Parameter No. 52 **Jog Deceleration Value**

Parameter Selection: 0.1 - 360.0 s

Initial Setting: 20.0

Description: When parameter 54 is a '0' then Jog Deceleration Time can be set by scaling up the jog Hz to the maximum Hz and use the following formula:

$$\text{Param52} = \frac{\text{Jog Deceleration Time (s)} * \text{Max Hz (param4)}}{\text{Jog Hz (param 8)}}$$

When parameter 54 is a '1' then use the following formula:

$$\text{Param52} = \sqrt{\frac{\text{Maximum Hz}}{\text{Jog Hz}}} * \text{Jog Deceleration Time (s)}$$

Parameter No. 53 **Jog Acceleration Selection**

Adjustment Range: '0' - Linear Acceleration
'1' - S-Curve Acceleration

Initial Setting: '0' - Linear Acceleration

Description: When the S-Curve Jog Acceleration is selected, acceleration will begin and end slowly, refer to fig 9h.

Parameter No. 54 **Jog Deceleration Selection**

Adjustment Range: '0' - Linear Deceleration
'1' - S-Curve Deceleration

Initial Setting: '0' - Linear Deceleration

Description: When the S-Curve Jog Deceleration is selected, Deceleration will begin and end slowly, refer to fig 9l.

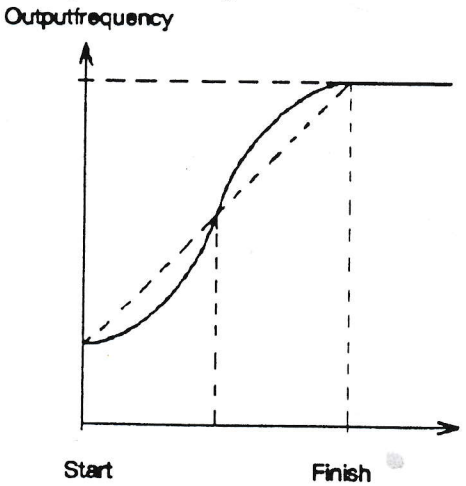

Fig.:9h; S-Curve for Acceleration

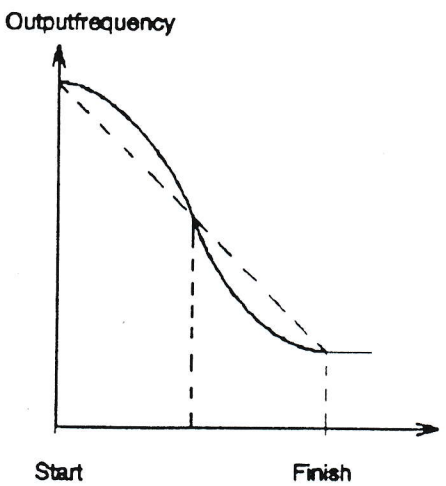

Fig.: 9l S-curve for Deceleration

Parameter No. 55 **Current Limit Deceleration Rate**

Parameter Selection: 0-100 Hz/s

Initial Setting: 90 Hz/s

Description: When the output current attempts to exceed the preset current limit (parameter 5), the motor speed will decrease at a predefined adjustable rate. Adjustements of this function can suppress instability of current that could cause an IET trip during a current limit condition. The amount of adjustement lower or higher will depend on all application parameters such as motor, controller kW, application load, line voltage etc. If adjusting parameter 55 will not correct the condition, parameter 1 (Acceleration Time) and 5 (preset Current Limit) should be adjusted.

Parameter No. 56 **Starting into a Rotating Motor**

Parameter Selection: '0' = Enable
'1' = Disable (Quick Start)

Initial Setting: '0' = Enable

Description: When a '0' is selected for this parameter, the controller can start into a rotating motor without causing an IET trip. When the motor speed is very low , it takes approximately 0,5 seconds to measure the speed before the controller can go into a start condition. The delay can be avoided by disabling the "start into a rotating load feature" by selecting a '1.

Parameter No. 57 **MS/MOP Terminals Selection**

Parameter Selection: '0' = Multi Speed Preset
'1' = Static MOP

Initial Setting: '0' = Multi Speed Preset

Password: Second Password

Description: When a Remote Control '1' is selected in parameter 0, parameter 57 can be changed (when a '0' is selected in parameter 0, the Multi Speed Preset is working). When a '1'is programmed in parameter 57, terminals 17 and 18 can be used for the Static MOP. When terminal 17 is connected to terminal 12, the output frequency will increase with the same acceleration rate as parameter 1. When terminal 18 is connected to terminal 12, the output frequency will decrease with the same deceleration rate as parameter 2. When both terminals 17 and 18 are opened or closed simultaneously, the output frequency will not change and is held constant.

Parameter No. 98 **Software Version**

Description: You can read the software version in this parameter.

Parameter No. 99 **Initial Factory Settings**

Parameter Selection: '0020' for European initial Setting

Initial Setting: '0020' for European initial Setting

Description: This function has two purposes: to quickly return all function settings to the initial factory values or to determine if any factory settings have been changed. If the value for parameter 99 is 'FF20' instead of '0020' some parameters have been changed. Access to the second menu (Function 6) is not recognized as a change in the '0020'/'FF20' determination.
This function is protected by password '1215' to prevent unauthorized entry. (Refer to chapter 'Operation and PROGRAMMING').

