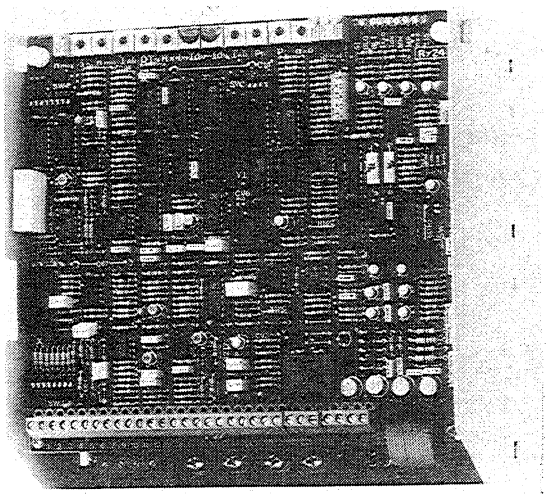
SIEI

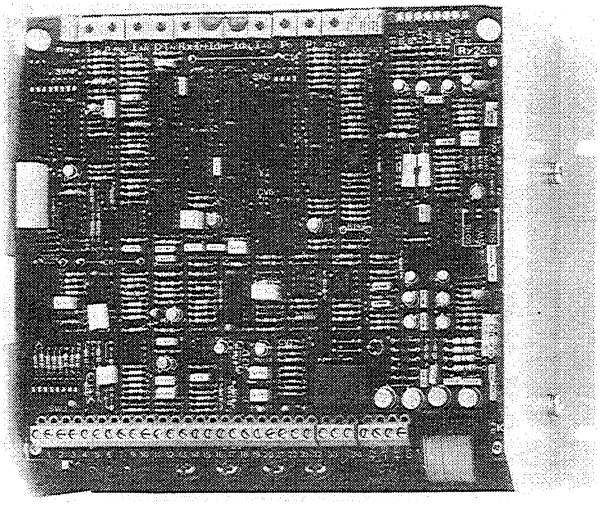
Aufstellungsanweisung
Installation Instructions
Notice de montage
Istruzioni di installazione

AWA 82-618 (04/88) D/E/F/I

TPy2-415/280-15...42-4B

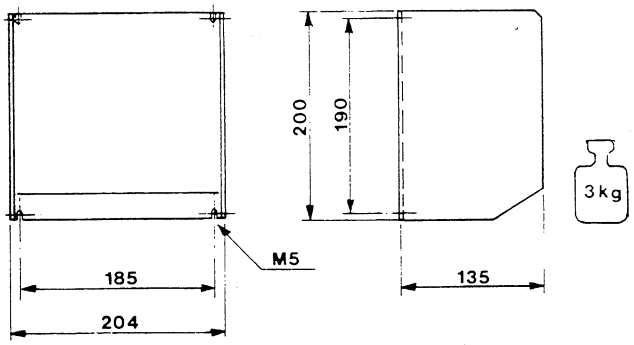


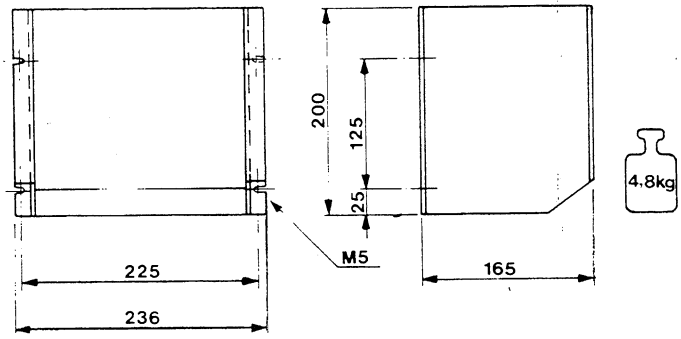
TPy2-415/280-15-4B



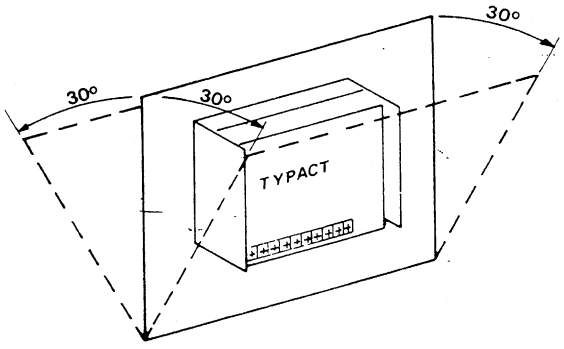
TPy2-415/280-30 (42)-4B

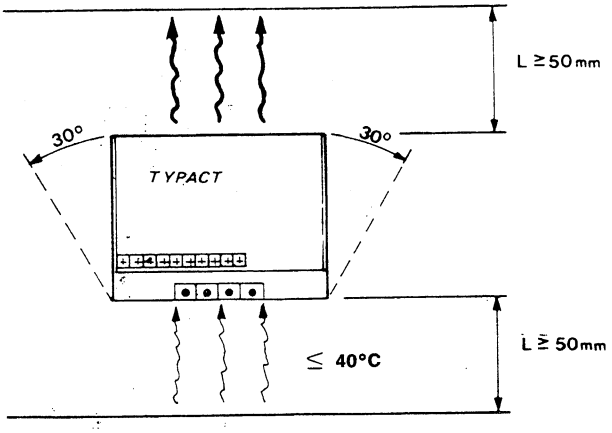
1. Abmessungen und Gewicht / Dimensions and weight / Dimensions et poids / Dimensioni e peso



