change:		Status: AE = changable PF = prototype release SF = serial release	Document No.:		Material No.:		Revision No.:		Topologie topology	Sheet 4 of 21 Sheets								
	date 06.03.2017		date		date					2485499		00											
	name Lan		name		name					Series code: S3000		Valid for Serial No.:											
	E - CAE		Document type: ESP		Function group No.:					from to		Sheet plant: Sheet Location:											
1			2			3			4			5			6			7			8		



Elektrokasten H176, H179, H180 ohne Hammtronic

Electrical Box H176, H179, H180 without Hammtronic



Drawing by:		Approved by:		last change:	
date	06.03.2017	date		date	
name	Lan	name		name	
E - CAE		Document type:		Function group No.:	
		ESP			

Status:	Document No.:
AE = changeable	
PF = prototype release	Partial Document No.:
SF = serial release	
	Version No.:

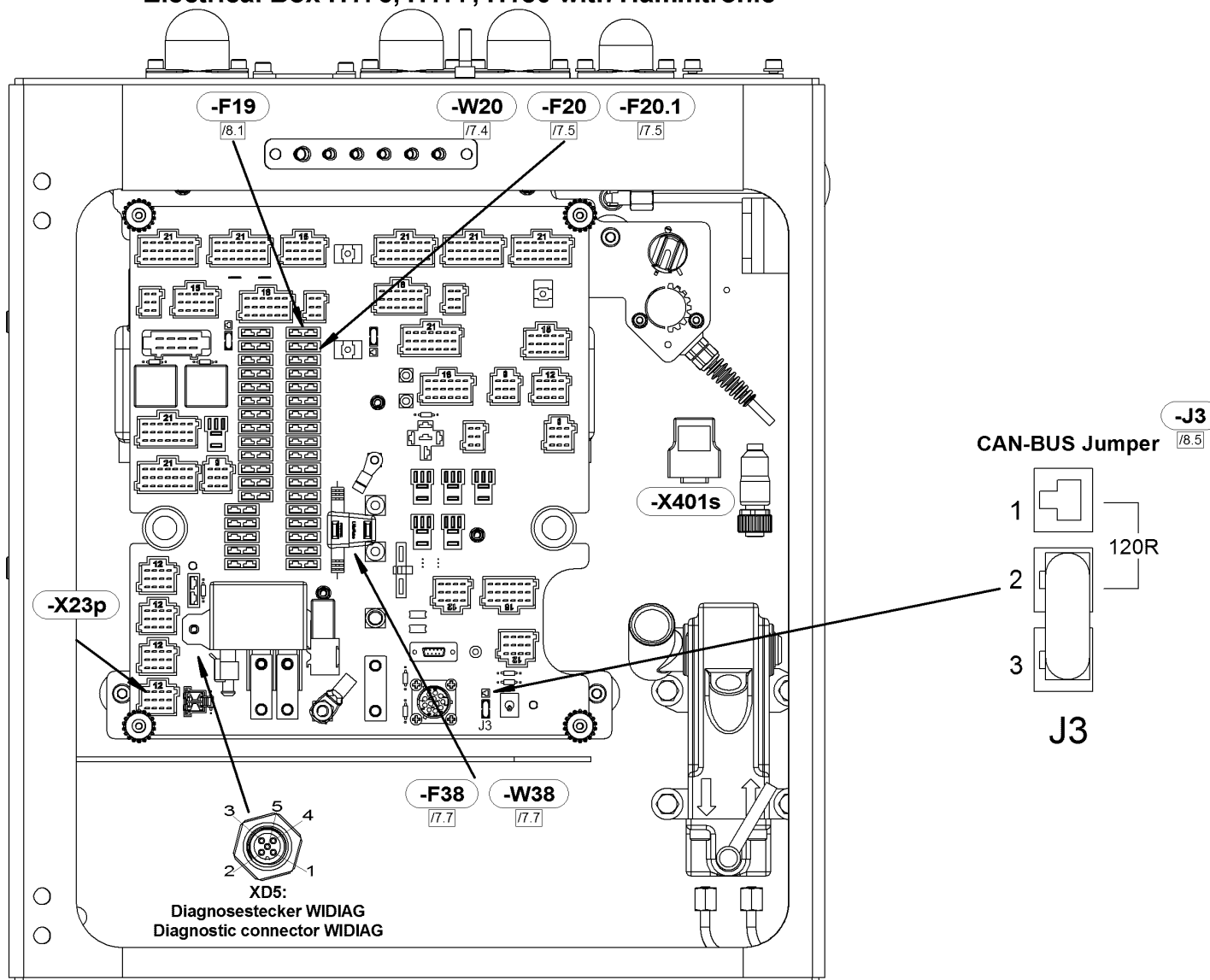


Material No.: 2485499		Revision No.: 00	
Series code: S3000	Valid for Serial No.: from to		
Sheet plant:			
Sheet Location:			

Topologie
topology

Sheet
5
of
21
Sheets

Elektrokasten H176, H177, H180 mit Hammtronic Electrical Box H176, H177, H180 with Hammtronic



Drawing by:		Approved by:		last change:	
date	06.03.2017	date		date	
name	Lan	name		name	
E - CAE		Document type:		Function group No.:	
		ESP			