Note: Programming of '0020' for parameter 99 will result in following:

- Parameter 0 through 57 = Initial European factory settings
- RUN/JOG key = RUN
  FWD/REV key = FWD
- AUTO/MAN key = MAN
- IET history = cleared

10.0 START-UP

CAUTION
The unit should be disconnected from the line supply before any manipulation. Use a voltmeter to check the intermediate circuit voltage at terminals 147 and 45. The units must not be touched until the voltage is less than 50VDC. Discharge of the intermediate circuit capacitor takes approximately 2 minutes.

10.1 Preparatory Steps

- Install the equipment options in accordance with the section 'Equipment Options'.
- Check the installation: (see section: 'Installation').
  * It is essential to observe and allow for all the national specifications and provisions relating to the installation and operation of electrical systems.
  * Check the rated data, function and circuitry of the line input fuses.
  * Check all the terminal connections to ensure that they are tight.
  * Check of all safety devices such as emergency stop switches etc. to ensure that they operate properly. (If the 'Function Loss' unit control input is connected, the factory-installed wire jumper at the appropriate unit terminals must be removed).
  * Check all wiring for set point input.
  * Check all wiring for control connections (it is not permitted to connect different ground potentials of the controller as this may result in short-circuits).
  * Check the motor and equipment ground.
- Check all equipment for mechanical damage. (Use clean, dry compressed air with a maximum gauge pressure of 1 bar in order to clean any metallic installation residues from the equipment).
- Check that line voltage and equipment voltage are properly matched.
- Check the line input terminals as well as the motor terminals for shorting to ground.
- Check that the motor and equipment rated data are matched.
- Check whether the motor is correctly connected.
- Check the motor windings for shorting to ground.

10.2 Test Equipment

Use of the operating data display for measuring output frequency, output voltage and percentage of the nominal output current is recommended for recording the actual equipment output data. This measurement has an accuracy of +/- 15%. The intermediate circuit voltage is registered by a red LED on the PSBD card. The LED lights up as soon as an intermediate circuit voltage exists.

CAUTION: For safety reasons, the intermediate circuit voltage should be checked with an external voltmeter before performing any work on the equipment.

Should it be necessary to accurately measure the output variables, use of a fundamental voltmeter, of a clip-on digital current measuring instrument and direct measurement of motor speed using a hand tachometer is recommended.

CAUTION: When measuring the equipment output variables with other instruments, considerable inaccuracies in the results of the measurements are likely by virtue of the non sine-shaped output voltages, variable output frequencies or motor slip.

10.3 Settings for Standard Applications

The procedure described here relates to operating the unit by means of the sealed keyboard. It also applies by analogy when using an external control (Remote Control). First of all read the section 'Operation and PROGRAMMING' before continuing start-up.

Read the section 'Description of Parameters' and in this way acquire an overview of the various application features, setting facilities and setting ranges of the inverter.
Compare the possible application features and their factory setting (in particular in respect of special requirements such as synchronous motor, variable output torque, reversal of direction of rotation not permitted etc) with the requirements of the installed drive, and take such settings into consideration before start-up with motor.

- Remove the front housing cover.
- Enable the setting of parameters by moving the plug-in jumper on the controller board from position 'J6' to 'J5' (factory-set position 'J5').
- Connect a voltmeter to the intermediate circuit terminals 147 (+) and 45 (-). (Range: >650V).
- Switch on the line voltage:
  The automatic self-diagnosis of the unit is activated (see section: 'Trouble-shooting'). The message SELF appears in the operating data display during self-diagnosis. If there is no electronic equipment fault, the two-digit display 'PGM No./MONITOR' goes out and the preset output frequency appears in the four-digit display panel.
- If more than six months have passed since delivery of the equipment, the unit should be left in this state for 15 minutes. This is necessary for forming the intermediate circuit capacitors.
- Check whether the no-load voltage at the intermediate circuit agrees with the values in the table below, taking into account the line voltage:

Line input voltage	Bus voltage at terminals 147 and 45 at	
	No load:	nominal motor load:
230 VAC	325 VDC	310 VDC
380 VAC	540 VDC	515 VDC

- In this case the equipment output is switched off.

- Press the appropriate switch keys to select the following unit control:

  RUN: (Locking-in of start command).
  FWD: (Forward direction of rotation).
  MAN: (Set point selection from keyboard).

  The relevant red LED's indicate the actual pre-selection.

- Should the pre-selected speed shown in the four-digit display be greater than 5 Hz, press the bottom 'SPEED/DATA' key until the value '005.0' appears. Store this value by pressing the 'SET' key.

- Start the unit with the 'START' key:
  The illuminated, green LED 'RUN' indicates in this case that the unit output is activated. The symbol 'H' for hertz appears in the two-digit display 'PGM No./MONITOR'. The motor accelerates at the acceleration ramp to the minimal output frequency. This is indicated in the operating data display.

- Check the direction of rotation of the motor. The direction of rotation of the motor can be altered by switching over any two motor leads when the unit is not connected to the line supply.

- The factory-set starting torque setting (torque boost) may be too low for applications with a high break-away torque. The value of parameter no. 7 should then be increased far enough for the drive to reliably start. (An excessive torque boost may result in sharp starting as well as unnecessary heating of the motor.

- Increase the output frequency with the top 'SPEED/DATA' key up to the maximum output frequency. When performing this step, the unit output current should range within the set limits.

