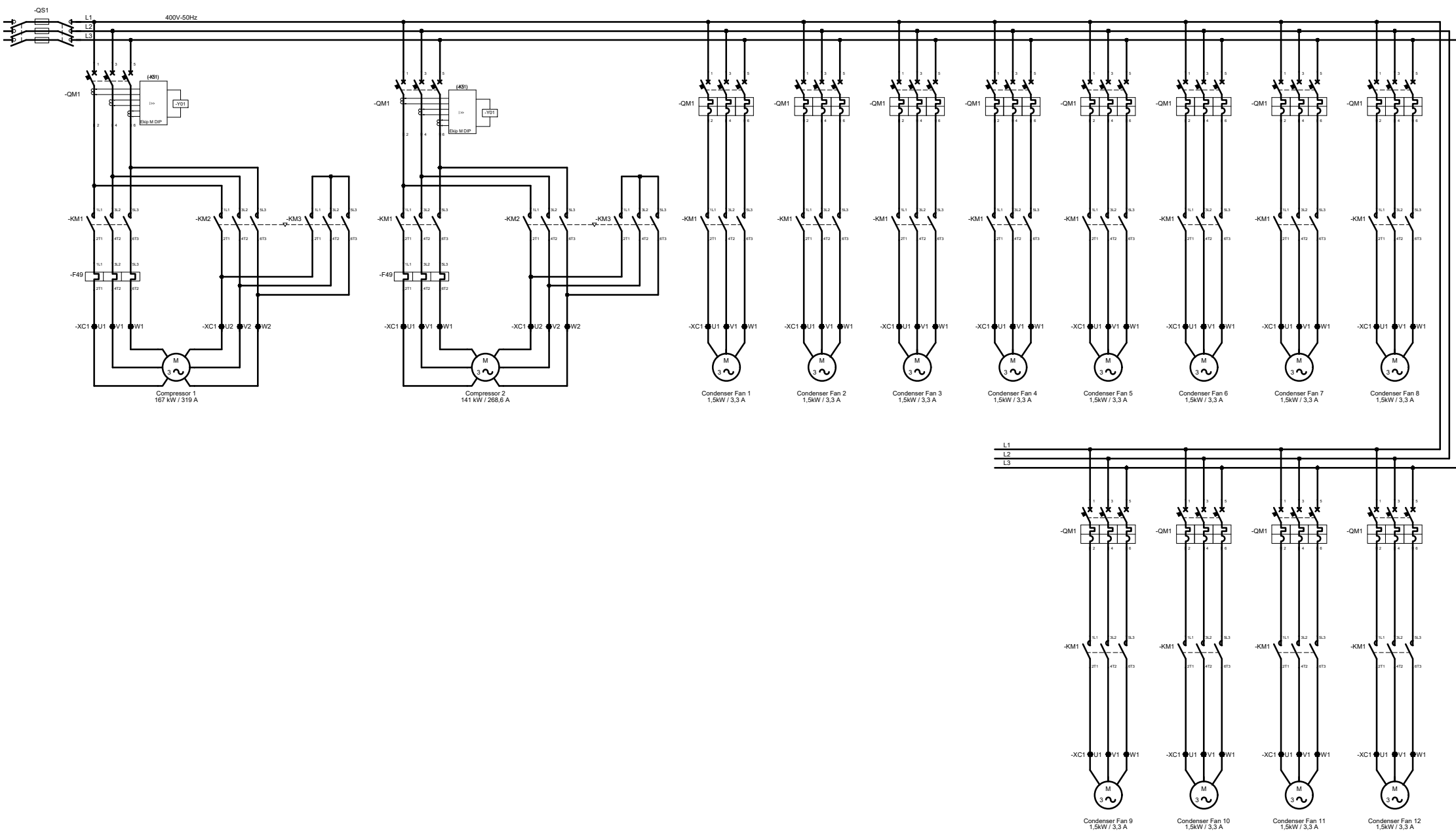




PACCHETTO D'INSTALLAZIONE

INSTALLATION PACKAGE

Motor starting and protection solution for Air-cooled
chiller system with 2 Nos. of compressors 167 & 141kW
and 12Nos. of 1.5kW condenser fans (IEC Market)