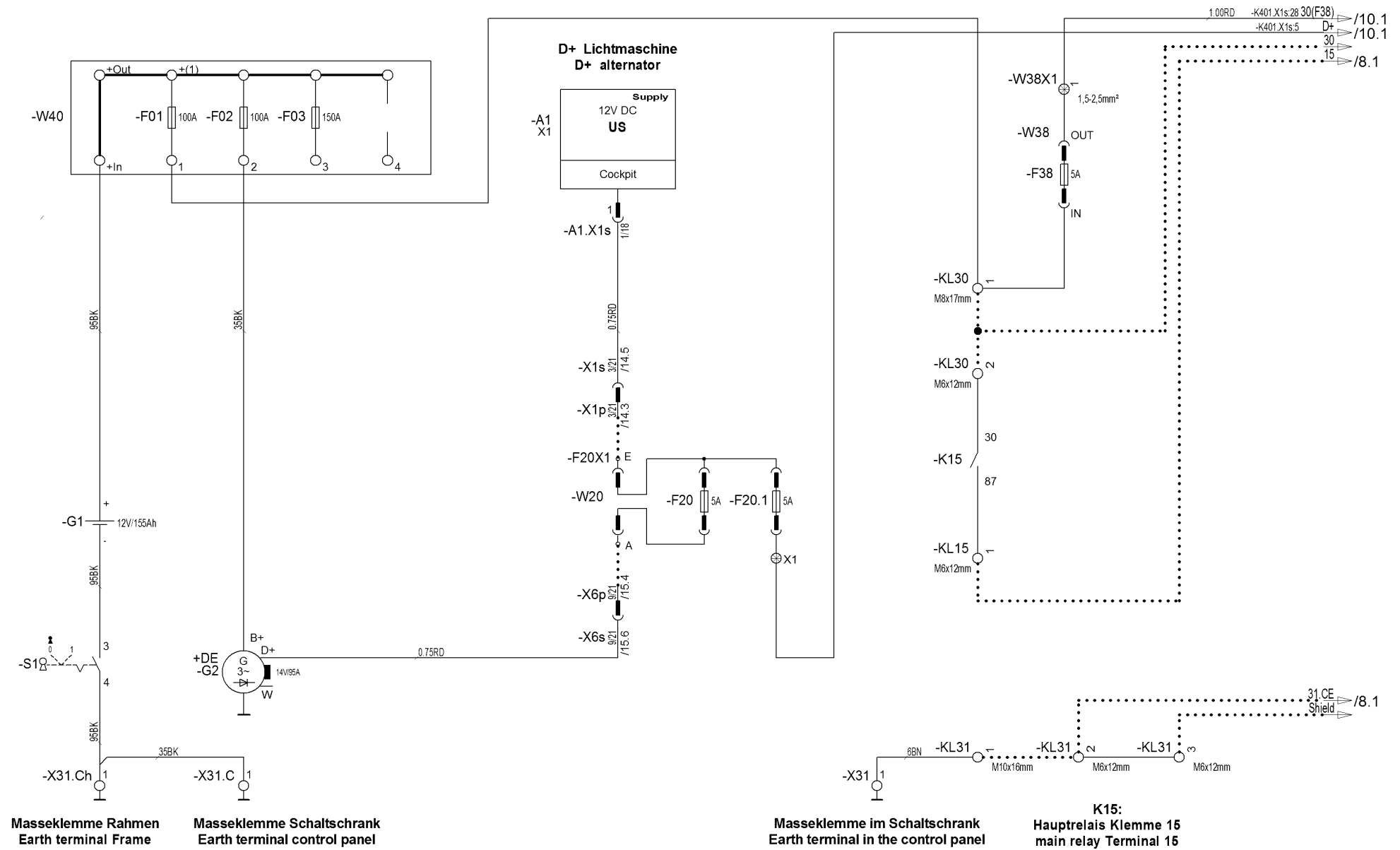
Status:	Document No.:
AE = changeable	
PF = prototype release	Partial Document No.:
SF = serial release	
	Version No.:



Material No.: 2485499		Revision No.: 00	
Series code: S3000	Valid for Serial No.: from to		
Sheet plant: Sheet Location:			