- Setting of acceleration and deceleration ramp. If the acceleration time is set too short, the drive will operate at the current limit. As a result, acceleration will be sharp. To prevent this, increase the set time. If the deceleration time is set too short, the drive will decelerate at its intermediate circuit voltage limit. This will result in sharp deceleration. This situation can be remedied by extending the deceleration time or by using a braking unit.

- Functional check of control functions.

- Functional check of emergency stop devices.

- Disconnecting the measuring instruments, switching over the plug-in jumper on the controller board from position 'J5' to 'J6', attaching the front cover to the casing and record in writing all the set parameter values, this completes the start-up.

11.0 TROUBLE-SHOOTING the CONTROLLER

CAUTION
The unit should be disconnected from the line supply before any manipulation. Use a voltmeter to check the intermediate circuit voltage at terminals 147 and 45. The units must not be touched until the voltage is less than 50VDC. Discharge of the intermediate circuit capacitor takes approximately 2 minutes.

11.1 Test Equipment

Measuring the unit output variables by means of commercial measuring instruments involves inaccuracies by virtue of the non sine-shaped output currents and voltages. Wherever possible, the internal display should be used to measure the output variables.
Exact measurement of the output voltage with an external instrument is only possible with a fundamental voltmeter. The output current should be measured with a digital clip-on current measuring instrument.

11.2 General Explanatory Notes

Each time the line supply is switched on, an internal self-diagnosis is activated. The period for this test is approximately 10 seconds. The message 'SELF' appears in the four-digit operating data display during this diagnosis. If an electronic equipment fault is detected during this test, a coded error message appears in the two-digit display 'PGM No./MONITOR'.
Rectifying such a fault away from the factory is only possible by replacing an entire printed circuit board. In such a case, please contact your nearest RELIANCE ELECTRIC office.
Following successful completion of the self diagnosis, the operating data display shows the setting of the pre-selected output frequency (factory set to: '005.0'). The 'PGM No./MONITOR' display goes out.

11.3 Preparatory Instructions

It is recommended to perform a visual inspection of the equipment prior to rectifying a fault, and at the same time to check that all the cable connections are tight and that all the electrical connections are in proper condition.

If possible, the function of the unit should be checked by operating the unit with the keyboard (parameter no. 0 as the value '0') with the motor disconnected.

The equipment should be installed and connected electrically in accordance with the proposals in the section 'Installation'. The unit should be operated only within the limits of the values stated in the section 'Technical Data'.

If an external set point selection is used, once again check the position of the corresponding jumpers for selecting the set point signal on the controller board in accordance with the description in the section 'Installation'.

A fault trip (IET) can be recognized by the relevant error code being shown in the four-digit operating data display. The IET relay on the controller board and its contact outputs are activated in the event of a fault trip.

The display facilities in the 'Error Code Display' operating mode are described in the section 'Operation and PROGRAMMING'.

Use the following error code table to obtain useful information regarding rectifying faults if such an error occurs.

Further useful information can be obtained by contacting your nearest RELIANCE ELECTRIC office by phone, telex or fax.

11.4 Replacement Parts

The following tables contain the available and recommended stock spare parts for BMI/GMI units.

Recommended spare parts for Invertron BMI (European and American versions):

Unit type	Description	mounted per unit	Reliance Part No.
BMI-S04 up to BMI-S15	Regulator board	1	756.78-10
BMI-S04 up to BMI-S15	Foil keypad	1	757.53-00
BMI-S04 up to BMI-S15	Driver card	1	756.79-10
BMI-S04 up to BMI-S11	Diode rectifier	1	750.34-05
BMI-S15	Diode rectifier	1	750.34-06
BMI-S04	Transistor module	1	750.51-10
BMI-S07	Transistor module	1	750.51-11
BMI-S11	Transistor module	1	750.51-12
BMI-S15	Transistor module	1	750.51-13
BMI-S11 and BMI-S15	Fan	1	758.91-00
BMI-S04 up to BMI-S11	MOV	1	750.61-03
BMI-S15	MOV	1	750.61-00

Recommended spare parts for Invertron GMI (European and American versions):