ABB

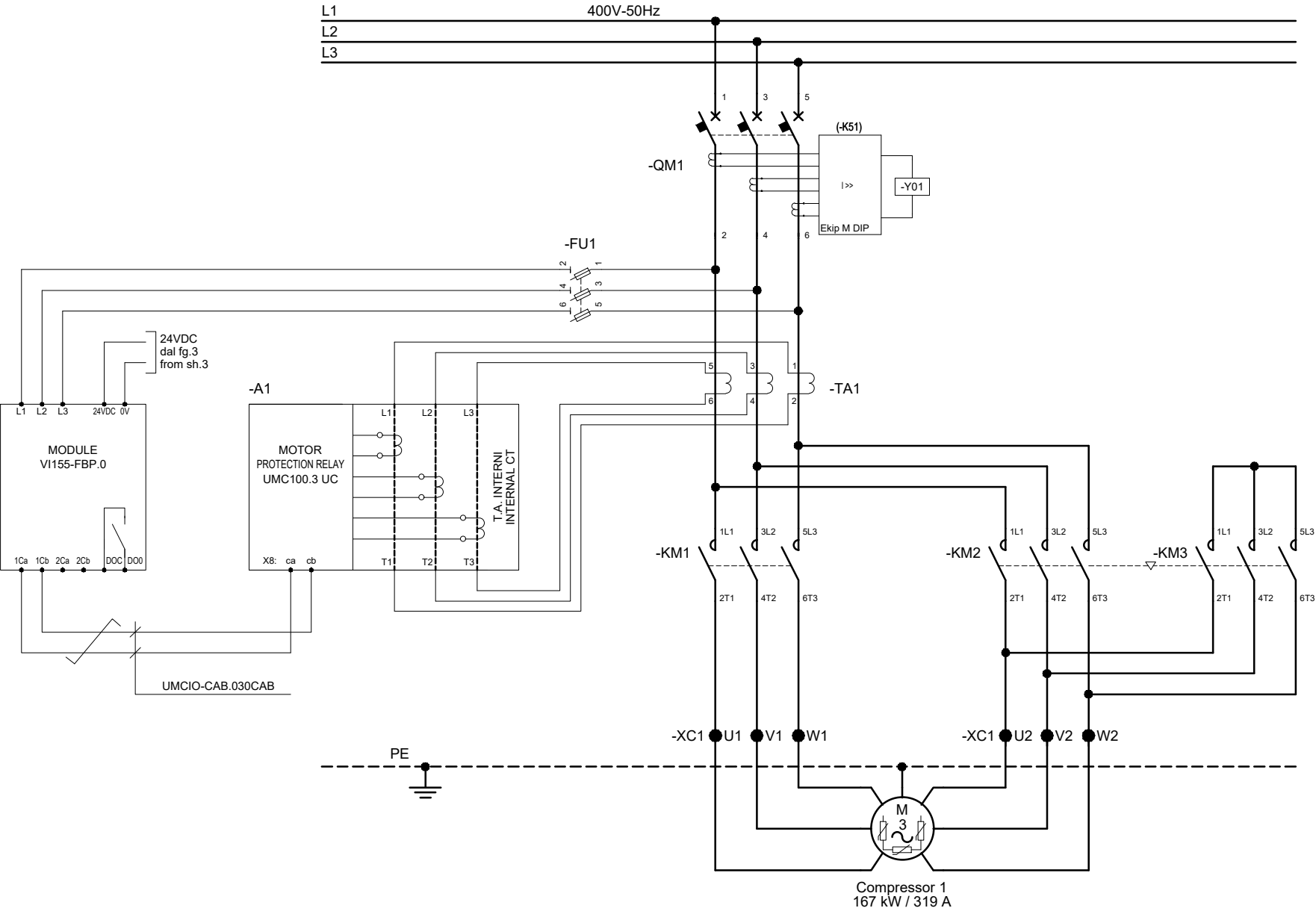
ADVANCED LEVEL WITH UMC100.3

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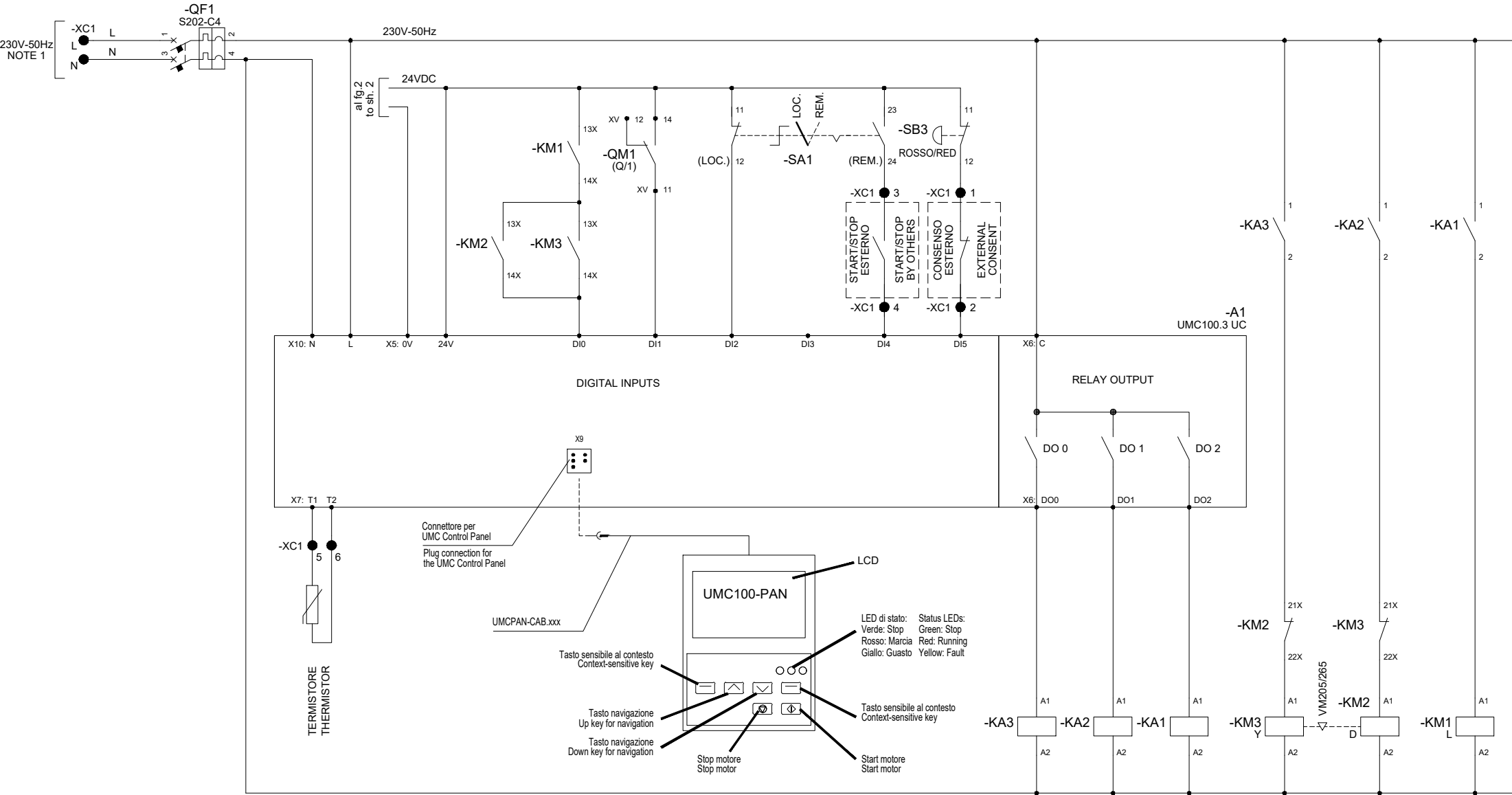
1/12

