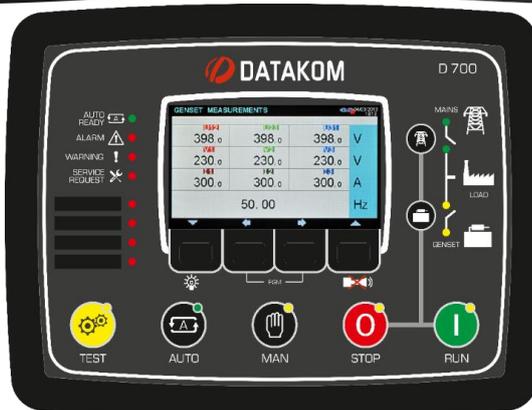
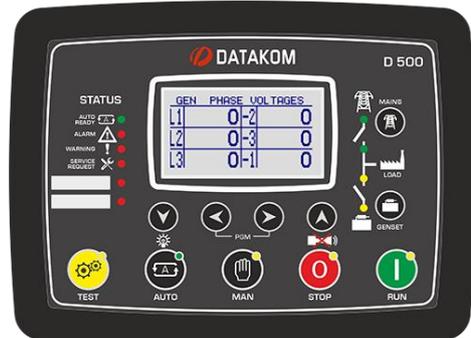
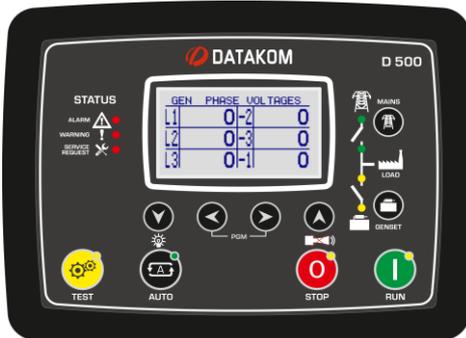
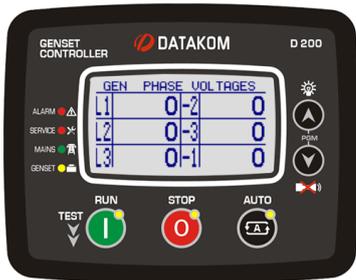
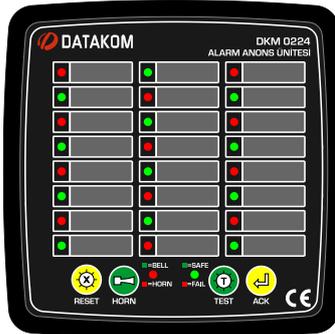




DKM-0224 NFPA110 APPLICATION MANUAL

FOR D-200 MK2 / D-300 MK2 / D-500LITE MK2

D-500 MK2 / D-700 MK2



RELATED DOCUMENTS

FILE NAME	DESCRIPTION
200_MK2_USER	D-200 MK2 User Manual
300_MK2_USER	D-300 MK2 User Manual
500LITE_MK2_USER	D-500LITE MK2 User Manual
500_MK2_USER	D-500 MK2 User Manual
700_MK2_USER	D-700 MK2 User Manual

TERMINOLOGY



CAUTION: Potential risk of injury or death.



WARNING: Potential risk of malfunction or material damage.