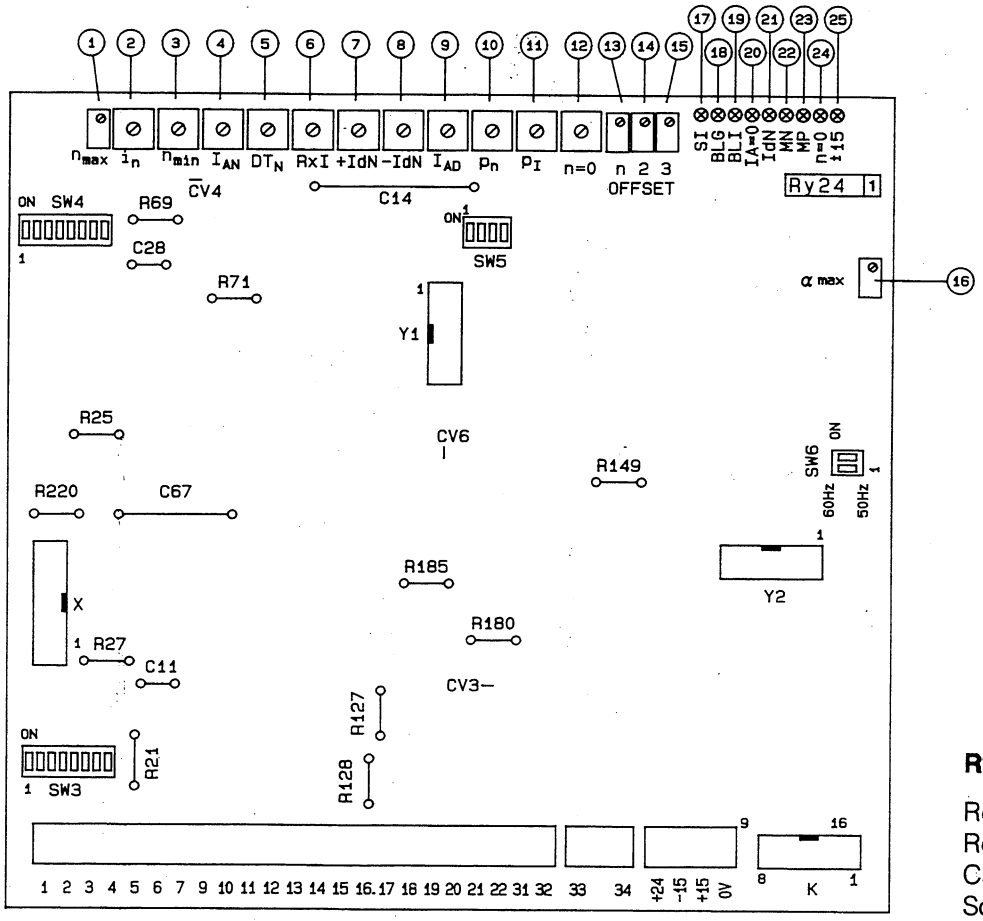


2. Montage / Mounting / Montage / Montaggio



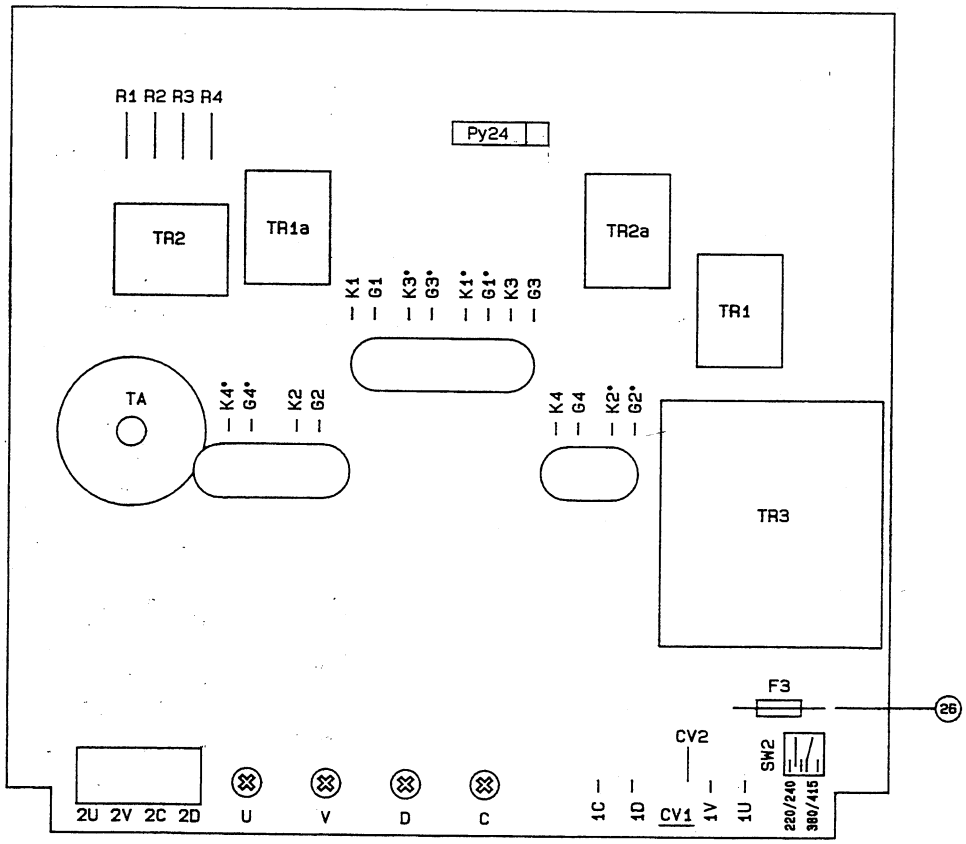


3. Schematische Darstellung / Lay-out diagram / Schéma d'implantation des composants / Rappresentazione topografica



Ry24-1

Reglerkarte
Regulation board
Carte de réglage
Scheda di regolazione



Py24

Leistungsteil
Power board
Carte de puissance
Scheda di potenza

Potentiometer / Potentiometers / Potentiomètres / Potenziometri

① n_{max} = Max. Drehzahl / Max. speed / Vitesse max. / Velocità massima.

② i_n = I-Anteil des n-Reglers / Speed regulator integral adjustment / Composant intégrále du régulateur de vitesse / Componente integrale del regolatore di velocità.

③ n_{min} = Min. Drehzahl / Min. speed / Vitesse min. / Velocità minima.

④ I_{AN} = Eichung Stromanzeige / Current monitor e.o.s. adjustment / Réglage de l'échelle de l'indicateur de courant / Fondo scala dell'indicatore di corrente.

⑤ DT_n = Eichung Drehzahlanzeige / Speed monitor e.o.s. adjustment / Réglage de l'échelle de l'indicateur tachymétrique / Fondo scala dell'indicatore tachimetrico.

⑥ **R×I** = R×I Kompensation / R×I Compensation / Compensation R×I / Compensazione R×I.

⑦ $+I_{dN}$ = Strombegrenzung / Current limit / Limitation de courant / Limite di corrente.

⑧ $-I_{dN}$ = Strombegrenzung / Current limit / Limitation de courant / Limite di corrente.

⑨ I_{AD} = Stromregleradaption / Current regulator adaptation adjustment / Adaptation du régulateur de courant / Adattativo del regolatore di velocità.

⑩ p_n = P-Anteil des n-Reglers / Speed regulator proportional adjustment / Composant proportionnel du régulateur de vitesse / Componente proporzionale del regolatore di velocità.

⑪ p_i = P-Anteil des I-Reglers / Current regulator proportional adjustment / Composant proportionnel du régulateur de courant / Componente proporzionale del regolatore di corrente.

⑫ **n=0** = Drehzahl = 0 / Zero speed monitor / Signalisation de vitesse = 0 / Soglia di velocità zero.

⑬ Offset **n** = Offsetabgleich des n-Reglers / Speed regulator offset compensation / Compensation d'offset du régulateur de vitesse / Offset del regolatore di velocità.

⑭ Offset **2** = Offsetabgleich des n-0 Diskriminator / Speed = 0 comparator offset compensation / Compensation d'offset du comparateur de référence = 0 / Offset del rivelatore di velocità = 0.

⑮ Offset **3** = Offsetabgleich des Sollwerts = 0 Diskriminator / Reference = 0 comparator offset / Compensation d'offset du comparaterur de référence / Offset del rilevatore di riferimento = 0.

⑯ α_{max} = Minimaler Zündwinkel / Minimal conduction angle / Angle de minimal conduction / Angolo di minima conduzione.

Leuchtdioden / Leds / Diodes lumineuses / Diodi luminosi

⑰ **SI** = Zündimpulse gesperrt / Firing pulses disabled / Blocage des impulsions / Soppressione impulsi.

⑱ **BLG** = Reglerteil gesperrt / Regulation section disabled / Blocage de la régulation / Blocco della regolazione.

⑲ **BLI** = Stromregler gesperrt / Current regulator disabled / Blocage du régulateur de courant / Blocco del regolatore di corrente.

⑳ $I_A = 0$ = Ankerstrom = 0 / Armature current = 0 / Courant d'induit = 0 / Corrente d'armatura = 0.

㉑ I_{dN} = Strombegrenzung erreicht / Operation in current limit / Fonctionnement au courant limite / Funzionamento in limite di corrente.

㉒ **MN** = Brücke MN im Betrieb / MN bridge operation / Fonctionnnement du pont MN / Funzionamento del ponte MN.

㉓ **MP** = Brücke MP im Betrieb / MP bridge operation / Fonctionnnement du pont MP / Funzionamento del ponte MP.

㉔ **n=0** = Drehzahl = 0 / Speed = 0 / Vitesse = 0 / Velocità = 0.

㉕ **±15** = ±15V Versorgungsspannung vorhanden / ±15V Voltage supply / Tension d'alimentation ±15V / Tensione d'alimentazione ±15V.

Sicherungen / Fuses / Fusibles / Fusibili

㉖ **F3** = 0,25A 500V ∅ 6,3×32 Navy/Omega

4. Elektrischer Anschluss / Electrical connection / Raccordement électrique / Collegamento elettrico

4.1 Der Anschluss des Stromrichters ist gemäss dem Anschlusschaltbild durchzufuhren. Die mit ⊂⊃⏚ bezeichneten Leitungen sind abzuschirmen und die Schirme einseitig zu Erden. (∅ ⩾ 0,5 mm²)

The converter connections have to be wired according to the connection diagram; all wires identified by ⊂⊃⏚ have to be shielded and the shield must be connected to ground at the converter side only. (∅ ⩾ 0,5 mm²)

Le raccordement du variateur doit être réalisé selon le schéma; tous les conducteurs marqués par ⊂⊃⏚ doivent être protégés par un blindage, qui doit être mis à la terre côté variateur seulement. (∅ ⩾ 0,5 mm²)

Il collegamento del convertitore deve essere eseguito secondo lo schema d'inserzione; tutti i conduttori contrassegnati con ⊂⊃⏚ devono essere schermati e lo schermo va messo a terra solo dal lato convertitore. (∅ ⩾ 0,5 mm²)

4.2 **Achtung! Vor dem Einschalten des Stromrichters:**
- Überprüfen der Anschlusspannung (siehe Punkt 5).
- Stellung der Mikroschalter SW... mit Tabelle 4.2.1 überprüfen.
- Überprüfung der extern anzuordnenden **überflinken** Sicherungen. Es dürfen nur die in Tabelle 4.2.2 angegebenen Typen eingesetzt werden.
- Für besonderen Anwendungsfalle siehe die Betriebsanweisung.