PARTENZA MOTORE STELLA/TRIANGOLO CON UMC100.3 167kW / 319A / STAR/DELTA STARTER WITH UMC100.3 167kW / 319A



PARTENZA MOTORE STELLA/TRIANGOLO CON UMC100.3 167kW / 319A / STAR/DELTA STARTER WITH UMC100.3 167kW / 319A

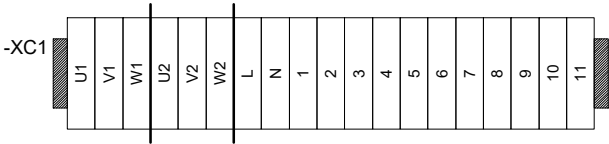
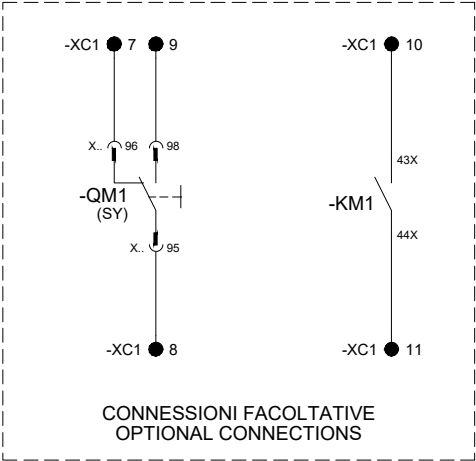
ALIMENTAZIONE AUSILIARIA AUXILIARY POWER SUPPLY	PROTEZIONE CIRCUITO AUSILIARIO AUXILIARY CIRCUIT PROTECTION	CIRCUITO DI COMANDO COMMAND CIRCUIT
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NOTE 1
Arrivo da linea principale con trasformatore 400/230V
Incoming from main line with 400 / 230V transformer