Unit type	Description	mounted per unit	Reliance Part No
GMI-S02 up to GMI-S31	Regulator board	1	756.78-10
GMI-P09 up to GMI-P38	Regulator board	1	756.78-11
GMI-S38 up to GMI-S104	Regulator board	1	757.54-00
GMI-P44 up to GMI-P136	Regulator board	1	757.54-01
GMI-SXX & GMI-PXX	Foil Keypad	1	757.53-00
GMI-S02-S31,GMI-P09-P38	Driver card	1	756.79-11
GMI-S38-S56;GMI-P44-P70	Driver card	1	757.56-00
GMI-S70-S104,GMI-P88-P136	Driver card	1	813.17.00
GMI-S02-S13, GMI-P09-P13	Diode rectifier	1	750.34-00
GMI-S16, GMI-P16-P23	Diode rectifier	1	750.34-07
GMI-S23	Diode rectifier	1	750.34-08
GMI-S31, GMI-P31-P38	Diode rectifier	1	750.34-09
GMI-S38-S56;GMI-P44-P70	Diode rectifier	1	135.57-01
GMI-S70,S88, GMI-P88-P104	Diode rectifier	3	135.50.13
GMI-S104, GMI-P136	Diode rectifier	3	135.55.11
GMI-S02-S06, GMI-P09	Transistor - module	1	750.51-20
GMI-S09, GMI-P13	Transistor - module	1	750.51-21
GMI-S13-S16, GMI-P16	Transistor - module	1	750.51-22
GMI-S23-S31, GMI-P31-P38	Transistor - module	3	750.51-23
GMI-S38, GMI-P44	Transistor - module	3	136.12-00
GMI-S44/S56,GMI-P56/P70	Transistor - module	3	136.11-00
GMI-S70, GMI-P88	Transistor - module	6	136.14.00
GMI-S88, GMI-P104	Transistor - module	6	136.13.00
GMI-S104, GMI-P136	Transistor - module left	3	136.10.00
GMI-S104, GMI-P136	Transistor - module right	3	136.10.01
GMI-S13-S16, GMI-P13-P23	Fan	1	758.91-01
GMI-S23-S31, GMI-P31-P38	Fan	1	758.91-02
GMIS38-S104, GMIP44-P136	Fan	1 (2)	921.90-00
GMI-S02-S23, GMI-P09-P31	MOV	1	750.61-01
GMI-S31, GMI-P38	MOV	1	750.61-02
GMIS38-S104, GMIP44-P136	MOV	3	123.39-51
GMI-S02 up to GMI-S06	DC Bus fuse	1	754.33-00
GMI-S09-S16, GMI-P09-23	DC Bus fuse	1	754.33-01
GMI-S23-S31, GMI-P31	DC Bus fuse	1	754.33-02
GMI-P38	DC Bus fuse	1	
GMI-S38-S56, GMIP44-P70	DC Bus fuse	1	553.58-09

GMIS38-S104, GMIP44-P136	Power supply fuse	2	553.02-00
GMI-S38-S56, GMI-P44-P70	DC Bus Capacitor	4	212.62-00
GMI-S70-S88, GMI-P88-P104	DC Bus Capacitor	6	212.62-00
GMI-S104, GMI-P136	DC Bus Capacitor	8	212.62-00
GMIS38-S56, GMIP44-P70	Transistor-Snubber-Print	3	804.42-01
GMIS70-S104, GMIP88-P136	Transistor-Snubber-Print	1	813.18-00

Recommended spare parts for GMI 500V

Unit type	Description	mounted per unit	Reliance part No
GMI-506, 512, 523	Regulator board	1	756'78-10
GMI-506, 512, 523	Foil keypad	1	757'53-00
GMI-506, 512, 523	Driver card	1	756'79-12
GMI-506, 512	Diode rectifier	1	750'34-07
GMI-523	Diode rectifier	1	750'34-08
GMI-506, 512	Transistor -module	1	750'51-25
GMI-523	Transistor - module	3	750'51-26
GMI-512	Fan	1	758.91-01
GMI-523	Fan	1	758'91-02
GMI-506, 512	MOV	1	750'61-05
GMI-523	MOV	1	750'61-06
GMI-506, 512	DC Bus fuse	1	754'33-05
GMI-523	DC Bus fuse	1	754'33-06

Please contact your local RELIANCE ELECTRIC office for more information about spare parts.

11.5 Trouble-shooting IETs

Code	Type of IET	Possible Cause	Action
HU	High Bus Voltage	Input voltage too high	Check input voltage. If incorrect, add transformer.
		Deceleration time too short	Increase deceleration time. Install DB kit.
LU	Low Bus Voltage	Input voltage too low	Check input voltage. If incorrect, add transformer.
			Check DC Bus voltage. If incorrect, possible diode cube defect.
OC-A	Overcurrent - A	Acceleration time too short	Increase acceleration time.
		Momentary Overload	Motor overload, reduce load on motor.
		Torque boost to high or V/Hz too high	Adjust parameter No.7 and/or 11.
OC-D	Overcurrent - D	Deceleration time too short	Increase deceleration time.
OC-G	Overcurrent - G	Output line-to-ground	Check isolation between ground and output terminals Possible leakage current sensor defect.
OC	Overcurrent	Output line-to-line	Check isolation among each output line.
		Bus voltage line-to-line	Possible PS&BD board defect. Possible Hall Effect current sensor defect.
		Momentary overload	Motor overload, reduce load on motor.
		Torque boost or V / Hz too high	Adjust parameter No.7 and/or 11.
OL	Overload	Internal thermal overload	Reduce load on motor. Reduce Torque boost adjustment.
OH	Overheat	Cooling fan fault	Check cooling fan.
LdIP	Line dip	AC power supply interrupt	Check input voltage. If incorrect, install line reactor.
CPU	CPU error	Microprocessor logic error	Turn power OFF for about 10s, then turn power ON. If not corrected, possible Regulator board defect.
Err1	Error 1	Memory error	Turn power OFF for about 10s, then turn power ON. If not corrected, possible Regulator board defect.
		Parameter out of range	Scroll function list for incorrect parameter (4-digit display shows '----'). Readjust parameter.
Err2	Error 2	Error in Input Logic	Possible Regulator board defect.
FL	Function Loss is open.	Function loss input	Check external interlocks at terminal 11-12. Check for external short circuit between terminal 11 and 19.
CS	Coast Stop is open	Function loss input	Check external interlocks at terminal 11-12. Check for external short circuit between terminal 11 and 19.