Caution! Before making converter connection:
- Check that the line voltage corresponds to the voltage on the serial tag (paragraph 5).
- Check that the SW... dip-switches position are correct (table 4.2.1).
- Check that the **semiconductor** fuses meet the specifications of table 4.2.2.
- For special applications refer to instruction manual.

Attention! Avant la mise sous tension du variateur:
- Vérifier que la tension d'alimentation correspond à la plaque signalétique du variateur (paragraphe 5).
- Contrôler que la position des dip-switches SW... corresponde au tableau 4.2.1.
- Contrôler que les fusibles **ultrarapides** montés correspondent aux specifications du tableau 4.2.2.
- Pour applications particulieres consulter le manuel d'instruction.

Attenzione! Prima di dar tensione al convertitore:
- Verificare che la tensione di linea corrisponda a quella di targa del convertitore.
- Controllare che la posizione dei dip-switches SW... corrisponda alla tabella 4.2.1.
- Controllare che i fusibili **extrarapidi** montati corrispondano a quelli specificati nella tabella 4.2.2.
- Per applicazioni particolari è necessario consultare il relativo manuale d'istruzione.

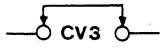
Tabelle / Table / Tableau / Tabella 4.2.1

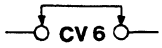
	OFF	ON
SW4 -1	X	
-2		X
-3	X	
-4		X
-5		X
-6		X
-7		X
-8	X	

	OFF	ON
SW5 -1	X	
-2	X	
-3	X	
-4		X

	OFF	ON
SW6-1		X

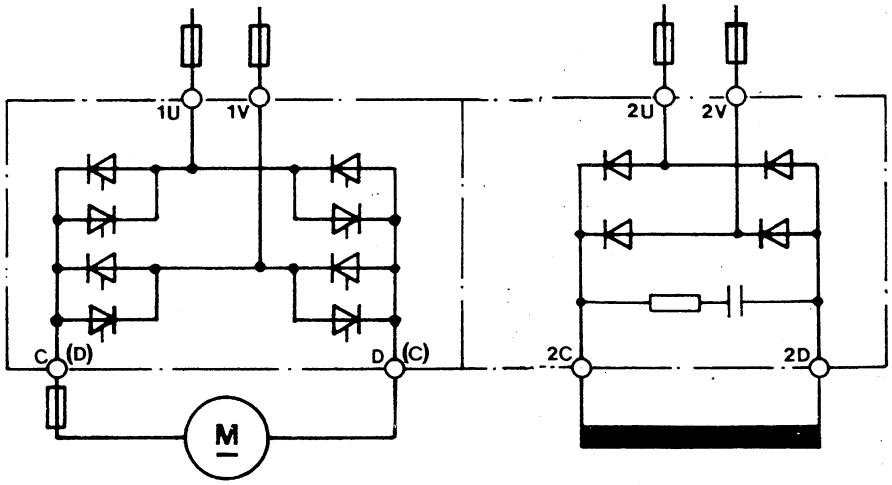
— Karte **Ry24-1**
— Board **Ry24-1**
— Carte **Ry24-1**
— Scheda **Ry24-1**





- Für andere SW... siehe andere Punkte.
- For other dip-switches see following paragraphs.
- Pour les autres dip-switches voir paragraphes suivants.
- Per i rimanenti dip-switches vedi paragrafi seguenti.

Tabelle / Table / Tableau / Tabella 4.2.2



TPy2-415/280-15-4B	3 ×	gRD2/20	500V 20A E27	2 ×	gRD2/6	500V 6A E27	JEAN MÜLLER
	3 ×	A70P20	700V 20A	2 ×	A60×5		GOULD SHAWMUT
	3 ×	FWP20	700V 20A	2 ×	FWP5	700V 5A	BUSSMAN
TPy2-415/280-30-4B	3 ×	gRD3/35	500V 35A E33	2 ×	gRD2/6	500V 6A E27	JEAN MÜLLER
	3 ×	A70P40	700V 40A	2 ×	A60×5		GOULD SHAWMUT
	3 ×	FWP40	700V 40A	2 ×	FWP5	700V 5A	BUSSMAN
TPy2-415/280-42-4B	3 ×	gRD3/50	500V 50A E33	2 ×	gRD2/6	500V 6A E27	JEAN MÜLLER
	3 ×	A70P50	700V 50A	2 ×	A60×5		GOULD SHAWMUT
	3 ×	FWP50	700V 50A	2 ×	FWP5	700V 5A	BUSSMAN

4.3 Anschlussklemmen, Eich-und Kontroll-Bauelemente befinden sich auf den 2 unter bezeichneten Platinen:
Py24 Leistungsteil — Ry24-1 Reglerteil

Connection terminal strips, control and adjustment components, are mounted on following boards:
Py24 Power board — Ry24-1 Regulation board

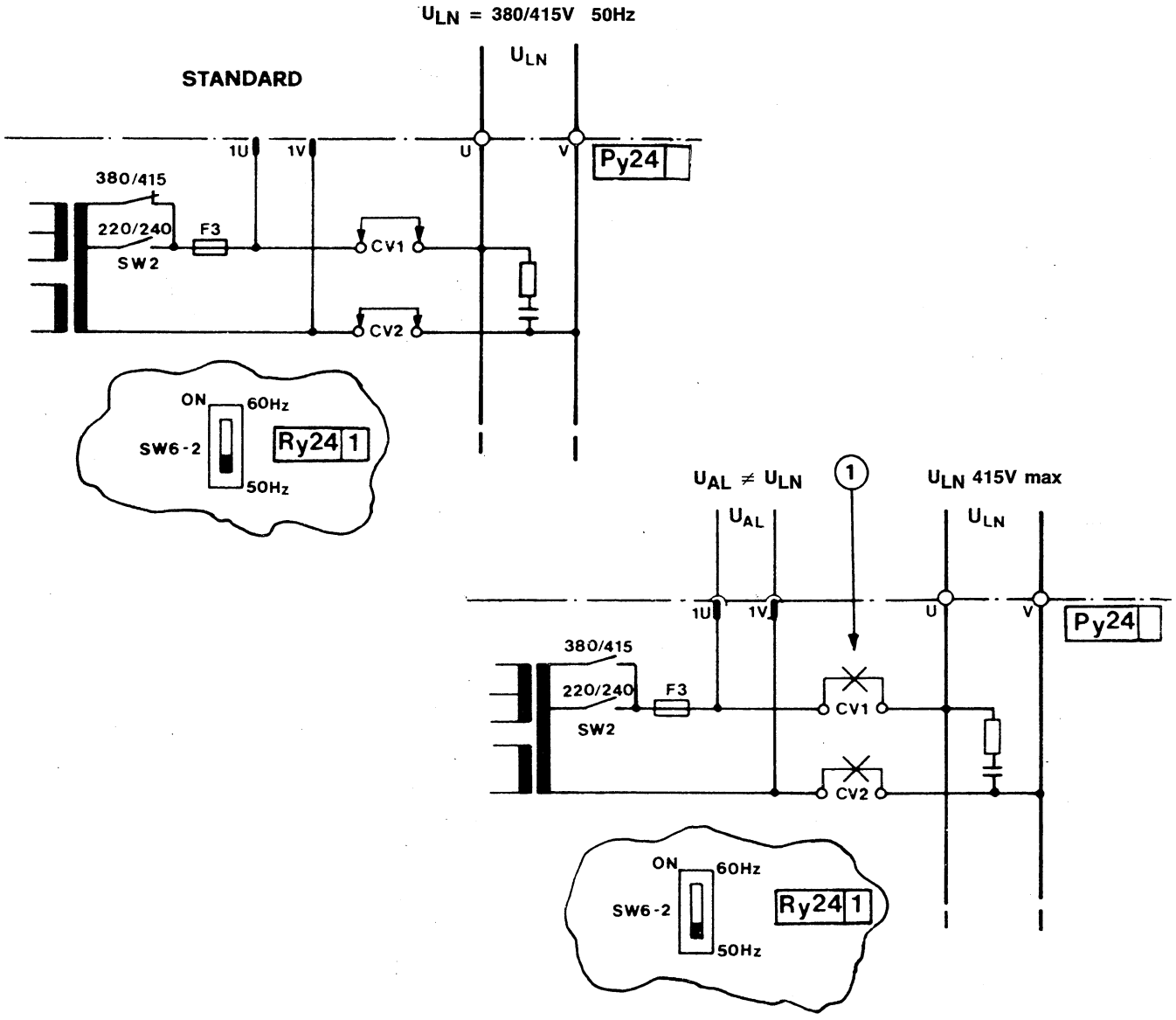
Les bornes de raccordement, les composants de contrôle et d'étalonnage sont montés sur les cartes suivantes:
Py24 Carte de puissance — Ry24-1 Carte de régulation