PARTENZA MOTORE STELLA/TRIANGOLO CON UMC100.3 167kW / 319A / STAR/DELTA STARTER WITH UMC100.3 167kW / 319A

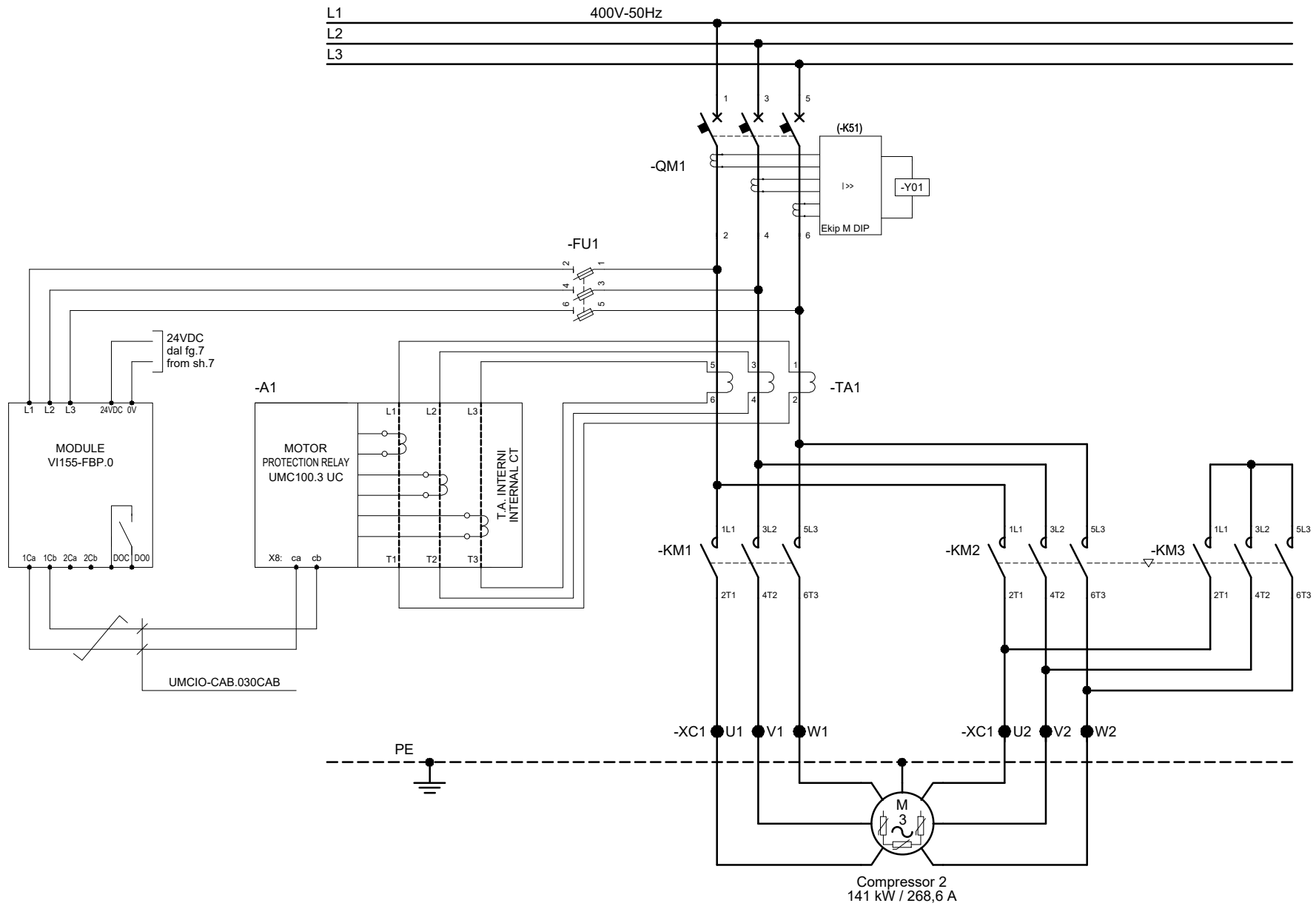
SEGNALAZIONE ELETTRICA INTERRUTTORE SCATTATO ELECTRICAL SIGNALLING OF CIRCUIT-BREAKER TRIPPED	MOTORE MARCIA MOTOR RUN
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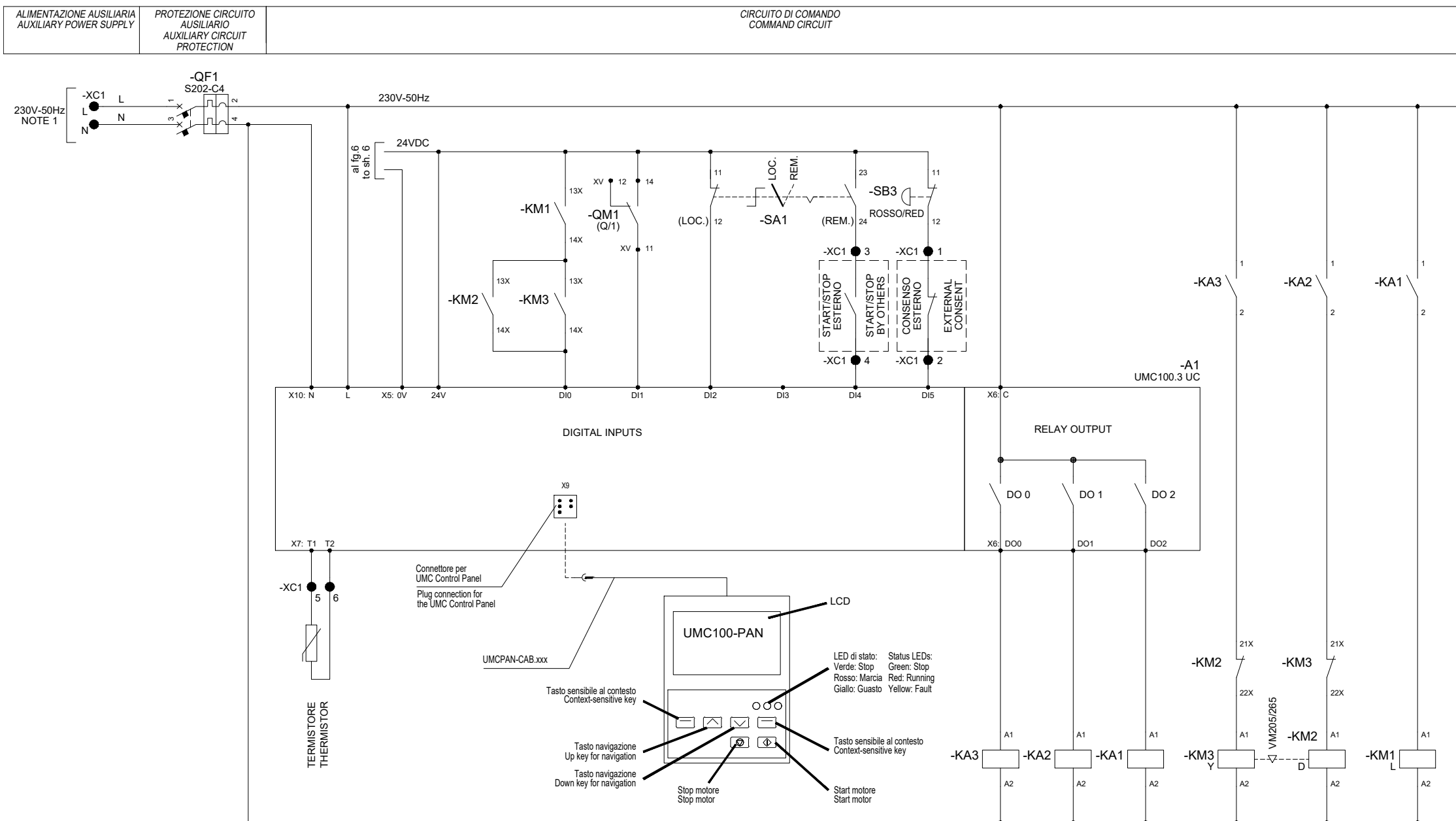
PARTENZA MOTORE STELLA/TRIANGOLO CON UMC100.3 167kW / 319A / STAR/DELTA STARTER WITH UMC100.3 167kW / 319A