11.6 Typical Wiring Diagram GMI-S02 - GMI-S31 / GMI-P09 - GMI-P38

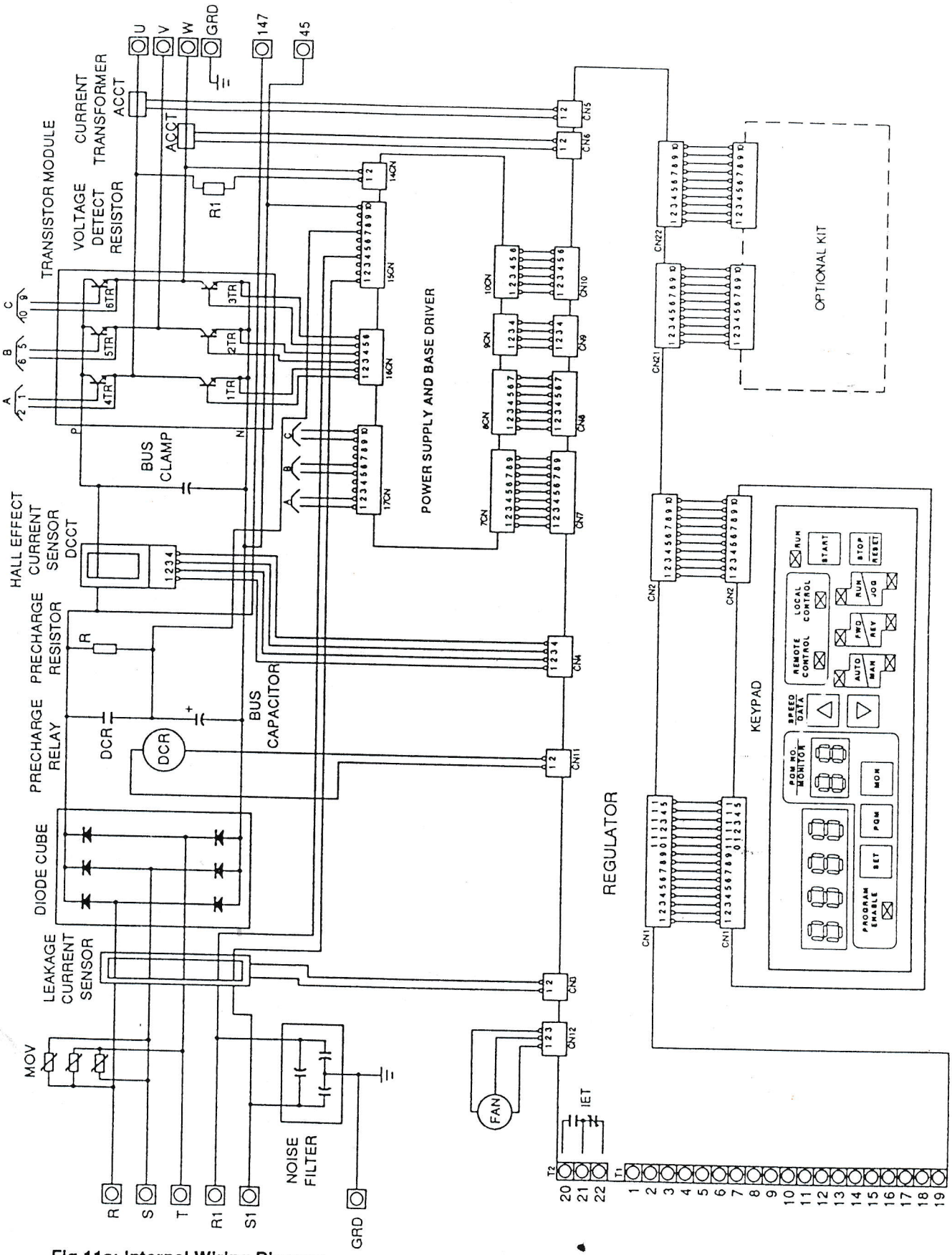

Fig 11a: Internal Wiring Diagram

11.7 Typical Wiring Diagram GMI-S38 - GMI-S56 / GMI-P44 - GMI-P70

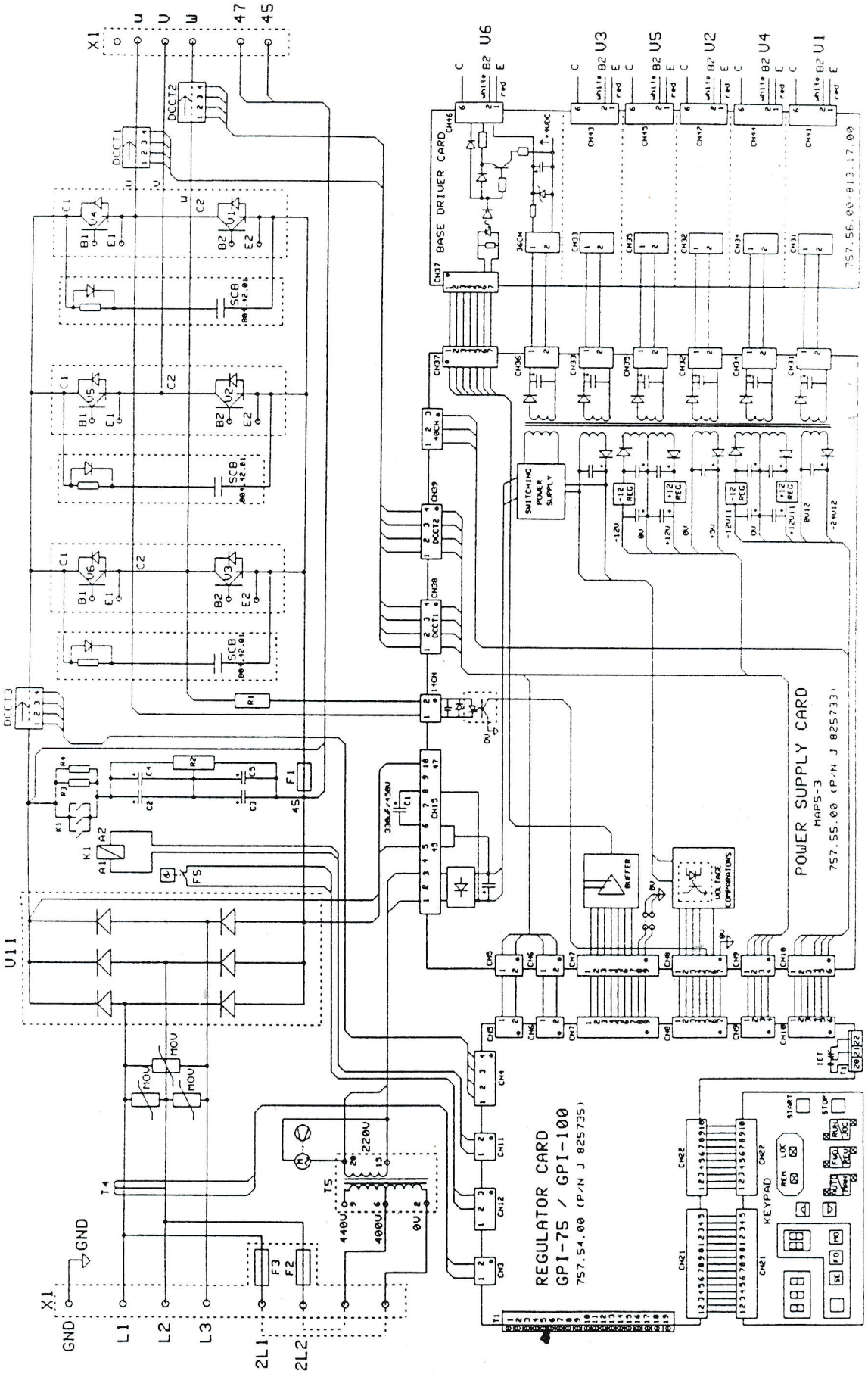

Fig 11b: Internal Wiring Diagram

11.8 Typical Wiring Diagram GMI-S70 - GMI-S104 / GMI-P88 - GMI-P136

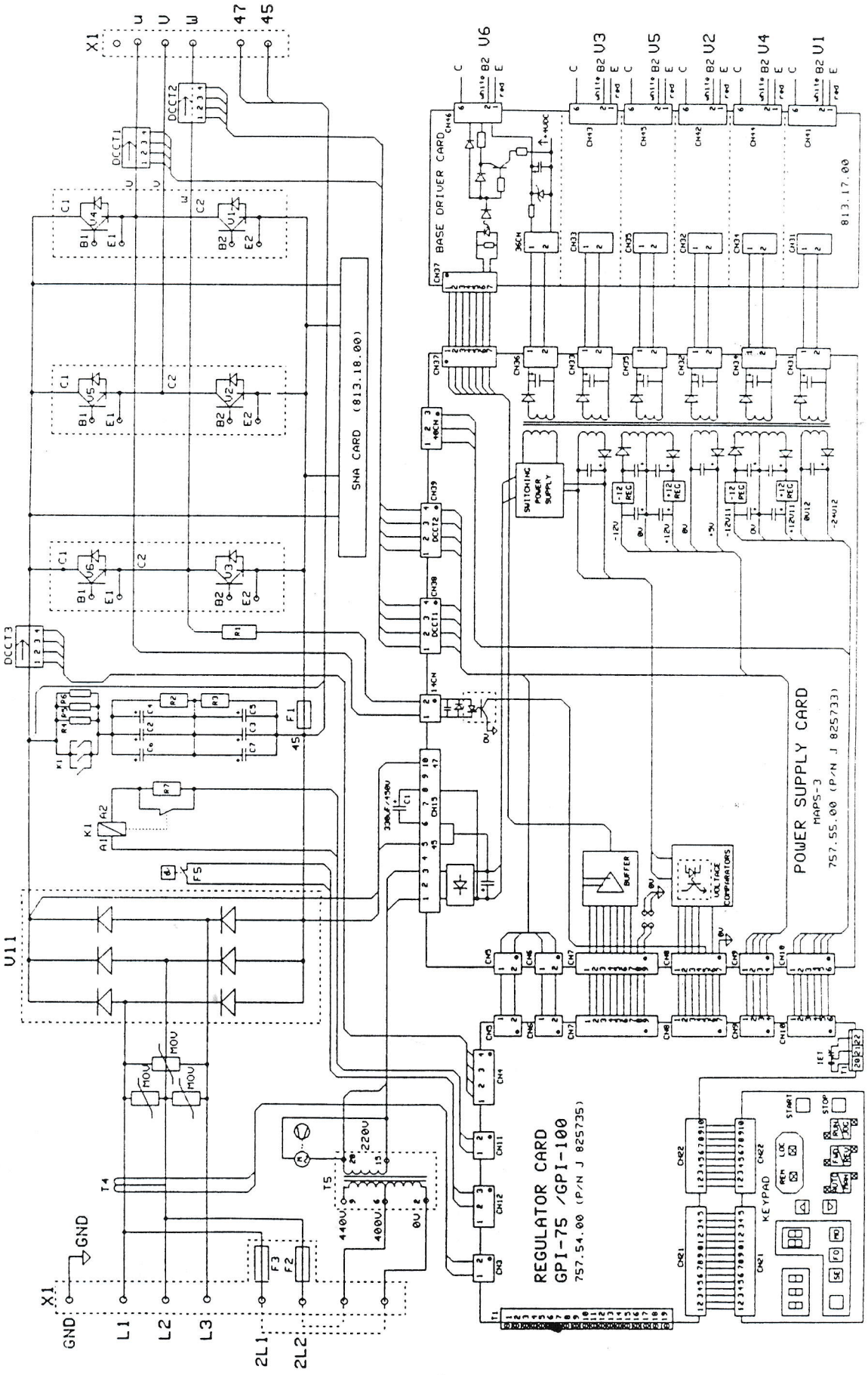

Fig 11c: Internal Wiring Diagram

12.0 BRIEF DESCRIPTION

12.1 Function of Sealed Keypad with the Selection 'Local Control'

The following operating states are possible:

- 'Stop' The unit output is not activated. The operating data display shows the pre-selected output frequency.
- 'Run' The unit output is activated. The green 'RUN' LED lights up.
- 'PROGRAMMING' This operating state is activated by pressing the 'PGM' key. The unit switches again to the 'Stop' operating state when the 'MON' key is pressed.
- 'Error Code Display' This operating state is activated by pressing the 'MON' key if the unit is not in the 'Run' operating mode. The unit switches again to the 'Stop' operating state when the 'STOP/RESET' key is pressed.

Display possibilities of the two-digit 'PGM NO.MONITOR' Display:

- Shows the parameter no. in the 'PROGRAMMING' operating mode
- Shows the symbol of the displayed output parameter in the 'Run' operating mode (H - frequency in Hz, U - voltage in V, PA - current as percentage of unit rated current and Sp - motor speed in rpm)

Display possibilities of four-digit operating data display:

- Shows the actual values of H, U PA and Sp in the 'Run' operating mode
- Shows the pre-selected frequency set point in the 'Run' or 'Stop' operating mode