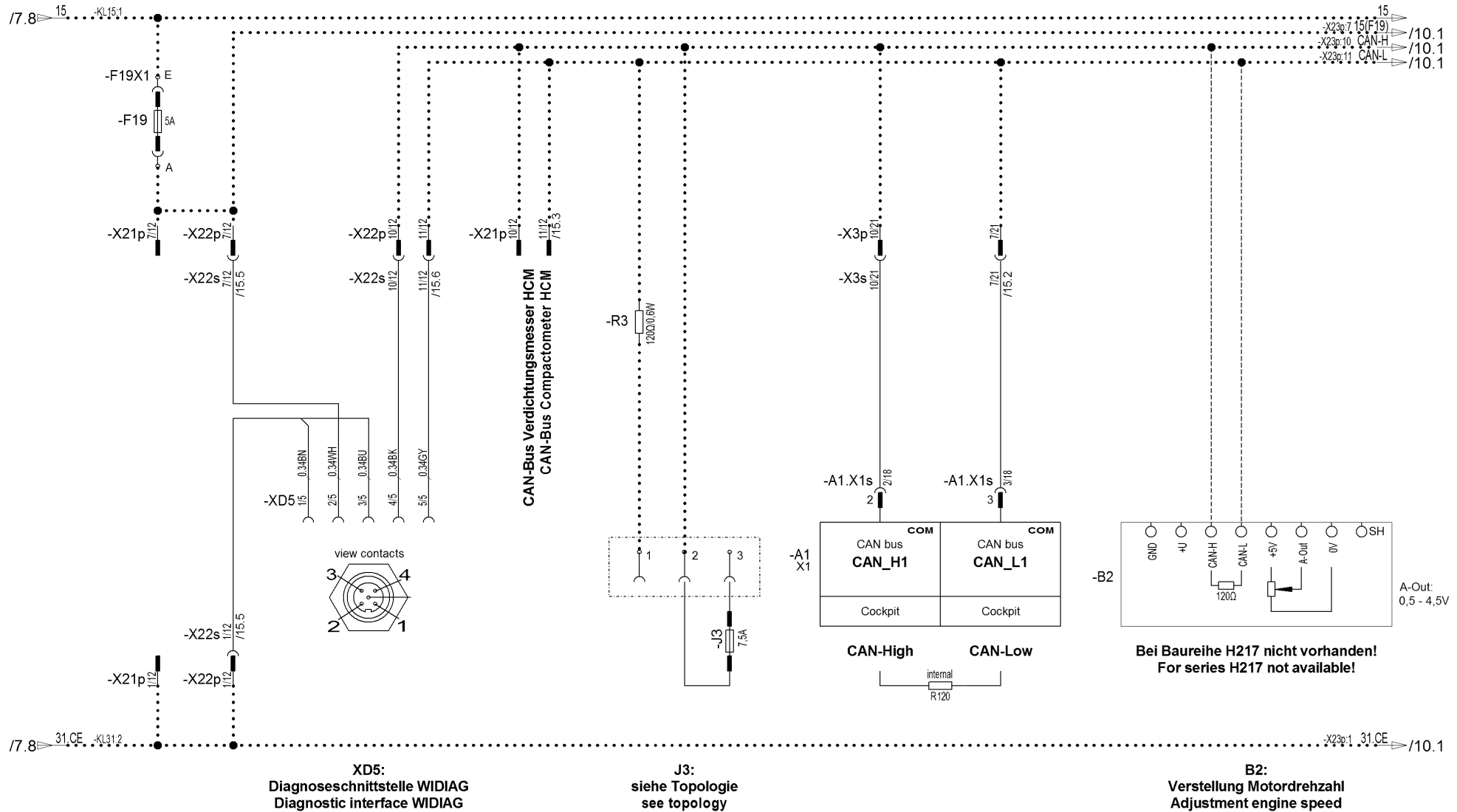
Topologie
topology

Sheet
6
of
21
Sheets



Drawing by: date 06.03.2017 name Lan	Approved by: date name	last change: date name	Status: AE = changable PF = prototype release SF = serial release	Document No.: Partial Document No.: Version No.:		Material No.: 2485499 Series code: S3000 Sheet plant: Sheet Location:	Revision No.: 00 Valid for Serial No.: from to	Bordnetz Supply system	Sheet 7 of 21 Sheets

E - CAE	Document type: ESP	Function group No.: 06



Drawing by: date 06.03.2017 name Lan	Approved by: date name	last change: date name
E - CAE	Document type: ESP	Function group No.: 06

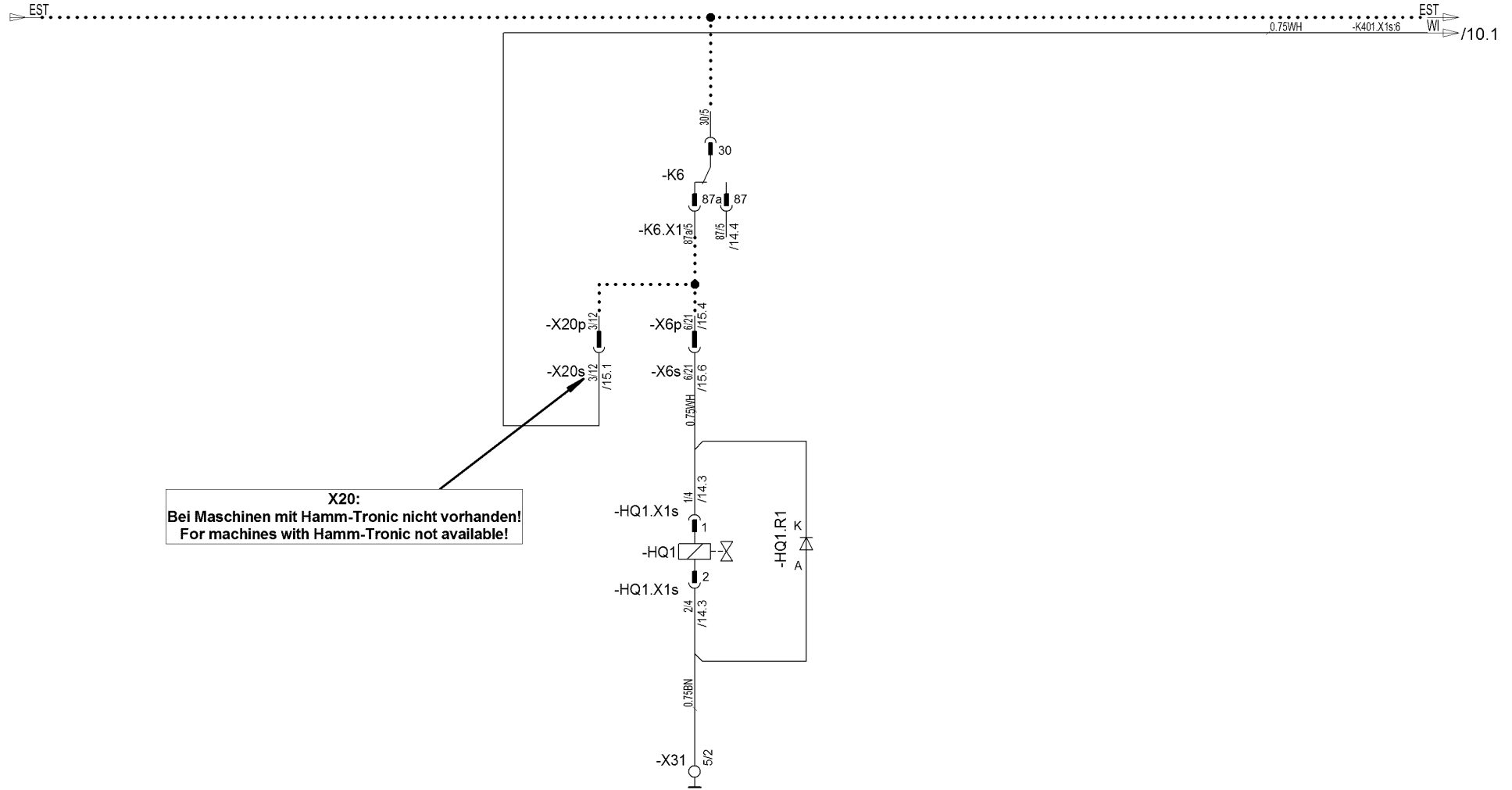
Status: AE = changable PF = prototype release SF = serial release	Document No.:
	Partial Document No.:
	Version No.:



Material No.: 2485499		Revision No.: 00
Series code: S3000	Valid for Serial No.: from to	
Sheet plant:		
Sheet Location:		

Spannungsversorgung CAN-Bus
Voltage supply CAN-Bus

Sheet of 21	Sheets
--------------------------	--------



Parkbremse
Parking brake

Drawing by:	Approved by:	last change:
date 06.03.2017	date	date
name Lan	name	name
E - CAE	Document type: ESP	Function group No.: 08

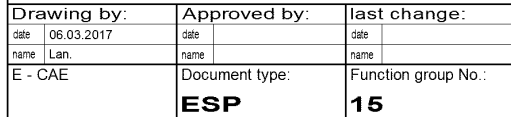
Status:	Document No.:
AE = changable	
PF = prototype release	Partial Document No.:
SF = serial release	
	Version No.:



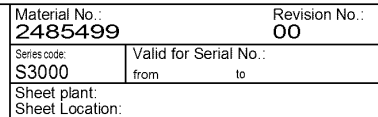
Material No.: 2485499	Revision No.: 00
Series code: S3000	Valid for Serial No.: from to
Sheet plant:	
Sheet Location:	

Parkbremse
parking brake

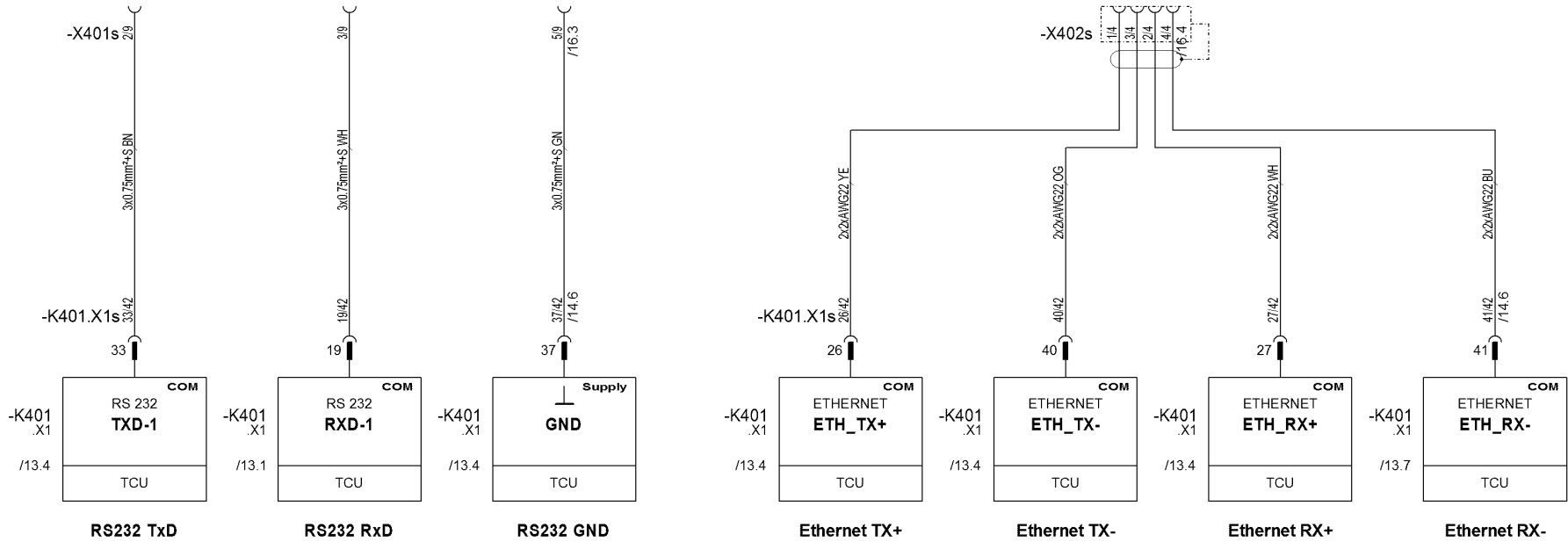
Sheet 9 of 21 Sheets



Document No.:
Partial Document No.:
Version No.:



Sheet
10
of
21 Sheets



X401s:
Sub-D Diagnoseschnittstelle
Sub-D Diagnostic interface

X402s:
Ethernet Diagnoseschnittstelle
Ethernet Diagnostic interface

Drawing by:		Approved by:		last change:	
date 06.03.2017		date		date	
name Lan		name		name	
E - CAE		Document type:		Function group No.:	
		ESP		15	

Status:

AE = changable

PF = prototype release

SF = serial release

Document No.:

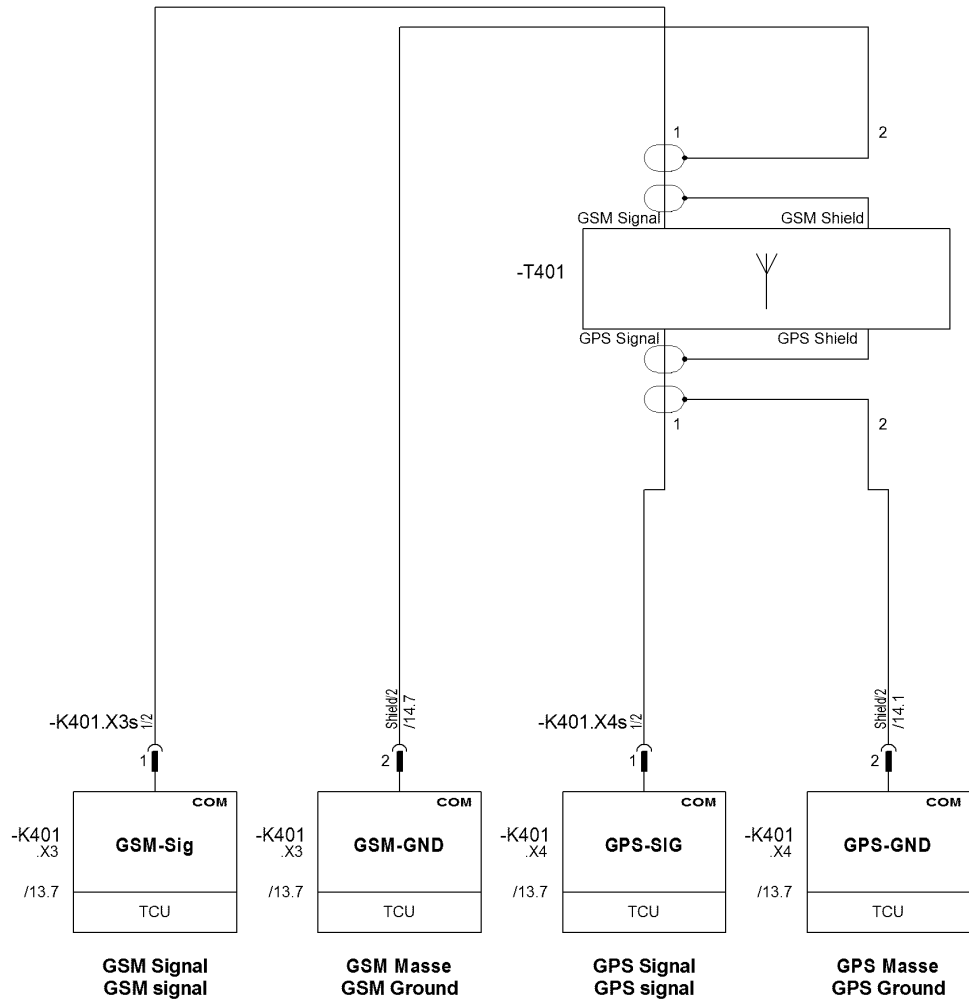
Partial Document No.:

Version No.:



Material No.: 2485499		Revision No.: 00	
Series code: S3000	Valid for Serial No.: from to		
Sheet plant: Sheet Location:			

TCU Diagnoseschnittstelle
TCU Diagnostic interface

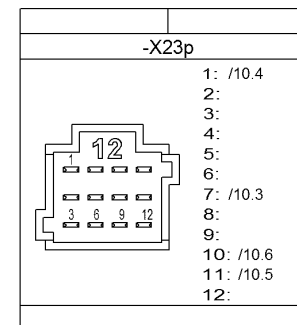
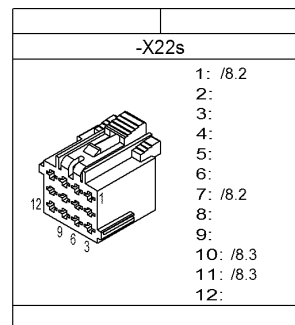
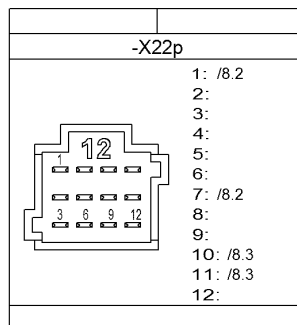
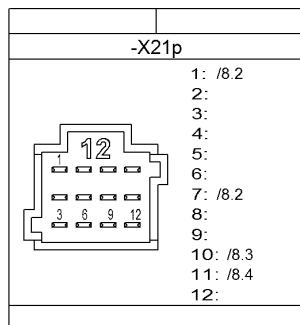
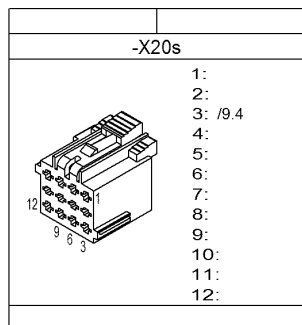
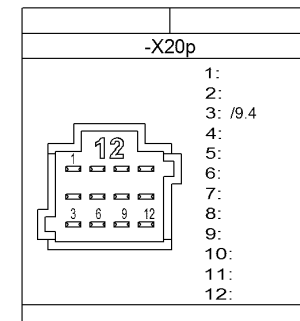
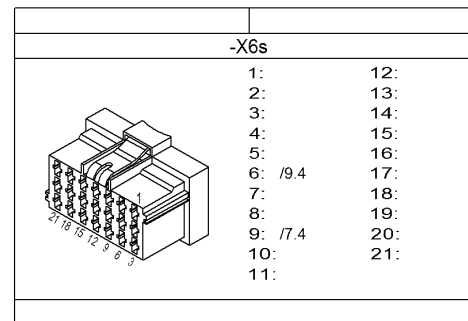
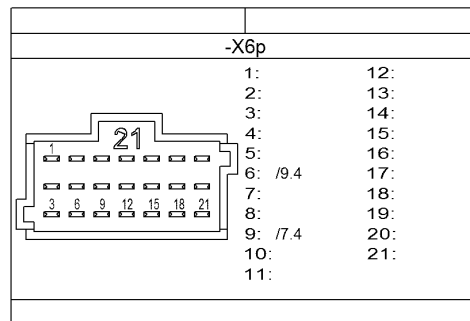
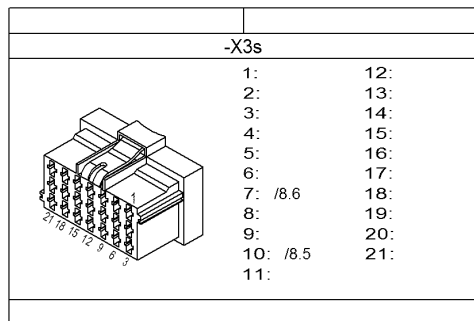


Drawing by:		Approved by:		last change:		Status: AE = changable PF = prototype release SF = serial release	Document No.:		Material No. : 2485499		Revision No. : 00		GPS/GSM Antenne GPS/GSM Antenna	Sheet 12 of 21 Sheets
date	06.03.2017	date		date					Series code: S3000	Valid for Serial No. : from to				
name	Lan.	name		name					Sheet plant: Sheet Location:					
E - CAE		Document type: ESP		Function group No. : 15										

