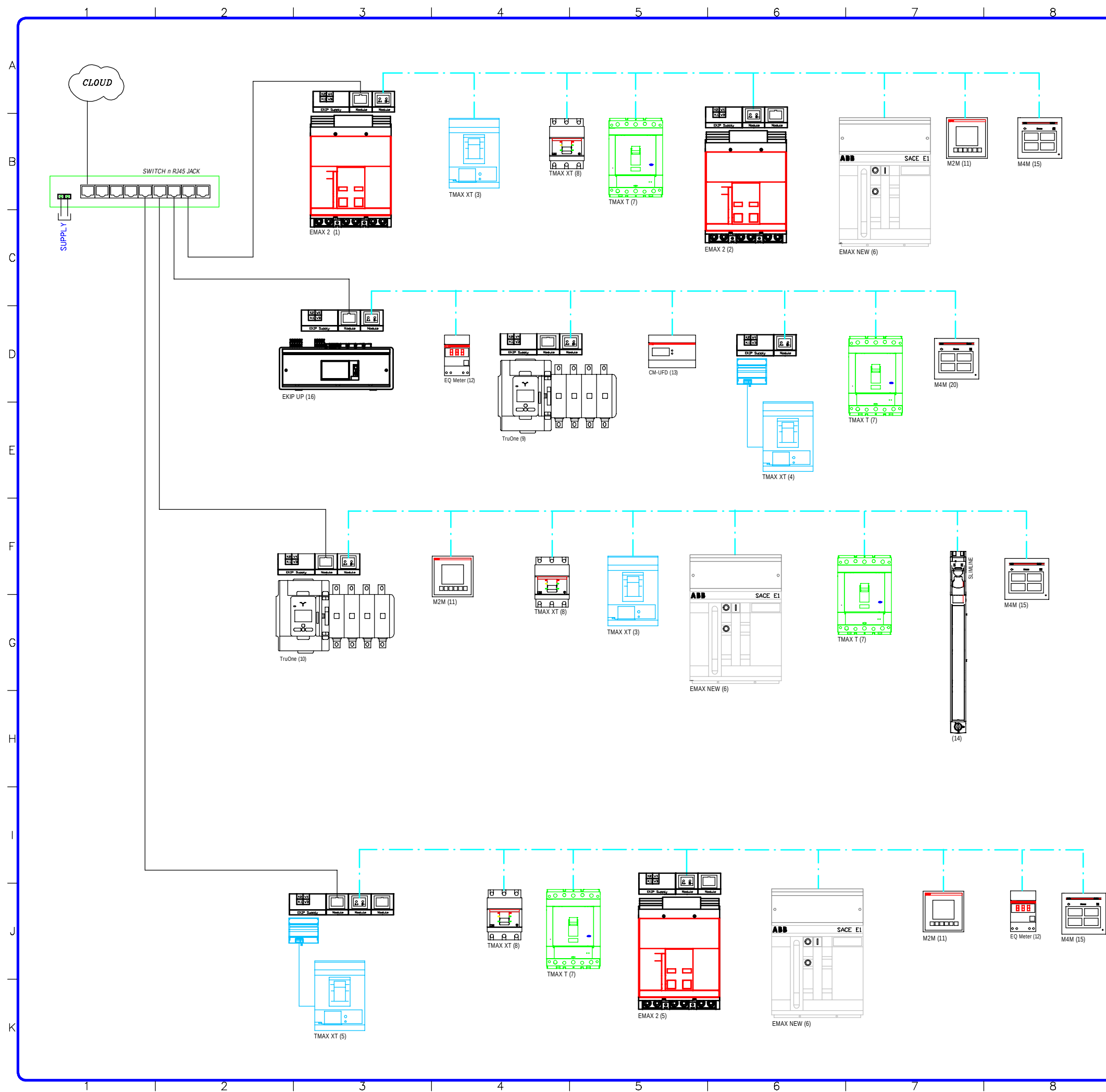




NOTES

Network and installation requirements

1. Provide Ekip Com HUB with internet connectivity, either via LAN or via dedicated router with SIM card.
2. Only during commissioning with Modbus TCP devices, it is necessary to connect all devices and Ekip Com HUB on the same network (see dotted ethernet line).
3. If internet connection is via site network, the following ports shall be reachable:
 - 443/TCP: needed for the upload of the data via HTTPS
 - 53/UDP: needed for public DNS
 - 123/UDP: if connecting to public NTP server or ABB SNTP server
4. Disable the firewall, if one is present on your laptop, before starting commissioning.
5. For commissioning connect laptop to same ethernet network used for field devices (Ekip Com HUB). Laptop shall be able to connect to internet via LAN.