- Shows an error code in the 'Error Code Display' operating mode

Pre-selection facilities with the switch keys on the keypad:

- 'AUTO/MAN' switch key: External/internal set point selection
- 'FWD/REV' switch key: 'Forward/Reverse' direction of rotation
- 'RUN/JOG' switch key: Locking-in of Start command with 'Run' setpoint/Jog mode with Jog' set point

PROGRAMMING: (Proceeding from the 'Stop' operating mode)

- Preselection of output frequency
  'SPEED/DATA' keys for setting the desired output frequency
  'SET' key for storing the value

- Setting a parameter
  'PGM' key for pre-selecting the parameter
  'SPEED/DATA' keys for setting the required parameter value
  'SET' key for storing the value

- Enlarging to the second menu
  'PGM' key for setting parameter no. 6
  'SET' key for approx. 3 seconds until operating data display flashes
  'SPEED/DATA' keys for entering the code number 0306
  'SET' key for storing the code number (red 'PROGRAM ENABLE' LED lights up)
  'SPEED/DATA' keys for setting '1' for parameter no. 6
  'SET' key for storing this value

12.2 Record of User's Parameter Selections/Adjustments

Parameter	Description	Selection / Adjustment Range	Initial Setting	Actual Setting
0	Local / Remote-Operation Control (Sel. of 2 or 3 only available if SCP-Card is installed)	0 - Local Control 1 - Remote Control/Terminal Strip 2 - Remote Control/RS-232C 3 - Remote Control/I/O-Port	0	1
1	Acceleration Time	5.0 - 360.0s	20.0	5
2	Deceleration Time	5.0 - 360.0s	20.0	1.5
3	Minimum Hz	5.0 - 60.0Hz	5.0	5
4	Maximum Hz	15.0 - Overfrequency limit (para 38)	50.0	50