Electric	1		2		3		4		5		6		7		8	
	TCU															
	-K401															
1/1																
Anschluss Pin	Signal signal	Querverweis cross-reference	Beschreibung description	Anschluss Pin	Signal signal	Querverweis cross-reference	Beschreibung description	Anschluss Pin	Signal signal	Querverweis cross-reference	Beschreibung description	Anschluss Pin	Signal signal	Querverweis cross-reference	Beschreibung description	
.X1 :1	CAN1_TERM COM			.X1 :21	RXD-2 COM			.X1 :41	ETH_RX- COM	/11.7	Ethernet RX-					
.X1 :2	CAN2_TERM COM			.X1 :22	DIN-7 (FE) IN			.X1 :42	GND Supply	/10.3	Masse Ground					
.X1 :3	DIN-1 IN	/10.2	Spannungsversorgung (15) Voltage supply (15)	.X1 :23	GND Supply			.X2 :1	TX+ COM							
.X1 :4	DIN-2 IN			.X1 :24	AIN-2 IN			.X2 :2	TX- COM							
.X1 :5	DIN-3 IN	/10.7	Motor läuft, D+ engine runs, D+	.X1 :25	FREQIN-1 IN			.X2 :3	RX+ COM							
.X1 :6	DIN-4 IN	/10.8	Arbeitsindikator Working indicator	.X1 :26	ETH_TX+ COM	/11.4	Ethernet TX+	.X2 :4	n.c. COM							
.X1 :7	DIN-5 (FE) IN			.X1 :27	ETH_RX+ COM	/11.6	Ethernet RX+	.X2 :5	n.c. COM							
.X1 :8	DIN-6 (FE) IN			.X1 :28	V-IN (30) Supply	/10.1	Spannungsversorgung (30) Voltage supply (30)	.X2 :6	RX- COM							
.X1 :9	LED-1 OUT			.X1 :29	CAN-1H COM	/10.6	CAN1-High	.X2 :7	n.c. COM							
.X1 :10	LED-2 OUT			.X1 :30	CAN-2H COM			.X2 :8	n.c. COM							
.X1 :11	LED-3 OUT			.X1 :31	GND Supply			.X3 :1	GSM-Sig COM	/12.1	GSM Signal GSM signal					
.X1 :12	LED-4 OUT			.X1 :32	RS485A (FE) COM			.X3 :2	GSM-GND COM	/12.2	GSM Masse GSM Ground					
.X1 :13	1-WIRE (FE) IN/OUT			.X1 :33	TXD-1 COM	/11.1	RS232 TxD	.X4 :1	GPS-SIG COM	/12.3	GPS Signal GPS signal					
.X1 :14	DOUT-1 OUT			.X1 :34	TXD-3 COM			.X4 :2	GPS-GND COM	/12.4	GPS Masse GPS Ground					
.X1 :15	CAN-1L COM	/10.4	CAN1-Low	.X1 :35	TXD-2 COM			:								
.X1 :16	CAN-2L COM			.X1 :36	DOUT-2 OUT			:								
.X1 :17	RS485-5V (FE) OUT			.X1 :37	GND Supply	/11.3	RS232 GND	:								
.X1 :18	RS485B (FE) COM			.X1 :38	AIN-1 IN			:								
.X1 :19	RXD-1 COM	/11.2	RS232 RxD	.X1 :39	AIN-3 (FE) IN			:								
.X1 :20	RXD-3 (FE) COM			.X1 :40	ETH_TX- COM	/11.5	Ethernet TX-	:								
Drawing by:		Approved by:		last change:		Status:		Document No.:		Material No.:		Revision No.:		Übersicht TCU General arrangement TCU		Sheet 13 of 21 Sheets
date 06.03.2017		date		date		AE = changeable		Partial Document No.:		2485499		00				
name Lan		name		name		PF = prototype release		Version No.:		Series code:		Valid for Serial No.:				
E - CAE		Document type:		Function group No.:		SF = serial release				S3000		from to				
ESP										Sheet plant:						
										Sheet Location:						
1		2		3		4		5		6		7		8		

-K401.X4s		-X1p	
BLAU	1: /12.4	1:	12:
Shield: /12.5		2:	13:
		3: /7.4	14:
		4:	15:
		5:	16:
		6:	17:
		7:	18:
		8:	19:
		9:	20:
		10:	21:
		11:	

Drawing by:		Approved by:		last change:		Status:		Document No.:		Material No.:				Revision No.:		Übersicht Steckerbelegung General arrangement Plug occupancy										Sheet 14 of 21 Sheets	
date 06.03.2017		date		date		AE = changeable		Partial Document No.:		2485499				00													
name Lan		name		name		PF = prototype release				Series code:		Valid for Serial No.:															
E - CAE		Document type:		Function group No.:		SF = serial release				Version No.:		S3000		from to													
		ESP										Sheet plant:															
												Sheet Location:															



Drawing by:	Approved by:	last change:
date 06.03.2017	date	date
name Lan	name	name
E - CAE	Document type:	Function group No.:
	ESP	

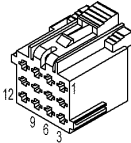
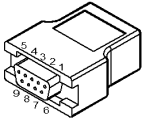
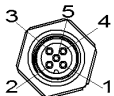
Status:	Document No.:
AE = changeable	
PF = prototype release	Partial Document No.:
SF = serial release	
	Version No.:



Material No.:	Revision No.:
2485499	00
Series code:	Valid for Serial No.:
S3000	from to
Sheet plant:	
Sheet Location:	