LEGENDA

Modbus RTU RS485

Ethernet

(1) Emax 2 equipped with Ekip Touch, Ekip Hi-Touch, Ekip G-Touch or Ekip G-Hi Touch and provided with Ekip Supply + Ekip Com HUB + Ekip Com Modbus RTU.

(2) Emax 2 equipped with Ekip Touch, Ekip Hi-Touch, Ekip G-Touch or Ekip G-Hi Touch and provided with Ekip Supply + Ekip Com Modbus RTU.

(3) Tmax XT equipped with Ekip Touch, Ekip Touch Measuring, Ekip G Touch, Ekip M Touch, Ekip Hi-Touch or Ekip G Hi-Touch + auxiliary power supply + Ekip Com Modbus RTU mounted in dedicated slot in Tmax XT case.

(4) Tmax XT equipped with Ekip Touch, Ekip Touch Measuring, Ekip G Touch, Ekip M Touch, Ekip Hi-Touch or Ekip G Hi-Touch + Ekip Supply mounted on Ekip Cartridge + Ekip Com Modbus RTU mounted on Ekip Cartridge.

(5) Tmax XT equipped with Ekip Touch, Ekip Touch Measuring, Ekip G Touch, Ekip M Touch, Ekip Hi-Touch or Ekip G Hi-Touch + Ekip Supply mounted on Ekip Cartridge + Ekip Com HUB mounted on Ekip Cartridge + Ekip Com Modbus RTU mounted on Ekip Cartridge.

(6) Emax New in one of the following configurations:

- PR122 + PR120/DM
- PR122 + PR120/DM + PR120V
- PR123 + PR120/DM

(7) Tmax T in one of the following configurations:

- T4 - T5 - T6 with PR222/PD
- T4 - T5 - T6 with PR223DS
- T4 - T5 - T6 with PR223DS + VM210
- T4 - T5 - T6 with PR223EF
- T4 - T5 - T6 with PR223EF + VM210
- T5 with Ekip E
- T7 with PR332 + PR330/DM
- T7 with PR332 + PR330/DM + PR330V

(8) Tmax XT in one of the following configurations:

- XT2 with Ekip LSI or Ekip LSIG + Ekip COM
- XT4 with Ekip LSI, Ekip LSIG or Ekip E+ Ekip COM

(9) TruOne equipped with OXE1 + Ekip Com Modbus RTU.

(10) TruOne equipped with OXE1 + Ekip Com Hub + Ekip Com Modbus RTU.

(11) M2M Network analyzer version with communication Modbus RTU.

(12) EQ Meter, versions A41, A43, A44, B23, B24, B21.

(13) CM-UPD.