5	Current Limit	50 - 150% Current for S version 50 - 115% Current for P version	150 115	150
6	Expand to second Menu (First Password necessary)	0 - First Menu Only 1 - Expand to Men	0	1
7	Manual Torque boost	0 - 10% voltage	2	2
8	Jog Frequency	0.0 - 60.0Hz	5.0	10
9	Stop Mode Selection	0 - Coast-to-rest 1 - Ramp-to-rest	0	1
10	Automatic Flux Control	0 - 5% Rated Voltage	0	0
11	Base-Frequency Selection	30.0 - 400.0Hz	50.0	45
12	Electronic Thermal Overload Selection	0 - Normal Motor 1 - Forced Cooled Motor	0	0
13	Electronic Motor Overload Level	20 - 100% Current	100	100
14	S-Curve Function for Acceleration	0 - linear Acceleration 1 - S-Curve Acceleration	0	✓
15	S-Curve Function for Deceleration	0 - linear Deceleration 1 - S-Curve Deceleration	0	✓
16(1)	Multi-Speed Preset 1	0.0 - 400.0Hz	5.0	✓
17(1)	Multi-Speed Preset 2	0.0 - 400.0Hz	5.0	✓
18(1)	Multi-Speed Preset 3	0.0 - 400.0Hz	5.0	✓
19	Avoidance Frequency 1	0.0 - 400.0Hz	0.0	
20	Avoidance Frequency 2	0.0 - 400.0Hz	0.0	
21	Avoidance Frequency 3	0.0 - 400.0Hz	0.0	
22	Avoidance Frequency Band	0.2 - 10.0Hz	0.2	
23	Variable Torque Curve	0 - Constant Torque Curve 1 - Variable Torque Curve	0	
24(2)	DC - Braking Operation Time	0.0 - 10.0s	0.0	2
25(3)	DC - Braking Voltage	0 - 20% Voltage	0	✓
26(3)	DC - Braking Start-Frequency	0.5 - 10.0Hz	1.0	✓
27	Line-Dip-Ride-Through	15 - 500ms	15	✓
28	Relay 1 (Only with RMI-Card)	0 - Not Used 1 - Zero Speed Detect 2 - Input Contactor 3 - Output Contactor 4 - Frequency Level Detection 1 5 - Frequency Level Detection 2	0	✓
29	Relay 2 (Only with RMI-Card)	6 - Current Level Detection 7 - Reverse Rotation 8 - DC - Braking Operation 9 - Reserved	0	
30(4)	Slip Compensation	0.0 - 5.0Hz	0.0	