Le morsettiere di collegamento, i componenti di controllo e taratura sono disposti sulle schede:
Py24 Scheda di potenza — Ry24-1 Scheda di regolazione

5. Stromrichter-Einspeisung / Converter supply / Alimentation du variateur / Alimentazione del convertitore.

U_{AL} Versorgungsspannung des Reglerteils U_{AL} Regulation section supply voltage U_{AL} Tension d'alimentation des circuits de régulation U_{AL} Tensione d'alimentazione dei circuiti di regolazione	200V —10% ... 240V + 10% 380V —10% ... 415V + 10%	50/60Hz ± 4%
U_{LN} Netzspannung / Mains voltage Tension secteur / Tensione di linea	min 110V...max 415V + 10%	50/60Hz ± 4%

5.1 Anschlussbilder / Connection diagrams / Schémas de raccordement / Schemi di allacciamento



① Bei $U_{AL} \neq U_{LN}$ oder bei getrennter Versorgung von Leistungs- und Reglerteil.
For $U_{AL} \neq U_{LN}$ or for independent supply of regulation and power section.
Pour $U_{AL} \neq U_{LN}$ ou pour alimentation séparée de la régulation et de la partie puissance.
Per $U_{AL} \neq U_{LN}$ o per alimentazione separata della regolazione dalla parte di potenza.

5.2 Einstellungen / Adjustments / Étalonnages / Tarature

STANDARD

	220/240V	380/415V
SW2		X

	(50Hz) OFF	ON (60Hz)
SW6-2	X	

	220/240V	380/415V
SW2		

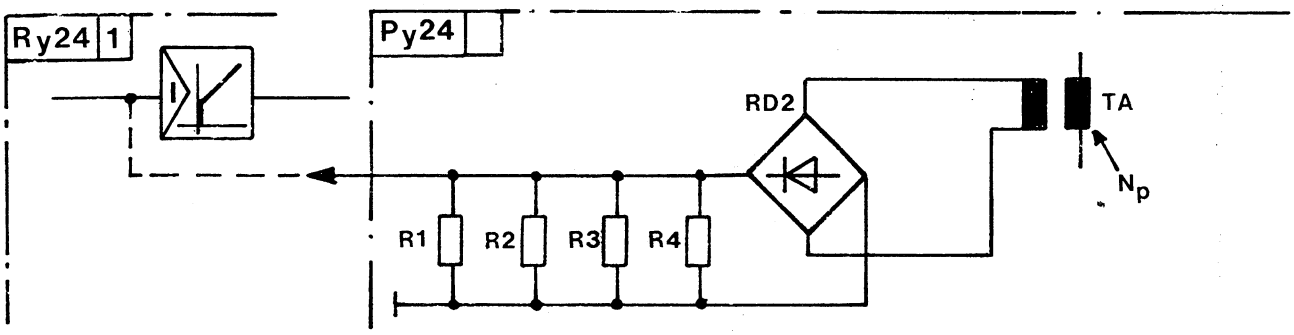
	(50Hz) OFF	ON (60Hz)
SW6-2		

6. Strombegrenzung / Current limit / Limite de courant / Limite di corrente: I_{dN}

— Karte **Py24**
— Board **Py24**
— Carte **Py24**
— Scheda **Py24**

STANDARD				
I_{dN} 15 A Np = 2 R1 = R2 = R3 — 390Ω	$I_{dN} \leq 10$ A ☐ Np = 2 R1 = R2 — 390Ω	$I_{dN} \leq 5$ A ☐ Np = 2 R1 — 390Ω		☐ TPy2-415/280-15-4B
I_{dN} 30 A Np = 1 R1 = R2 = R3 — 390Ω	$I_{dN} \leq 20$ A ☐ Np = 1 R1 = R2 — 390Ω	$I_{dN} \leq 10$ A ☐ Np = 1 R1 — 390Ω		☐ TPy2-415/280-30-4B
I_{dN} 42 A Np = 1 R1 = R2 = R3 — 390Ω R4 — 330Ω	$I_{dN} \leq 30$ A ☐ Np = 1 R1 = R2 = R3 — 390Ω	$I_{dN} \leq 20$ A ☐ Np = 1 R1 = R2 — 390Ω	$I_{dN} \leq 10$ A ☐ Np = 1 R1 — 390Ω	☐ TPy2-415/280-42-4B

Np = primäre Windungszahl / TA a.c. side turns number / Nombre des spires du TA à coté c.a. / Numero spire TA lato c.a.

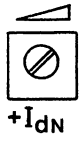


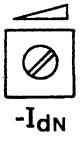
Bemerkung : innerhalb des gewählten Bereichs ist eine Reduzierung von I_{max} mit Potentiometern "$+I_{dN}$" und "$-I_{dN}$" auf Ry24-1 moeglich.

Note : within the rated current selected range, potentiometers "$+I_{dN}$", "$-I_{dN}$" on board Ry24-1 allow to decrease the current limit.

Note : dans le champ choisí de courant les potentiomètres "$+I_{dN}$" et "$-I_{dN}$" sur la carte Ry24-1 permettent de réduire la limitation de courant.

Nota : nella gamma di corrente prescelta i potenziometri "$+I_{dN}$", "$-I_{dN}$" sulla scheda Ry24-1 consentono di ridurre il limite di corrente.

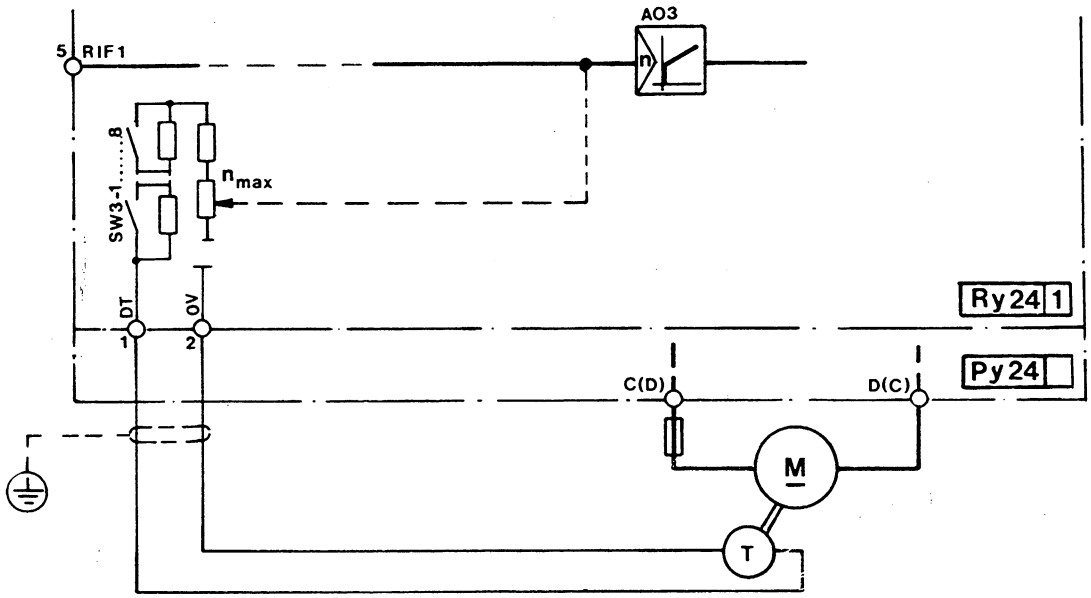




7. Drehzahl- Istwert / Feedback / Réaction / Reazione

7.1 Tachoregelung / Tachometer feedback / Réaction tachymétrique / Reazione tachimetrica

7.1.1 Typische Anschlusschaltbild / Typical connection diagram / Schéma typique de raccordement / Schema tipico di inserzione.