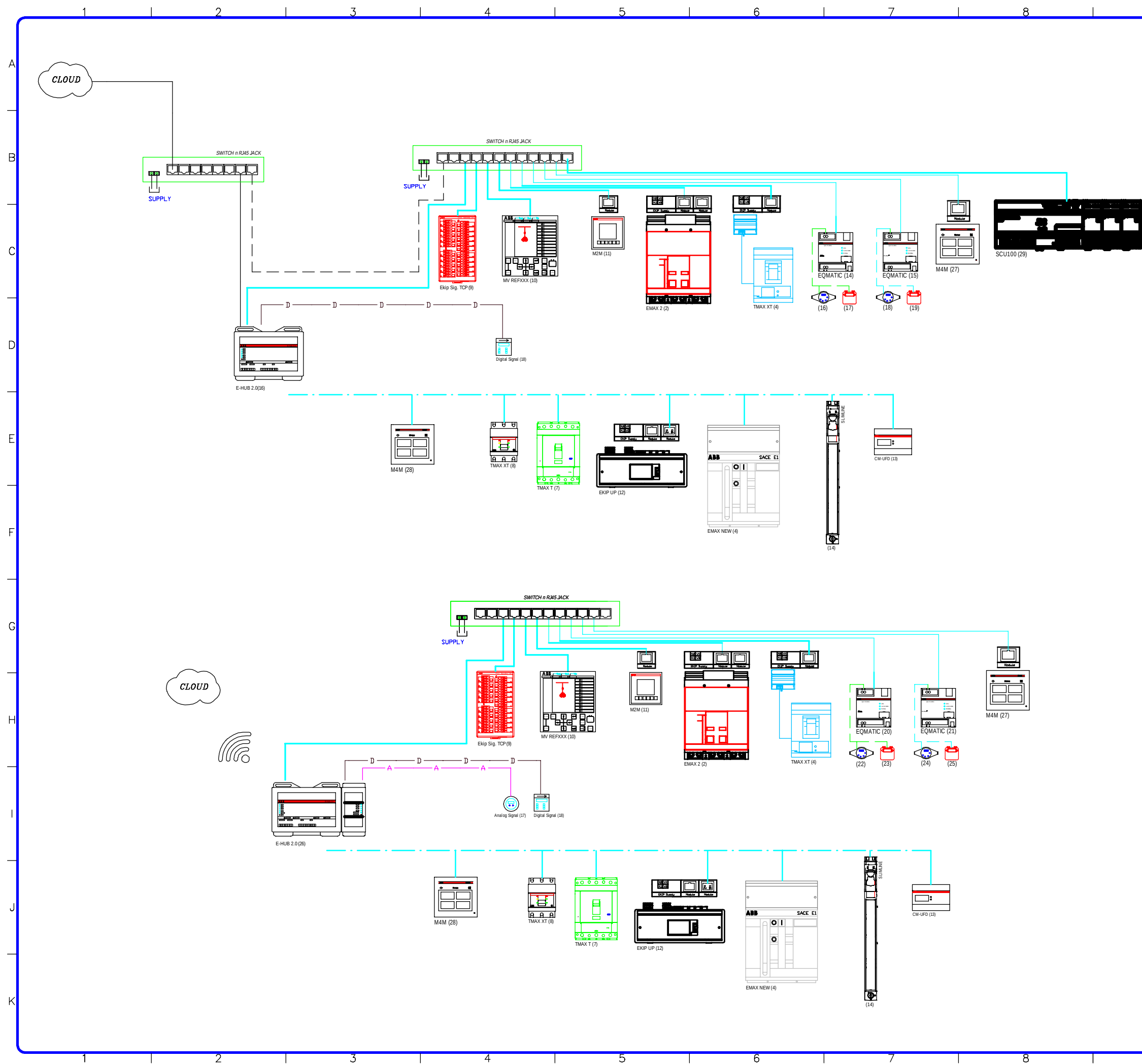
(14) SlimLine ITS2.1

(15) M4M 20 or M4M 30 Network Analyzer with Modbus RTU communication

(16) Ekip UP equipped with Ekip Supply + Ekip Com HUB + Ekip Com Modbus RTU

Added devices		PS	MB	NS	11.06.20
Change / Review notes					
DESCRIZIONE - Description		COMPL. Drawn up	VERIFIC. Checked	APPROV. Approved	DATA Date
ABB		QUESTO DOCUMENTO NON PUO' ESSERE UTILIZZATO IN ALCUN MODO DA TERZI SENZA PREVENTIVA AUTORIZZAZIONE. This document cannot be used by others for any purpose, without prior written consent.			
TITOLO - Title		REFERENCE ARCHITECTURE ABB ABILITY EDCS WITH COMMUNICATION PROTOCOL MODBUS RTU.			
IMPIANTO - Plant		DATA - Date	SCALA GRAFICA - Graphic scale	RIF. CLIENTE - Client ref.	
		11/06/2020			

CODICE IDENTIFICAZIONE		Drawing N°	
9AKK107045A6881		Foglio Sheet	
002		E.M. issue	



NOTE

Network and installation requirements

1. Provide Ekip Com HUB with internet connectivity, either via LAN or via dedicated router with SIM card.
2. Only during commissioning with Modbus TCP devices, it is necessary to connect all devices and Ekip Com HUB on the same network (see dotted ethernet line).
3. If internet connection is via site network, the following ports shall be reachable:
 - 443/TCP: needed for the upload of the data via HTTPS
 - 53/UDP: needed for public DNS
 - 123/UDP: if connecting to public NTP server or ABB SNTP server
4. Disable the firewall, if one is present on your laptop, before starting commissioning.
5. For commissioning connect laptop to same ethernet network used for field devices (Ekip Com HUB). Laptop shall be able to connect to internet via LAN.