Parameter	Description	Selection / Adjustment Range	Initial Setting	Actual Setting
31(5)	Inverse Reference (Second Password Necessary)	0 - Normal 1 - Inverse	0	
32	Function Loss Selection (Second Password Necessary)	0 - IET at Function Loss 1 - Coast-to-rest without IET	0	
33(6)	Frequency Level Detection 1	0.5 - 405.0Hz	0.5	
34(7)	Frequency Level Detection 2	0.5 - 405.0Hz	0.5	
35(8)	Current Level Detection	30 - 150% Current	100	
36(9)	Reverse Disable	0 - Forward/Reverse Enable 1 - Reverse Disable on Keypad	0	
37(10)	Automatic Disable on Local Control	0 - Auto/Man Enable 1 - Auto Disable on Keypad		
38	Over frequency Limit (Second Password Necessary)	50.0 - 405.0Hz	90.0	
39	DC Offset Enable (Second Password Necessary)	0 - standard motor 1 - synchronous motor	0	
40	Auto-reset Enable (Second Password Necessary)	0 - Auto Reset Disable 1 - Auto Reset Enable	0	
41(11)	Auto-reset times	0 - 10 times	0	
42(12)	Auto-reset Interval Time {4}	1 - 60s	1	
43	Extended Minimum Hz Range (Second Password Necessary)	0 - Disable (5-60Hz) 1 - Enable (0-60Hz)	0	
44	Extended Acceleration Time Range	0 - Disable (5,0-360,0s) 1 - Enable (0,1-360s,0)	0	
45	Extended Deceleration Time Range	0 - Disable (5,0-360,0s) 1 - Enable (0-60Hz)	0	
46	RPM Monitor Enable	0 - Disable 1 - Enable	0	
47	RPM Monitro Range Selection	0 - Disable (150-9999) 1 - Enable (0-9999)	0	
48	RPM Monitor Speed Selection	150 - 9999	1450	
49	Output Voltage Regulation Mode Selection	0 - Proportional to Input 1 - Fixed to Maximum Voltage (para 50)	0	
50	Maximum Voltage	190 - 230 V for BMI-types 380 - 460 V for GMI-types	220 V for BMI 380 V for GMI	
51	Jog Acceleration Value	0,1 - 360s	20,0s	
52	Jog Deceleration Value	0,1 - 360s	20,0s	
53	Jog Acceleration Selection	0 - linear Acceleration 1 - S-Curve Acceleration	0	
54	Jog Deceleration Selection	0 - linear Deceleration 1 - S-Curve Deceleration	0	
55	Current Limit Deceleration	0 - 100 Hz/s	90 Hz/s	
56	Start into Rotating Motor	0 - Enable 1 - Disable	0	
57(13)	MS/MOP Terminal Selection	0 - Multi Speed Preset 1 - Static MOP	0	
98	Software Version	contains the actual software release	Read only	
99	Initial Factory Setting (Third Password Necessary)	0020 - European Factory Setting FF20 - Changed Factory Settings	0020	

list of indices

(1) effective when 1 in parameter 0 and 0 in parameter 57 is selected.
(2) effective when 1 is selected in parameter 9.
(3) effective when a value greater than 0.0 is selected in parameter 24.
(4) effective when 0 is selected in parameter 39
(5) effective when 1 is selected in parameter 0, or when 0 is selected in parameter 0 while AUTO Mode on keypad is selected.
(6) effective when 4 is selected in parameter 28 or 29.
(7) effective when 5 is selected in parameter 28 or 29.
(8) effective when 6 is selected in parameter 28 or 29.
(9) effective when 0 is selected in parameter 0.
(10) effective when 0 is selected in parameter 0.
(11) effective when 1 is selected in parameter 40.
(12) effective when a value greater than 0 is selected in parameter 41.
(13) effective when 1 is selected in parameter 0.

1201 - 1
1203 - 2
1202 - 3.

532 — 11
— 12
534 — 13
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533 — 15

481 C1
482 C2
483 C3

421 U
423 V
422 W.