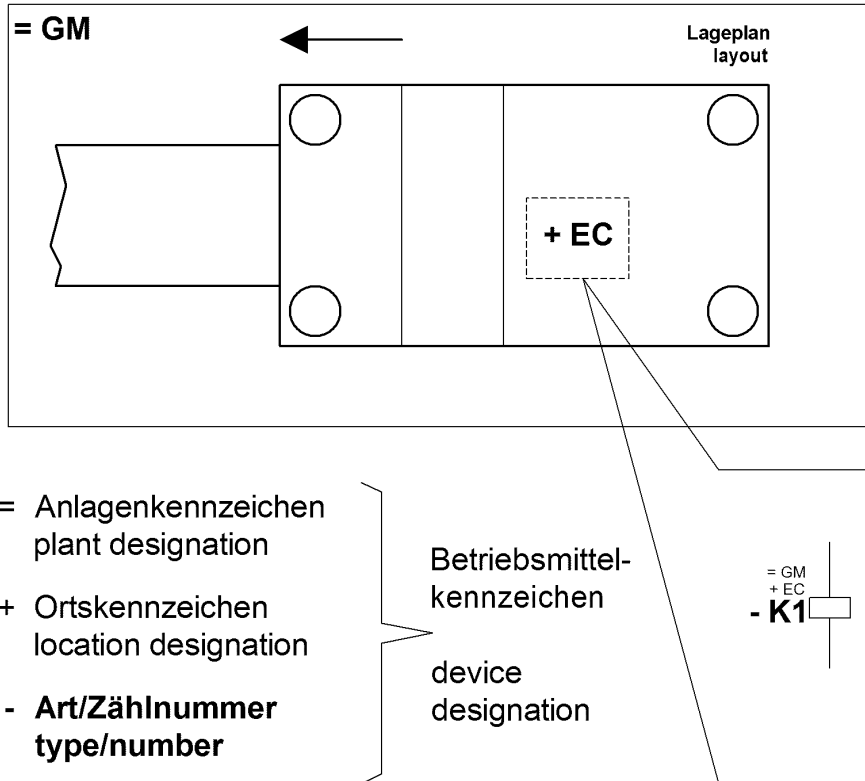
Übersicht Steckerbelegung
General arrangement Plug occupancy

Sheet
15
of
21
Sheets

1	2	3	4	5	6	7	8
-X23s  1: /10.4 2: 3: 4: 5: 6: 7: /10.3 8: 9: 10: /10.6 11: /10.5 12:		-X401s  1: 2: /11.1 3: /11.2 4: 5: /11.3 6: 7: 8: 9:		-X402s  view contacts 1: /11.6 2: /11.6 3: /11.6 4: /11.6		-XD5  View contacts 1: /8.2 2: /8.3 3: /8.3 4: /8.3 5: /8.3	

Drawing by:		Approved by:		last change:		Status: AE = changable PF = prototype release SF = serial release	Document No.:		Material No.:		Revision No.:		Übersicht Steckerbelegung General arrangement Plug occupancy	Sheet 16 of 21 Sheets
date	06.03.2017	date		date					2485499		00			
name	Lan.	name		name					Series code: S3000		Valid for Serial No.:			
E - CAE		Document type: ESP		Function group No.:		from			to					
							Partial Document No.:			Sheet plant:				
							Version No.:			Sheet Location:				

Aufbau Betriebsmittelkennzeichen / device designation configuration



- Minimales Betriebsmittelkennzeichen: Nur Art/Zählnummer
minimal device designation: type/number only
- Maximales Betriebsmittelkennzeichen: Anlagenkennzeichen, Ortskennzeichen und Art/Zählnummer
maximum device designation: plant designation, location designation and type/number
- **Anlagenkennzeichen, Ortskennzeichen und Art/Zählnummer sind nur IN KOMBINATION eindeutig!**
plant designation, location designation and type/number are only explicitly IN COMBINATION!

Bezeichnungserklärungen / designation explanations

Stecker zu Stecker Verbindung / connector to connector connection



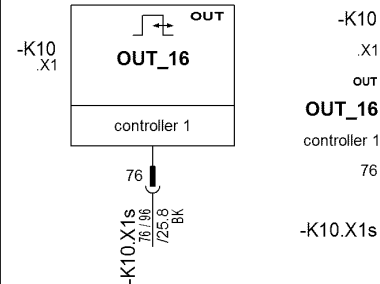
Deutsch

p = Stiftkontakt
s = Buchsenkontakt
Kontakt 1 von 3 Kontakten
Steckermaster auf Blatt 24,
Strompfad 7
Gehäusefarbe Stecker = Grün

English

p = pin contact
s = socket contact
contact 1 of 3 contacts
connector master on sheet 24,
current path 7
connector housing colour = green

Gerät zu Stecker Verbindung / device to connector connection



-K10
.X1
OUT
controller 1
76

-K10.X1s
Art/Zählnummer Gegenstecker
(Stecker erbt zusätzlich zur
eigenen Art/Zählnummer, die
Art/Zählnummer des Gerätes
an dem er angeschlossen ist.
Dadurch ist eine eindeutige
Zuordnung von Gerät und
zugehörigem Stecker möglich)

Art/Zählnummer Gerät
Anschlusstecker X1 am Gerät
Schnittstellentyp
Schnittstellenname
Gerätename
Kontakt des Anschlussteckers
type/number device
connector plug X1 on device
interface type
interface name
device name
contact of connector plug
type/number mating connector
(connector inherits additionally to
its own type/number, the
type/number of the device it is
connected to.
Thus permits a clear allocation of
device and appendant mating
connector)

Drawing by:	Approved by:	last change:
date 06.03.2017	date	date
name Lan	name	name
E - CAE	Document type:	Function group No.:
	ESP	

Status:	Document No.:
AE = changable	
PF = prototype release	Partial Document No.:
SF = serial release	
	Version No.:



Material No.:	Revision No.:
2485499	00
Series code:	Valid for Serial No.:
S3000	from to
Sheet plant:	
Sheet Location:	

Erklärung Aufbau Betriebsmittelkennzeichen
Explanation device designation layout

Sheet
17
of
21
Sheets

Gerätekennbuchstaben, elektrisch (beispielhaft) /
device code letter, electric (exemplified)