LEGENDA

- Modbus RTU RS485
- Modbus TCP
- Ethernet
- M-Bus

- (1) Emax 2 equipped with Ekip Touch, Ekip Hi-Touch, Ekip G-Touch or Ekip G-Hi Touch and provided with Ekip Supply + Ekip Com HUB + Ekip Com Modbus RTU + Ekip Modbus TCP.
- (2) Emax 2 equipped with Ekip Touch, Ekip Hi-Touch, Ekip G-Touch or Ekip G-Hi Touch and provided with Ekip Supply + Ekip Com Modbus TCP.
- (3) Emax 2 equipped with Ekip Touch, Ekip Hi-Touch, Ekip G-Touch or Ekip G-Hi-Touch and provided with Ekip Supply + Ekip Com Modbus RTU.
- (4) Emax New in one of the following configurations:
 - PR122 + PR120/DW
 - PR122 + PR120/DW + PR120V
 - PR123 + PR120/DW
- (5) Tmax XT equipped with Ekip Touch, Ekip Touch Measuring, Ekip G Touch, Ekip M Touch, Ekip Hi-Touch o Ekip G Hi-Touch + auxiliary power supply + Ekip Com Modbus RTU mounted in dedicated slot in Tmax XT case.
- (6) Tmax XT equipped with Ekip Touch, Ekip Touch Measuring, Ekip G Touch, Ekip M Touch, Ekip Hi-Touch o Ekip G Hi-Touch + Ekip Supply mounted on Ekip Cartridge + Ekip Com Modbus TCP mounted on Ekip Cartridge.
- (7) Tmax T in one of the following configurations:
 - T4 - T5 - T6 con PR222/PD
 - T4 - T5 - T6 con PR223/SOS
 - T4 - T5 - T6 con PR223/SOS + VM210
 - T4 - T5 - T6 con PR223/EF
 - T4 - T5 - T6 con PR223/EF + VM210
 - T5 con Ekip E
 - T7 con PR332 + PR330/DW
 - T7 con PR332 + PR330/DW + PR330V
- (8) Tmax XT in one of the following configurations:
 - XT2 con Ekip LSI or Ekip LSI G + Ekip COM
 - XT4 con Ekip LSI, Ekip LSI G or Ekip E+ Ekip COM
- (9) Ekip Signalling TCP with 10 digital input.
- (10) MV relays REF542plus
- (11) M2M Network analyzer version with communication Modbus TCP.
- (12) Ekip Up equipped with Ekip Supply + Ekip Com Modbus RTU.
- (13) CM-UPD Interface monitoring.
- (14) SimLine IT2.1
- (15) TruOne equipped with OXE1 + Ekip Com Modbus TCP
- (16) E-Hub
- (17) Analog Signal
- (18) Digital Signal
- (19) EQ Meter, versions A41, A43, A44, B23, B24, B21.
- (20) Eqmatic Energy analyzer as modbus M-Bus master.
- (21) Eqmatic Energy analyzer as Modbus RTU master.
- (22) Third party Water Meter with M-Bus communication.
- (23) Third party Gas Meter with M-Bus communication.
- (24) Third party Water Meter with Modbus RTU communication.
- (25) Third party Gas Meter with Modbus RTU communication.
- (26) E-Hub 2.0 with additional Digital + Analog I/O module and integrated SIM card for direct connection to the ABB Ability EDCS
- (27) M4M 20 or M4M 30 Network Analyzer with Modbus TCP communication.
- (28) M4M 20 or M4M 30 Network Analyzer with Modbus RTU communication.
- (29) SCU100