SIGLA / ITEM	Q.TA' / Q.TY	DESCRIZIONE / DESCRIPTION	TIPO / TYPE	FORNITORE / MANUFACTURER	CODICE / CODE
-QM1	1	Interruttore automatico 3P. 3P. Circuit breaker	XT5S 630 Ekip M Dip I In=630A	ABB	1SDA100439R1
-QM1	1	1 contatto di scambio aperto-chiuso + 1 contatto sgancio automatico 1 changeover contact open-closed + 1 changeover for tripped indication	AUX-C 1Q+1SY 250Vac/dc XT1..XT4 F/P	ABB	1SDA066431R1
-KM1, -KM2	2	Contattore AF265-30-11-13 bob. 100...250 V c.a./c.c., aux 1NA+1NC AF265-30-11-13 Contactor, 100...250 VAC/DC, aux 1NO+1NC	AF265-30-11-13	ABB	1SFL547002R1311
-KM3	1	Contattore AF190-30-11-13 bob. 100...250 V c.a./c.c., aux 1NA+1NC AF190-30-11-13 Contactor, 100...250 VAC/DC, aux 1NO+1NC	AF190-30-11-13	ABB	1SFL487002R1311
-KM1	1	CAL19-11 cont. 1NA+1NC per AF116...AF370 CAL19-11 Auxiliary Contact Block, 1NO+1NC for AF116...AF370	(FACOLTATIVO) (OPTIONAL) CAL19-11	ABB	1SFN010820R1011
-KM2, -KM3	1	Interblocco meccanico tra AF370...265 e AF205/190 Mechanical Interlock Unit	VM205/265	ABB	1SFN035203R1000
-KM1, -KM2, -KM3	1	Connssione per linea e triangolo AF265...AF370 e stella AF190...AF205 Connections for Star-Delta starters L+D=AF265, Y=AF205	BEY265-4	ABB	1SFN085413R1000
-A1	1	UMC100.3 Motor controller intelligente Intelligent motor controller UMC100.3 UC	UMC100.3 UC	ABB	1SAJ530000R1100
-A1	1	VI155-FBP.0 Modulo tens. x tutte le reti VI155-FBP.0 Voltage-Module for UMC100	VI155-FBP.0	ABB	1SAJ655000R0100
-A1	1	UMCIO-CAB.030 cavo connessione UMC100 UMCIO-CAB.030 Connection Cable UMC100	UMCIO-CAB.030	ABB	1SAJ691000R0001
-A1	1	UMC100-PAN pannello di controllo UMC100-PAN LCD Panel with USB Interface Replaces	UMC100-PAN	ABB	1SAJ590000R0103
-A1	1	UMCPAN-CAB.xxx Prolunga cavo UMCPAN-CAB.xxx Extension cable	(scegliere il tipo in base alla lunghezza necessaria) (choose the type according to the length you need) UMCPAN-CAB.xxx	ABB	1SAJ51000.....
-TA1	1	TA trifase 200 ... 500 A 3-Phase Current Transformer Rated nominal current range 200 ... 500 A	CT5L500R/4	ABB	1SAJ929501R0500
-QF1	1	Interruttore magnetotermico - 6kA Curva C 4A - 2P - C - 4 A Miniature Circuit Breaker - 6kA Curve C 4A - 2P - C - 4 A	S202-C4	ABB	2CDS252001R0044
-FU1	1	Sezionatore portafusibili 3 Poli Fuseholder for overcurrent and short circuit protection	E93/32	ABB	2CSM204753R1801
-KA1, -KA2, -KA3	3	Contattore Modulare 2 contatti NA, alim. aux 230VAC Installation Contactor with a 230 V AC rated control supply voltage and 2NO contacts	ESB16-20N-06	ABB	1SBE111111R0620
-SB3, -SA1	2	Supporto per 3 blocchi Contact Block Holder	MCBH-00	ABB	1SFA611605R1100
-SA1	1	contatto singolo 1NO per montaggio frontale 1NO Modular contact block	MCB-10	ABB	1SFA611610R1001
-SB3, -SA1	2	contatto singolo 1NC per montaggio frontale 1NC Modular contact block	MCB-01	ABB	1SFA611610R1010
-SB3	1	Pulsante modulare di emergenza rosso, 40mm Modular Emergency Stop - Twist release - Mushroom 40mm - Red	MPET4-10R	ABB	1SFA611523R1001
-SA1	1	Selettore modulare a due posizioni, ghiera in plastica nera Modular Selector Switch - 2-Pos Maintained - Short handle - Black plastic	M2SS1-10B	ABB	1SFA611200R1006

PARTENZA MOTORE STELLA/TRIANGOLO CON UMC100.3 141 kW / 268,6 A / STAR/DELTA STARTER WITH UMC100.3 141 kW / 268,6 A

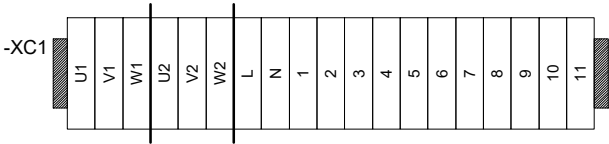
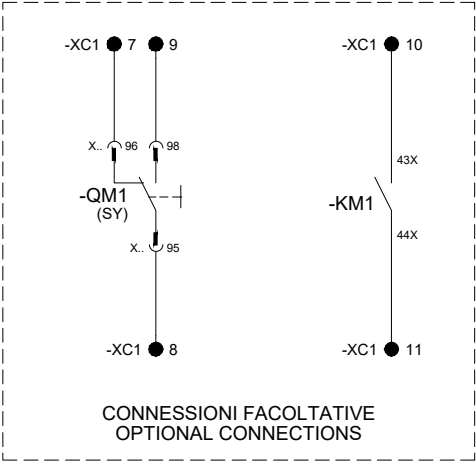


PARTENZA MOTORE STELLA/TRIANGOLO CON UMC100.3 141 kW / 268.6 A / STAR/DELTA STARTER WITH UMC100.3 141 kW / 268.6 A



NOTE 1
Arrivo da linea principale con trasformatore 400/230V
Incoming from main line with 400 / 230V transformer

SEGNALAZIONE ELETTRICA INTERRUTTORE SCATTATO ELECTRICAL SIGNALLING OF CIRCUIT-BREAKER TRIPPED	MOTORE MARCIA MOTOR RUN
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PARTENZA MOTORE STELLA/TRIANGOLO CON UMC100.3 141 kW / 268,6 A / STAR/DELTA STARTER WITH UMC100.3 141 kW / 268,6 A