<u>Gerätekennbuchstabe / device code letter</u>	<u>Deutsch</u>	<u>English</u>	<u>Gerätekennbuchstabe / device code letter</u>	<u>Deutsch</u>	<u>English</u>
- A	Bauteile mit zwei oder mehr Aufgaben Dieselmotor Radio	devices with two or more tasks diesel engine radio	- P	Hupe Leuchtdiode Signallampe Fahrtenschreiber anzeigendes Messgerät	horn light emitting diode signal lamp tachograph displaying measuring instrument
- B	Sensor Näherungsschalter Messwandler	sensor proximity switch measuring transformer	- R	Diode Widerstand	diode resistor
- C	Kondensator	capacitor	- S	Schalter	switch
- E	Heizung Lampe Leuchte	heating lamp light	- T	Gleichrichter Verstärker Transformator Frequenzwandler	rectifier amplifier transformer frequency converter
- F	Sicherung Leitungsschutzschalter Motorschutzschalter	fuse circuit breaker motor protection switch	- W	Kabel Elektrische Leitung Sammelschiene	cable wire bus bar
- G	Batterie Generator	battery generator	- X	Klemme Klemmenleiste Steckdose	terminal terminal strip outlet
- K	Relais Schütz Regler Prozessrechner SPS-Steuerung	relay contactor controller process computer programmable logic controller (PLC)			
- M	Elektromotor Betätigungsspule	electric motor coil			

Drawing by:	Approved by:	last change:
date 06.03.2017	date	date
name Lan	name	name
E - CAE	Document type: ESP	Function group No.:

Status:	Document No.:
AE = changable	
PF = prototype release	Partial Document No.:
SF = serial release	Version No.:



Material No.:	Revision No.:
2485499	00
Series code:	Valid for Serial No.:
S3000	from to
Sheet plant:	
Sheet Location:	

Erklärung Gerätekennbuchstaben, elektrisch
Explanation device code letter, electric

Sheet
18
of
21
Sheets

Gerätekennbuchstaben, hydraulisch (beispielhaft) / device code letter, hydraulic (exemplified)		
<u>Gerätekennbuchstabe / device code letter</u>	<u>Deutsch</u>	<u>English</u>
- HA	Ventilblock	valve-block
- HG	Hydraulikpumpe	hydraulic pump
- HK	Mengenteiler Prioritätsventil Stromregelventil hydraulisch	flow divider priority valve hydraulic flow control valve
- HM	Hydraulikmotor Hydraulikzylinder	hydraulic motor hydraulic cylinder
- HQ	Bremsventil Kugelhahn Lenkeinheit Wegeventil	braking valve ball valve steering unit direction control valve
- HV	Hydraulikfilter	hydraulic filter
- Ma	Ventil Magnetspule a	valve coil a
- Mb	Ventil Magnetspule b	valve coil b

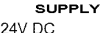
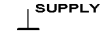
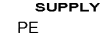
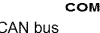
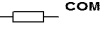
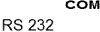
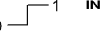
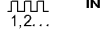
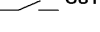
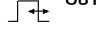
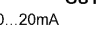
Drawing by:	Approved by:	last change:
date 06.03.2017	date	date
name Lan	name	name
E - CAE	Document type: ESP	Function group No.:

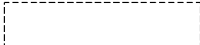
Status:	Document No.:
AE = changable	Partial Document No.:
PF = prototype release	Version No.:
SF = serial release	

	Material No.:	Revision No.:
	2485499	00
	Series code:	Valid for Serial No.:
	S3000	from to
Sheet plant:		
Sheet Location:		

Erklärung Gerätekennbuchstaben, hydraulisch Explanation device code letter, hydraulic
--

Sheet
19
of
21
Sheets

Symbolerklärungen * / symbol explanations *			
Symbol / symbol	Bedeutung / standing	Symbol / symbol	Bedeutung / standing
 SUPPLY 24V DC	Spannungsversorgung power supply	 OUT	Rechteckgenerator square-wave generator
 SUPPLY	Masse ground	 ECU	Anschluss Motorsteuergerät connection to engine control unit
 SUPPLY PE	Schutzleiter protection earth	*Standardsymbole sind von DIN EN 60671 abgeleitet Standard symbols are derived from DIN EN 60617	
 COM CAN bus	CAN Busleitung CAN bus line		
 COM	Abschlusswiderstand terminating resistor		
 COM RS 232	RS 232 Schnittstellenleitung RS 232 interface circuit		
 0 1 IN	Digitaleingang (allgemein) digital input (in general)		
 IN	Pulseingang pulse input		
 1,2... IN	Zählereingang counter input		
 IN	Spannungseingang voltage input		
 mA IN	Stromeingang current input		
 Ω IN	Widerstandseingang resistance input		
 Hz IN	Frequenzeingang frequency input		
 OUT	Digitalausgang digital output		
 OUT	Pulsweitenmodulationsausgang pulse width modulation output		
 0...20mA OUT	analoge Stromquelle analogue current supply		

Linienformate / line formats			Farbbezeichnungen / colour designations		
<u>Linienart / line type</u>	<u>Linienstärke / Grafik / line thickness / graphic</u>	<u>Bedeutung / standing</u>	<u>Abkürzungen Farbbezeichnungen / colour abbreviations</u>	<u>Deutsch</u>	<u>English</u>
Volllinie / solid line	 0,25mm	Standard / standard	BU	blau	blue
			BN	braun	brown
Strichpunktlinie / dash-dotted line	 0,25mm	PE (Schutzerde) / PE (protecting earth)	YE	gelb	yellow
			GN	grün	green
Strichlinie / dashed line	 0,25mm	Bauteilumrandung, bzw. Zusammengehörigkeit / component border, togetherness	GY	grau	grey
			OG	orange	orange
Strichlinie / dashed line	 0,25mm	Optionen / options	PK	rosa	pink
			RD	rot	red
Punktlinie / dotted line	 0,75mm	Leiterbahnverbindungen einer Platine (nicht als Drahtleitung ausgeführte Verbindung) / conductor line of a edge board	BK	schwarz	black
			TQ	türkis	turquoise
			VT	violett	violet
			WH	weiss	white