1	Added devices		PS	MB	NS	11.06.2	
	Change / Review notes						
EM. Issue	DESCRIZIONE - Description	COMPL. Draw up	VERIFIC. Check	APPROV. Appr.	DATA Date		
		QUESTO DOCUMENTO NON PUO' ESSERE UTILIZZATO IN ALCUN MODO DA TERZI SENZA PREVENTIVA AUTORIZZAZIONE. This document cannot be used by others for any purpose, without prior written consent.				CODICE IDENTIFICAZIONE Identification code	
						Drawing N°	
TITOLO - Title REFERENCE ARCHITECTURE ABB ABILITY EDCS WITH THE GATEWAY E-HUB 2.0		9AKK107045A6881				FOLIO Sheet	
						004	
						EM. Issue	X
IMPANTO - Plant	DATA - Date	SCALA GRAFICA - Graphic scale	RIF. CLIENTE - Client ref.				
-	11/06/2020	-	-				

ABB ABILITY EDCS REFERENCE ARCHITECTURE COLLECTION

NOTES

Reference architectures provide examples of ABB Ability EDCS systems, showing which devices is possible to connect to cloud platform. In real instalaltion the mix of products can differ from examples.

COM HUB / E-HUB(1)

In order to ensure optimal data logging perfomance.

-Verify the correct balance between Master and Slaves Devices.

-Modbus TCP/IP Connectivity: the devices connected to each Ekip Com HUB / E-Hub with Modbus TCP communication protocol cannot exceeds 15 points.

-Modbus RTU (RS-485) Connectivity: the slave devices connected to each Ekip Com HUB / E-HUB with Modbus RTU communication protocol cannot exceed 15 points

(1) E-HUB is no longer available for sales, it has been replaces by E-HUB 2.0

TABLE Modbus TCP					
Device	Emax 2 / Ekip UP	M2M / M4M	TruOne	REF542plus	Tmax XT (new)
Weight	1	1	1	0,5	1

TABLE Modbus RTU										
Device	Emax 2 / Ekip UP	M2M / M4M	New Emax	TruOne	Tmax XT	Tmax XT (2019)	Tmax T	EQ Meters	ITS2	CM-UFD
Weight	3	3	3	3	1	3	1	2	1,5	3

Max 1 CMS700 + 96 sensors for both E-HUB and Com HUB

Max 1 SCU100 + 96 sensors for both E-HUB and Ekip Com HUB

Max 1 EQmatic* + 10 meters

*EQmatic compatible with ABB Ability EDCS as master of system with Modbus RTU and M-Bus sytems, but only the 16 version (QA/S 3.16.1, M-bus ; QA/S 4.16.1, Modbus RTU)

E-HUB 2.0

In order to ensure optimal data logging performance.

-Verify the correct balance between Master and Slave devices.

-Modbus TCP/IP Connectivity: the devices connected to each E-HUB 2.0 with Modbus TCP/IP communication protocolcannot exceed 30 pointns.

-Modbus RTU (RS-485) Connectivity: the devices connected to each E-HUB 2.0 with Modbus RTU communication protocol cannot exceed 30 pointns.

TABLE E-HUB 2.0								
Device	Emax 2 / Ekip UP	M2M / M4M	TruOne	REF542plus	Tmax XT (2019)	Ekip Signalling Modbus TCP	EQ Meters	CM-UFD
Weight	1	1	1	0,5	1	0,5	1	1,5

CMS700 + 32 sensors: 3 points and / or CMS700 + 96 sensors: 5 points

SCU100 + 32 sensors: 3 points and / or SCU100 + 96 sensors: 5 points

Max 2 EQmatic* + 15 meters

*EQmatic compatible with ABB Ability EDCS as master of Modbus RTU and M-Bus systems, but only the 16 version (QA/S 3.16.1, M-bus ; QA/S 4.16.1, Modbus RTU)

1	Added devices	PS	MB	NS	11.06.20
	Change / Review notes				
EM.	DESCRIZIONE - Description	COMPL.	VERIFIC.	APPROV.	DATA
Issue	Drawn up	Check	App'd	Date	
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		Drawing N° 9AKK107045A6881			
TITOLO - Title		Foglio		005	EM.
REFERENCE ARCHITECTURE ABB ABILITY EDCS - POINTS		Sheet			Issue
IMPANTO - Plant		DATA - Date		SCALA GRAFICA - Graphic scale	
-		11/06/2020		-	
				RIF. CLIENTE - Client ref.	
				-	