SIGLA / ITEM	Q.TA' / Q.TY	DESCRIZIONE / DESCRIPTION	TIPO / TYPE	FORNITORE / MANUFACTURER	CODICE / CODE
-QM1	1	Interruttore automatico 3P. 3P. Circuit breaker	XT5S 400 Ekip M Dip I In=400A	ABB	1SDA100438R1
-QM1	1	1 contatto di scambio aperto-chiuso + 1 contatto sgancio automatico 1 changeover contact open-closed + 1 changeover for tripped indication	AUX-C 1Q+1SY 250Vac/dc XT1..XT4 F/P	ABB	1SDA066431R1
-KM1, -KM2	2	Contattore AF190-30-11-13 bob. 100...250 V c.a./c.c., aux 1NA+1NC AF190-30-11-13 Contactor, 100...250 VAC/DC, aux 1NO+1NC	AF190-30-11-13	ABB	1SFL487002R1311
-KM3	1	Contattore AF116-30-11-13 bob. 100...250 V c.a./c.c., aux 1NA+1NC AF116-30-11-13 Contactor, 100...250 VAC/DC, aux 1NO+1NC	AF116-30-11-13	ABB	1SFL427001R1311
-KM1	1	CAL19-11 cont. 1NA+1NC per AF116...AF370 CAL19-11 Auxiliary Contact Block, 1NO+1NC for AF116...AF370	(FACOLTATIVO) (OPTIONAL) CAL19-11	ABB	1SFN010820R1011
-KM2, -KM3	1	Interblocco meccanico tra AF205/190 e AF146...AF116 Mechanical Interlock Unit	VM140/190	ABB	1SFN034403R1000
-KM1, -KM2, -KM3	1	Connessione per linea e triangolo AF190...AF205 e stella AF140...AF146 Connections for Star-Delta starters L+D=AF190, Y=AF140	BEY190-4	ABB	1SFN084813R1000
-A1	1	UMC100.3 Motor controller intelligente Intelligent motor controller UMC100.3 UC	UMC100.3 UC	ABB	1SAJ530000R1100
-A1	1	VI155-FBP.0 Modulo tens. x tutte le reti VI155-FBP.0 Voltage-Module for UMC100	VI155-FBP.0	ABB	1SAJ655000R0100
-A1	1	UMCIO-CAB.030 cavo connessione UMC100 UMCIO-CAB.030 Connection Cable UMC100	UMCIO-CAB.030	ABB	1SAJ691000R0001
-A1	1	UMC100-PAN pannello di controllo UMC100-PAN LCD Panel with USB Interface Replaces	UMC100-PAN	ABB	1SAJ590000R0103
-A1	1	UMCPAN-CAB.xxx Prolunga cavo UMCPAN-CAB.xxx Extension cable	(scegliere il tipo in base alla lunghezza necessaria) (choose the type according to the length you need) UMCPAN-CAB.xxx	ABB	1SAJ51000.....
-TA1	1	TA trifase 185 ... 310A 3-Phase Current Transformer Rated nominal current range 185 ... 310A	CT4L310R/4	ABB	1SAJ929500R0310
-QF1	1	Interruttore magnetotermico - 6kA Curva C 4A - 2P - C - 4 A Miniature Circuit Breaker - 6kA Curve C 4A - 2P - C - 4 A	S202-C4	ABB	2CDS252001R0044
-FU1	1	Sezionatore portafusibili 3 Poli Fuseholder for overcurrent and short circuit protection	E93/32	ABB	2CSM204753R1801
-KA1, -KA2, -KA3	3	Contattore Modulare 2 contatti NA, alim. aux 230VAC Installation Contactor with a 230 V AC rated control supply voltage and 2NO contacts	ESB16-20N-06	ABB	1SBE111111R0620
-SB3, -SA1	2	Supporto per 3 blocchi Contact Block Holder	MCBH-00	ABB	1SFA611605R1100
-SA1	1	contatto singolo 1NO per montaggio frontale 1NO Modular contact block	MCB-10	ABB	1SFA611610R1001
-SB3, -SA1	2	contatto singolo 1NC per montaggio frontale 1NC Modular contact block	MCB-01	ABB	1SFA611610R1010
-SB3	1	Pulsante modulare di emergenza rosso, 40mm Modular Emergency Stop - Twist release - Mushroom 40mm - Red	MPET4-10R	ABB	1SFA611523R1001
-SA1	1	Selettore modulare a due posizioni, ghiera in plastica nera Modular Selector Switch - 2-Pos Maintained - Short handle - Black plastic	M2SS1-10B	ABB	1SFA611200R1006