7.1.2 Einstellungen / Adjustments / Etalonnages / Tarature

STANDARD 90V

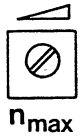
	OFF	ON
SW3- 1		X
- 2		X
- 3		X
- 4		X
- 5	X	
- 6	X	
- 7	X	
- 8	X	

	OFF	ON
- 1		
- 2		
- 3		
- 4		
- 5		
- 6		
- 7		
- 8		

5... 10V	10... 18V	18... 35V	35... 65V	65... 110V	110... 180V	180... 300V
ON	ON	ON	ON	ON	ON	OFF
ON	ON	ON	ON	ON	ON	OFF
ON	ON	ON	ON	ON	OFF	OFF
ON	ON	ON	ON	ON	OFF	OFF
ON	ON	ON	ON	OFF	OFF	OFF
ON	ON	ON	OFF	OFF	OFF	OFF
ON	ON	OFF	OFF	OFF	OFF	OFF
ON	OFF	OFF	OFF	OFF	OFF	OFF

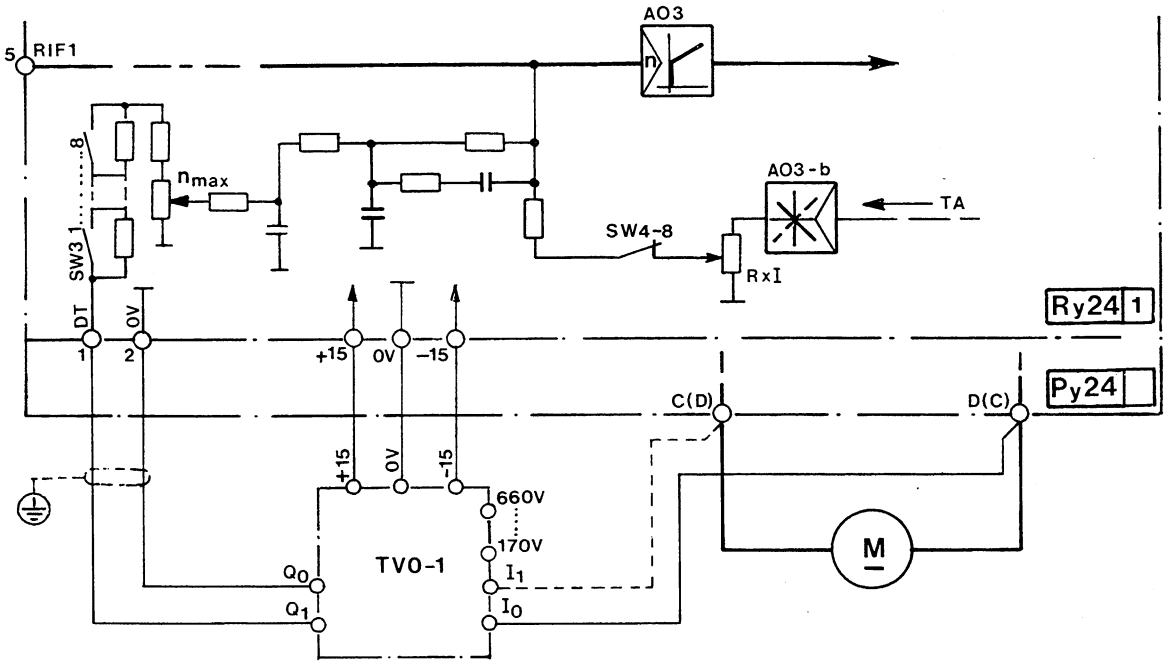
Feinanpassung über n_{max} / Fine adjustment with n_{max}

Etalonnage fin par n_{max} / Taratura fine con n_{max}



7.2 Ankerspannungsregelung mit galvanischer Trennung / Armature feedback with voltage transducer / Réaction d'induit avec séparation galvanique / Reazione d'armatura con separazione galvanica.

7.2.1 Typisches Anschlusschaltbild / Typical connection diagram / Schéma typique de raccordement / Schema tipico di inserzione.



7.2.2 Einstellungen / Adjustments / Etalonnages / Tarature

	OFF	ON
SW3 -1		X
-2		X
-3		X
-4		X
-5		X
-6		X
-7		X
-8		X

SW4-8 ON

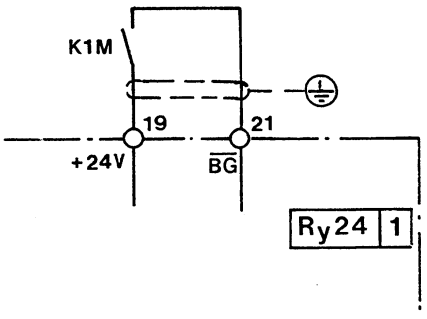
Feinanpassung über n_{max}
Fine adjustment with n_{max}
Etalonnage fin par n_{max}
Taratura fine con n_{max}

n_{max}

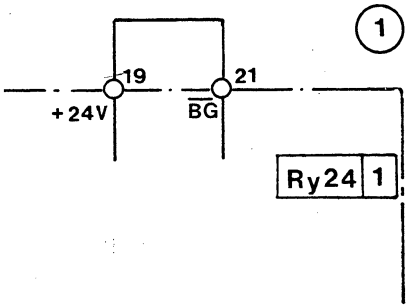
RxI Kompensation
RxI Compensation
Compensation RxI
Compensazione RxI

RxI

8. Reglerfreigabe / Regulation enable / Deblocage de la régulation / Sblocco della regolazione

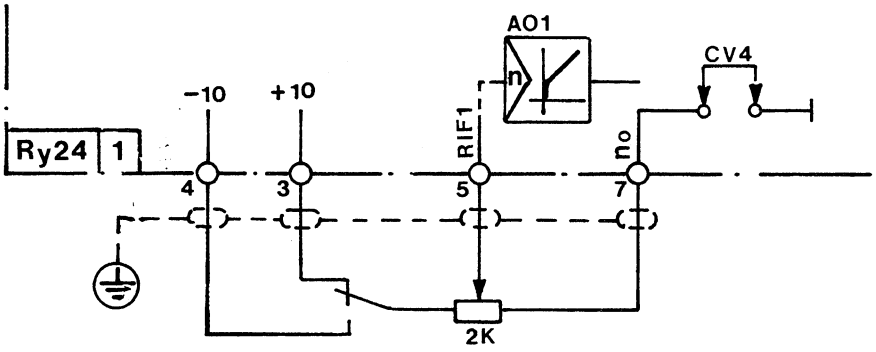


K1M	
OFF	Gesperrt / Disabled Bloqué / Bloccato
ON	Freigegeben / Enabled Débloqué / Sbloccato