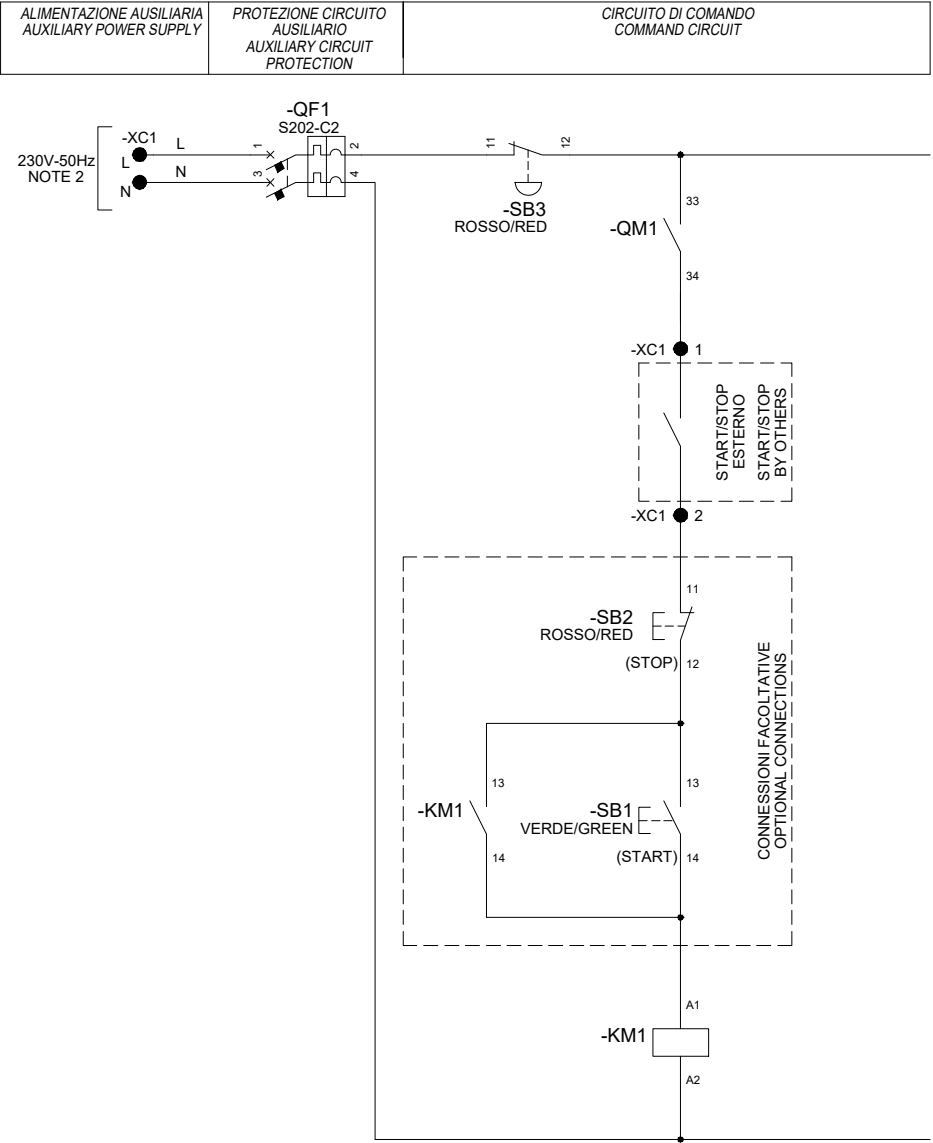
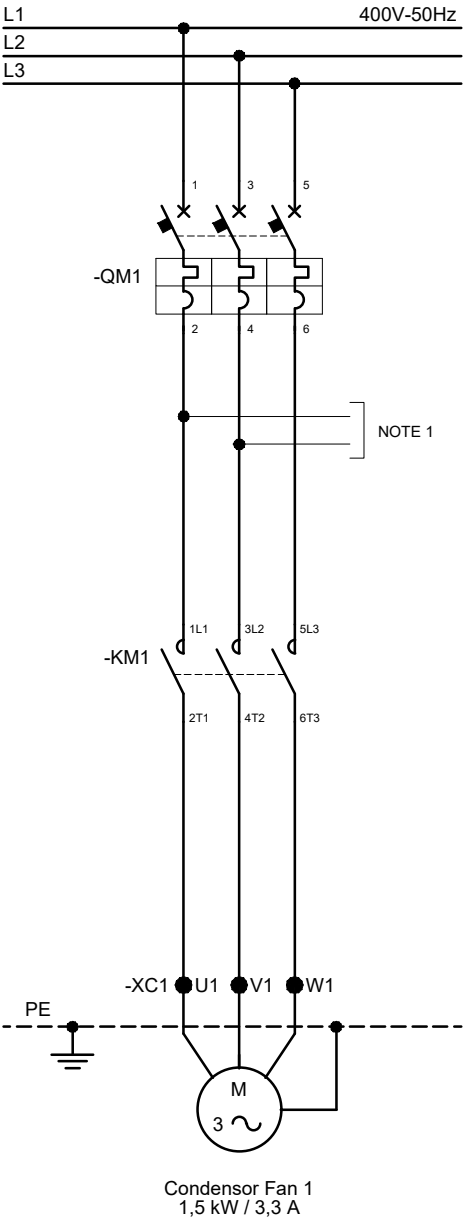
ADVANCED LEVEL WITH UMC100.3

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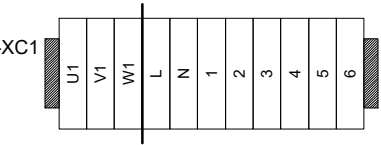
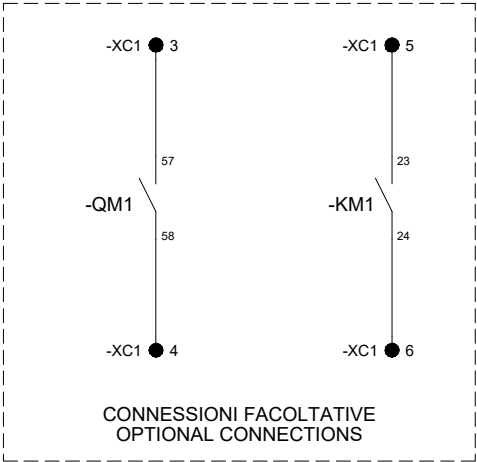
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PARTENZA MOTORE DOL 1,5 kW / 3,3 A / DOL MOTOR STARTER 1,5 kW / 3,3 A



SEGNALAZIONE ELETTRICA INTERRUTTORE SCATTATO ELECTRICAL SIGNALLING OF CIRCUIT-BREAKER TRIPPED	MOTORE MARCIA MOTOR RUN
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NOTE 1
Punto di connessione per trasformatore ausiliario 400 / 230V
Connection point for auxiliary transformer 400 / 230V

NOTE 2
Arrivo da linea principale con trasformatore 400/230V
Incoming from main line with 400 / 230V transformer

PARTENZA MOTORE DOL 1,5 kW / 3,3 A / DOL MOTOR STARTER 1,5 kW / 3,3 A

SIGLA / ITEM	Q.TA' / Q.TY	DESCRIZIONE / DESCRIPTION	TIPO / TYPE	FORNITORE / MANUFACTURER	CODICE / CODE
-QM1	12	Salvatore - In : 4A - Connessioni a molla Push-in Manual Motor Starter - In : 4A - Push-in spring terminals	MS132-4.0K	ABB	1SAM350010R1008
-QM1	12	Contatti ausiliari 1NO + 1NC per MS116, Mx132 e Mx165 - Connessioni a molla Push-in Aux.-contact 1NO + 1NC for MS116, Mx132 e Mx165 - Push-in spring terminals	HK1-11K	ABB	1SAM201902R1201
-QM1	12	Contatto di segnalazione intervento magnetotermico 1NO + 1NC - Connessioni a molla Push-in (FACOLTATIVO) Signaling contacts 1NO + 1NC signal the tripping of the manual motor starter - Push-in spring terminals (OPTIONAL)	SK1-11K	ABB	1SAM201903R1201
-KM1	12	AF09-30-10-13 bob. 100...250 V c.a./c.c., aux 1NO - Connessioni a molla Push-in AF09-30-10-13 100...250 VAC/DC, aux 1NO - Push-in spring terminals	AF09-30-10K-13	ABB	1SBL137005R1310
-KM1	12	Blocco contatto ausiliario unipolare per montaggio frontale, 1NO - Connessioni a molla Push-in (FACOLTATIVO) Auxiliary contact block for front mounting, 1NO - Push-in spring terminals (OPTIONAL)	CA4-10K	ABB	1SBN010160R1010
-QM1, -KM1	12	Adatt. tra AF09..16 con MS116/132 fino a 25A, per connessioni a molla Connecting Link with Manual Motor Starter, for push-in spring terminals	BEA16-4K1	ABB	1SBN081324T1000
-KM1	4	Barrette di collegamento max 65 A per MS116 e Mx132 3-phase busbar for 3 MS116 / Mx132, Ie=65A	PS1-3-65K	ABB	1SAM301903R1013
-KM1	4	Accessori per barrette di collegamento 3-phase power infeed block	S1-M1-25	ABB	1SAM201907R1101
-QF1	12	Interruttore magnetotermico - 6kA Curva C 2A - 2P - C - 2 A Miniature Circuit Breaker - 6kA Curve C 2A - 2P - C - 2 A	S202-C2	ABB	2CDS252001R0024
-SB1	12	Pulsante verde, ghiera in plastica nera (FACOLTATIVO) Green Modular Pushbutton, Black plastic (OPTIONAL)	MP1-10G	ABB	1SFA611100R1002
-SB2	12	Pulsante rosso, ghiera in plastica nera (FACOLTATIVO) Red Modular Pushbutton, Black plastic (OPTIONAL)	MP1-10R	ABB	1SFA611100R1001
-SB1, -SB2, -SB3	36	Supporto per 3 blocchi Contact Block Holder	MCBH-00	ABB	1SFA611605R1100
-SB1	12	contatto singolo 1NO per montaggio frontale 1NO Modular contact block	MCB-10	ABB	1SFA611610R1001
-SB2, -SB3	24	contatto singolo 1NC per montaggio frontale 1NC Modular contact block	MCB-01	ABB	1SFA611610R1010
-SB3	12	Pulsante modulare di emergenza rosso, 40mm Modular Emergency Stop - Twist release - Mushroom 40mm - Red	MPET4-10R	ABB	1SFA611523R1001

SEGNI GRAFICI PER SCHEMI ELETTRICI (NORME IEC 617 E CEI 3-14...3-26)

GRAPHICAL SYMBOLS FOR ELECTRICAL DIAGRAMS (617 IEC STANDARDS)

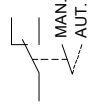
SEGNO SYMBOL	IEC REF. NUMBER	LEGENDA CAPTION		03-03-05	-PRESA E SPINA (FEMMINA E MASCHIO) -PLUG AND SOCKET (MALE AND FEMALE)		07-15-07	-BOBINA DI COMANDO DI UN RELE' CON RITARDO ALLA RICADUTA -RELAY COIL OF A SLOW-RELEASING RELAY
	02-08-01	-EFFETTO TERMICO -THERMAL EFFECT		06-04-01	-MOTORE (SEGNO GENERALE) -MOTOR (GENERAL SYMBOL)		07-15-08	-BOBINA DI COMANDO DI UN RELE' CON RITARDO ALL'ATTRAZIONE -RELAY COIL OF A SLOW-OPERATING RELAY
	02-08-02	-EFFETTO ELETTROMAGNETICO -ELECTROMAGNETIC EFFECT		06-09-11	-TRASFORMATORE DI CORRENTE -CURRENT TRANSFORMER		07-21-01	-FUSIBILE (SEGNO GENERALE) -FUSE (GENERAL SYMBOL)
-----	02-12-01	-COLLEGAMENTO MECCANICO, PNEUMATICO O IDRAULICO -MECHANICAL, PNEUMATIC OR HYDRAULIC CONNECTION (LINK)		07-02-01	-CONTATTO DI CHIUSURA -MAKE CONTACT		07-21-08	-SEZIONATORE CON FUSIBILE INCORPORATO -FUSE-DISCONNECTOR (FUSE ISOLATOR)
	02-12-05	-MOVIMENTO RITARDATO (NEL SENSO DELLO SPOSTA- MENTO DELL'ARCO VERSO IL PROPRIO CENTRO) -DELAYED ACTION (IN THE DIRECTION OF MOVEMENT FROM THE ARC TOWARDS ITS CENTRE)		07-02-03	-CONTATTO DI APERTURA -BREAK CONTACT		07-13-02	-CONTATTORE (CONTATTO APERTO A RIPOSO) -CONTACTOR (CONTACT OPEN IN UNOPERATED POS.)
-----▽-----	02-12-11	-INTERBLOCCO MECCANICO TRA DUE APPARECCHI -MECHANICAL INTERLOCK BETWEEN TWO DEVICES		07-02-04	-CONTATTO DI SCAMBIO CON INTERRUZIONE MOMEN- -CHANGE-OVER BREAK BEFORE MAKE CONTACT TANEA		04-01-01	-TERMISTORE -THERMISTOR
└-----	02-13-01	-COMANDO MECCANICO MANUALE (CASO GENERALE) -MANUALLY OPERATED CONTROL (GENERAL CASE)		07-08-02	-CONTATTO DI POSIZIONE DI APERTURA (FINE CORSA) -POSITION SWITCH (LIMIT SWITCH), BREAK CONTACT			
(M)-----	02-13-26	-COMANDO A MOTORE ELETTRICO -OPERATED BY ELECTRIC MOTOR		(07-11-06)	-ELEMENTO DI COMMUTATORE UNIPOLARE A DUE POSIZIONI CON DIAGRAMMA DI POSIZIONE -SINGLE-POLE TWO-POSITION SWITCH WITH POSITION DIAGRAM			
•	03-02-01	-CONNESSIONE DI CONDUTTORI -CONNECTION OF CONDUCTORS		(07-13-101)	-INTERRUTTORE DI POTENZA AD APERTURA AUTOMATICA -CIRCUIT BREAKER WITH AUTOMATIC RELEASE			
●	03-02-02	-TERMINALE O MORSETTO -TERMINAL		07-15-01	-BOBINA DI COMANDO (SEGNO GENERALE) -OPERATING DEVICE (GENERAL SYMBOL)			



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