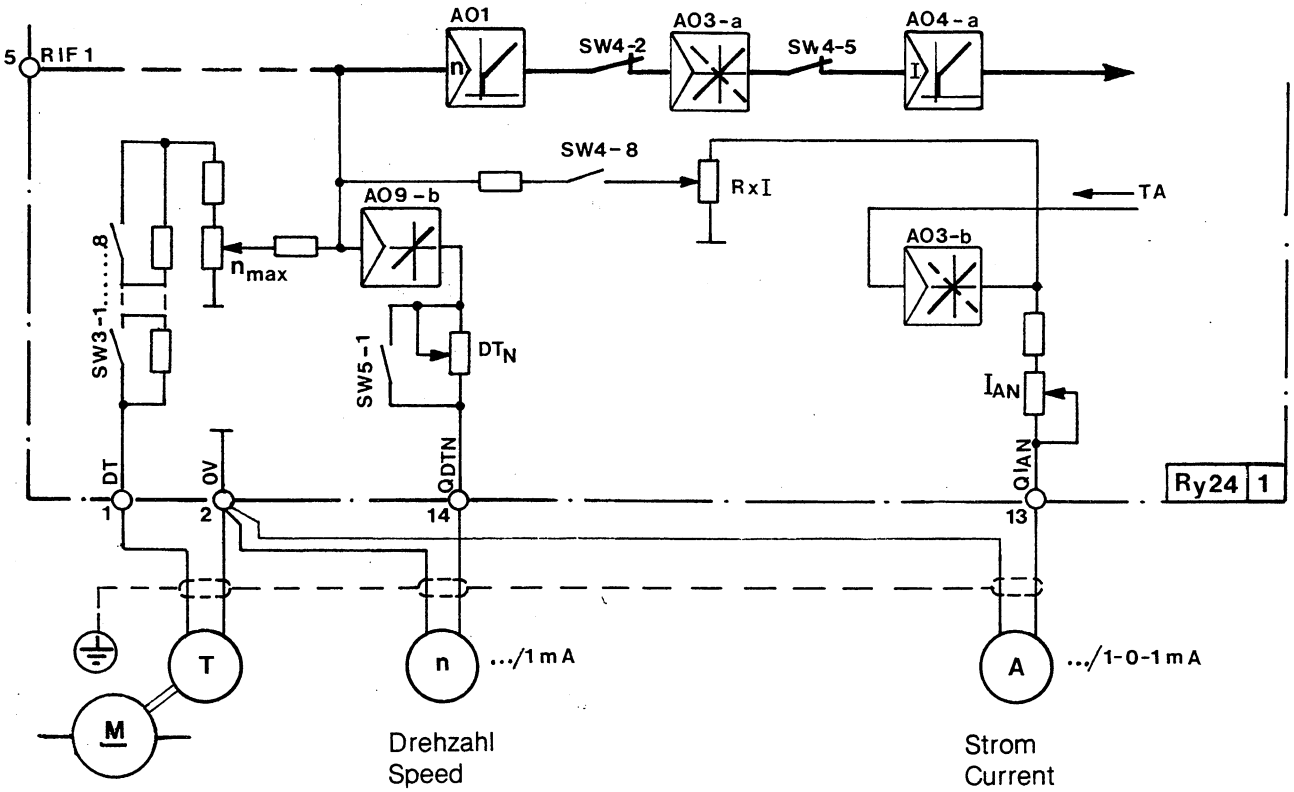


① Nur bei Standardeinspeisung (siehe Punkt 5.1)
In case of standard supply only (see paragraph 5.1)
Seulement en cas d'alimentation standard (voir paragraphe 5.1)
Solo nel caso di alimentazione standard (vedi paragrafo 5.1)

9. **Anschluss des Sollwertpotentiometers / Reference potentiometer connection / Raccordement du potentiomètre de référence / Collegamento del potenziometro di riferimento.**

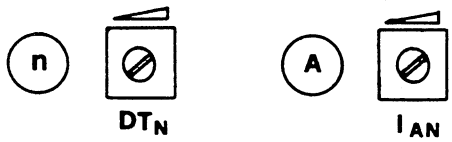


10. **Anschluss der Anzeigergeräte / Monitoring instrument connections / Raccordement des instruments de mesure / Collegamento strumenti di misura**

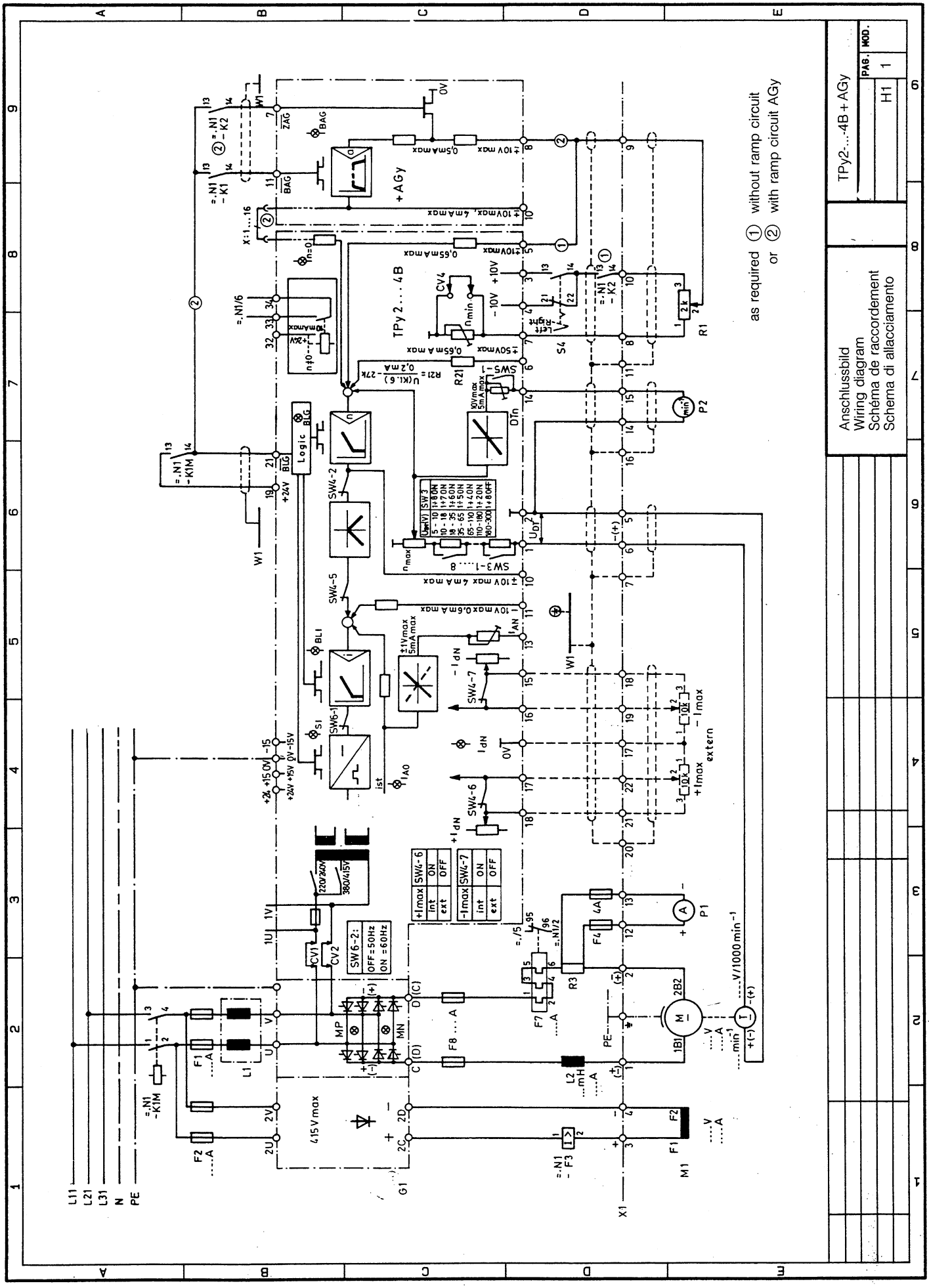


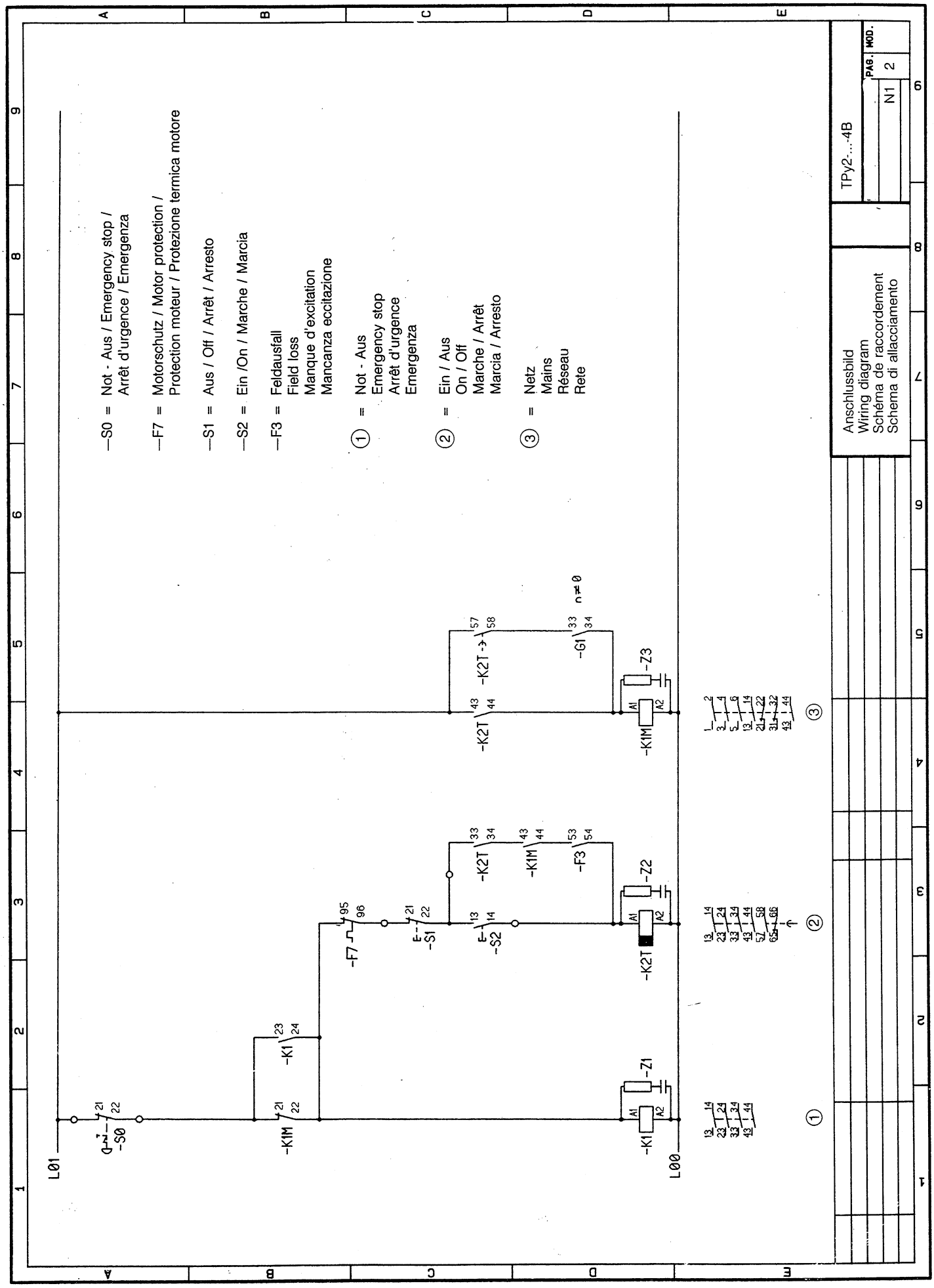
SW5-1	OFF	ON
	X	

Feinanpassung über
Adjustment with
Etalonnage par
Tarature con

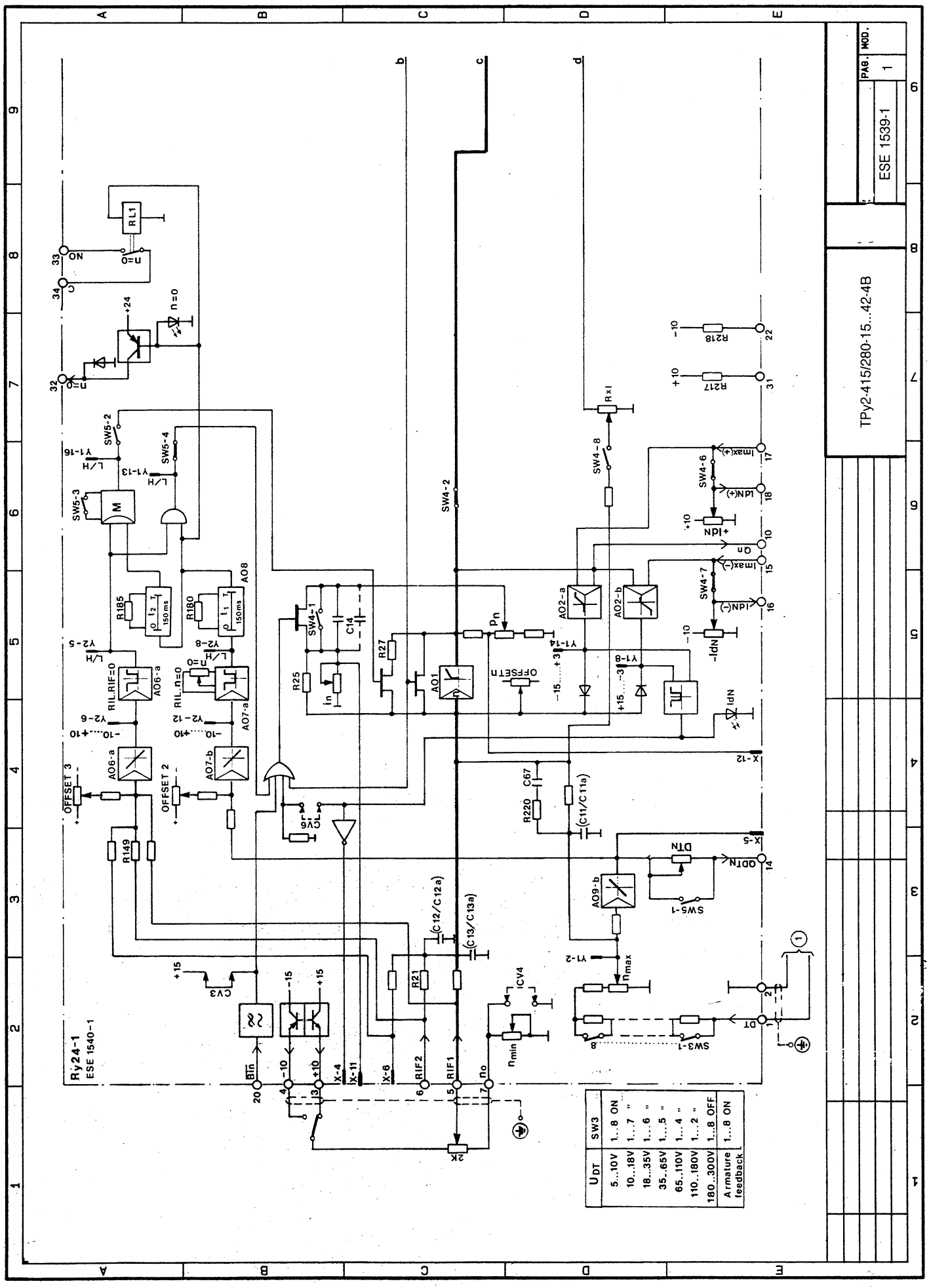


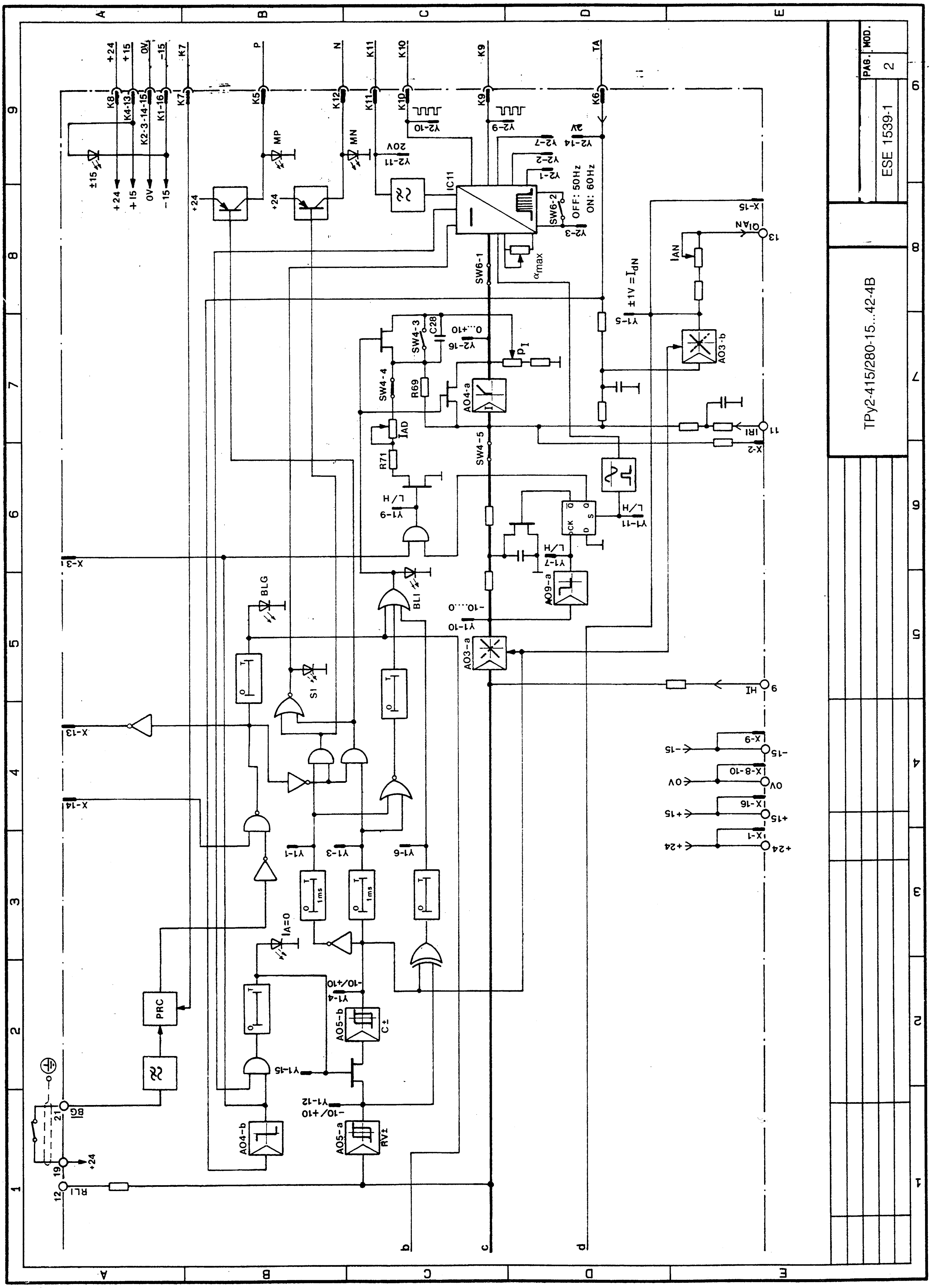
11. Elektrischer Anschluss / Electrical wiring / Raccordement électrique / Schema tipico di allacciamento

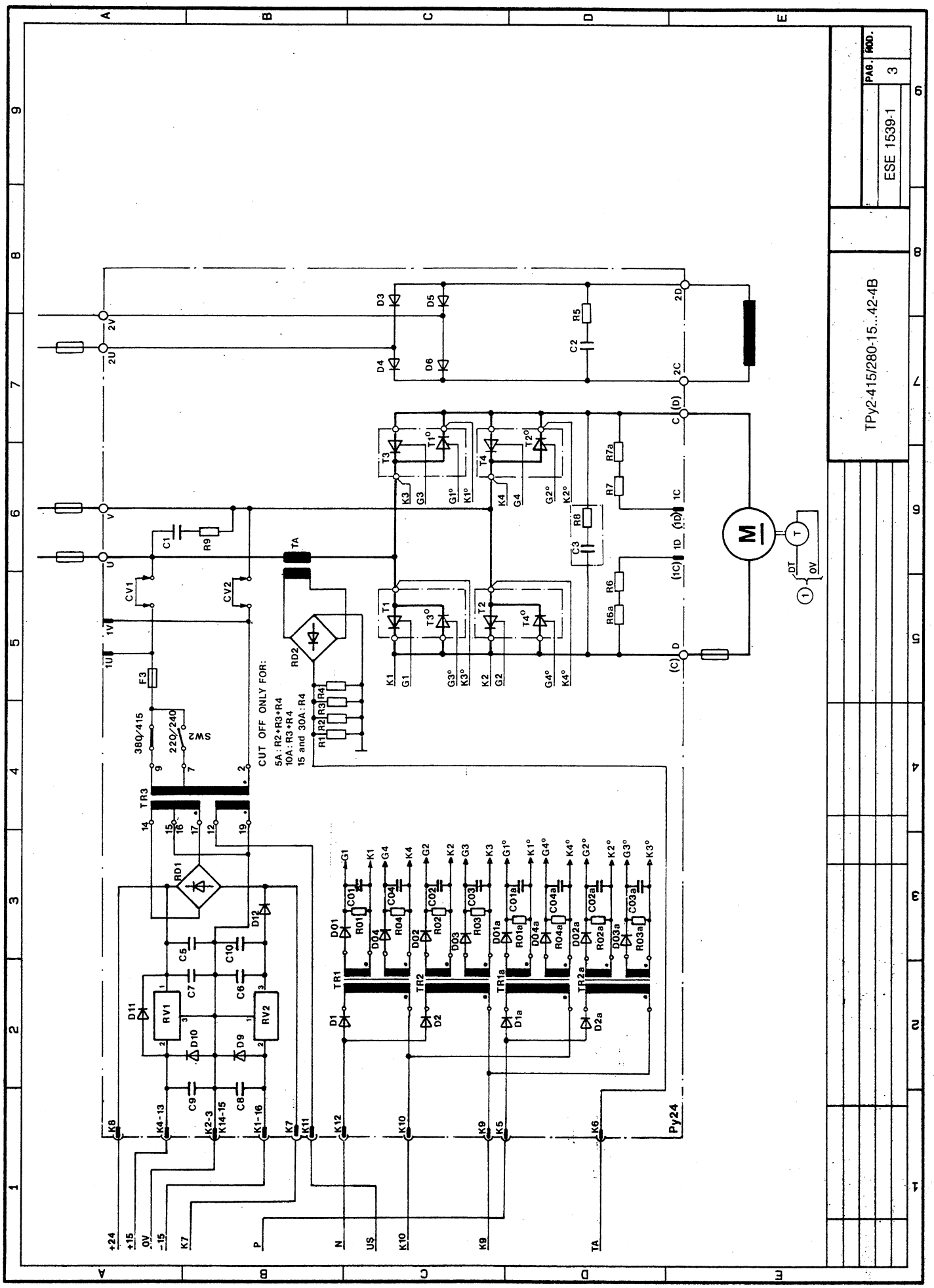



—S0 = Not - Aus / Emergency stop / Arrêt d'urgence / Emergenza
—F7 = Motorschutz / Motor protection / Protection moteur / Protezione termica motore
—S1 = Aus / Off / Arrêt / Arresto
—S2 = Ein /On / Marche / Marcia
—F3 = Feldausfall / Field loss / Manque d'excitation / Mancanza eccitazione
① = Not - Aus / Emergency stop / Arrêt d'urgence / Emergenza
② = Ein / Aus / On / Off / Marche / Arrêt / Marcia / Arresto
③ = Netz / Mains / Réseau / Rete
Anschlussbild / Wiring diagram / Schéma de raccordement / Schema di allacciamento
TPy2-...-4B
PAG. 2
MOD. N1
L01
L00
-S0
-K1M
-K1
-F7
-S1
-S2
-K2T
-K1M
-F3
-K2T
-K2T
-G1
n≠0
-Z1
-Z2
-Z3
-K1
-K1M
-K2T

12. Blockschaltbild / Block diagram / Schéma de fonctionnement / Schema a blocchi




PAG.
MOD.
2
ESE 1539-1
TPy2-415/280-15...42-4B



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