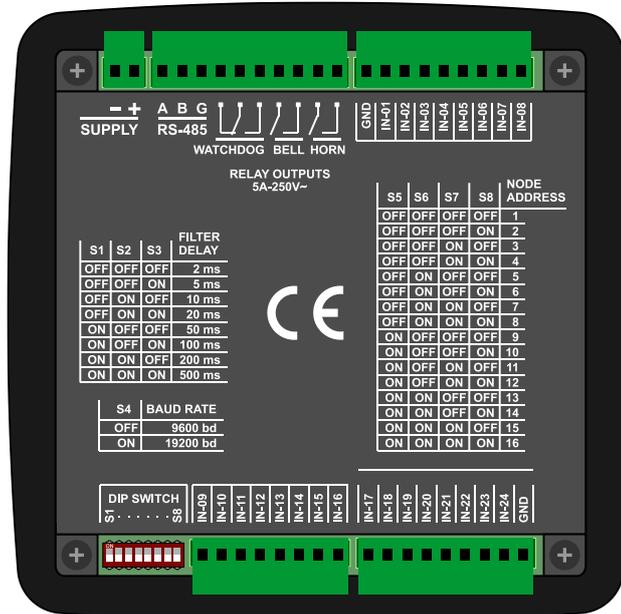
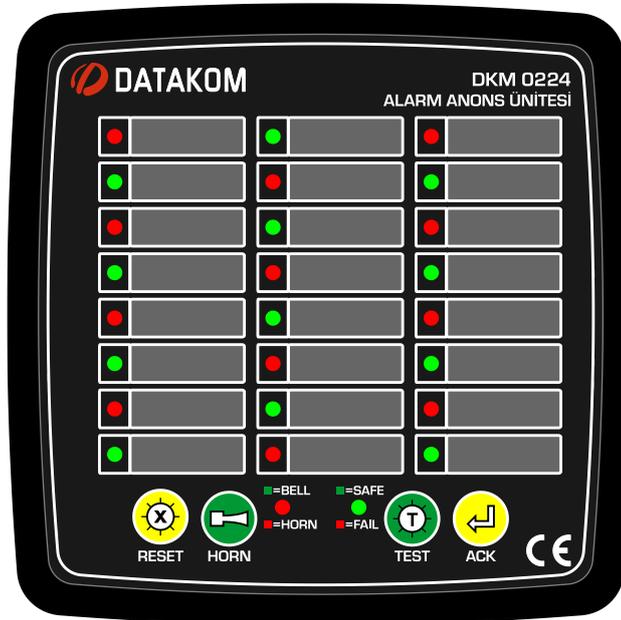
ATTENTION: Useful hints for the understanding of device operation.

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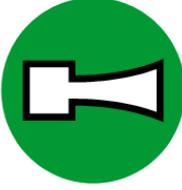
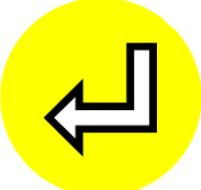
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1. INTRODUCTION

The DKM-0224 annunciator unit can communicate with D-200 MK2, D-300 MK2, D-500LITE MK2, D-500 MK2 and D-700 MK2 controllers over RS-485 Modbus RTU. It is useful for displaying alarms described in NFPA110 standards, and the statuses of the last 6 digital outputs of the controller.



2. PUSHBUTTON FUNCTIONS

BUTTON	FUNCTION
 <p data-bbox="280 600 379 633">RESET</p>	<p data-bbox="496 443 1398 584">If the pushbutton is pressed all fault leds turn off, Horn and Bell relays are released. If the fault signal still persists, the fault alarm re-appears again. This button is also used in settings menu.</p>
 <p data-bbox="288 898 384 931">HORN</p>	<p data-bbox="496 678 1410 931">If the pushbutton is pressed, all leds flash green and red in sequence, the internal buzzer sounds, Horn, Bell and Watchdog Relays turn on and off with a period of one second. During this test, if the pushbutton pressed for 3 seconds, the buzzer function can be disabled/enabled. By pressing the pushbutton again, module exits from the test. This button is also used in settings menu.</p>
 <p data-bbox="300 1193 373 1227">TEST</p>	<p data-bbox="496 1005 1369 1187">If the pushbutton is pressed, all leds turn-on with the pre-adjusted color. (If it is pressed again, the unit returns back to normal operation.) After pressing it short, if this button is pressed for 3 seconds, then the first Led flashes with the pre-adjusted color and the unit enters the settings menu.</p>
 <p data-bbox="304 1503 368 1536">ACK</p>	<p data-bbox="496 1330 1401 1471">If the pushbutton is pressed, fast flashing leds turn into slow flashing(or Steady On) state, the internal buzzer turns off. Horn and Bell relays are released. This button is also used for exiting the settings menu.</p>

3. SETTINGS OF DKM-0224

3.1 DIP-SWITCH SETTINGS

The main configuration of the unit is done with DIP switches located on back panel. There are 8 Dip Switch on the unit and the settings are described below.

4. Switch

BaudRate Setting:

0 → 9600 baud

1 → 19200 baud

5-6-7-8 Switch:

Modbus Adress Setting:

5 6 7 8

8 4 2 1

There are 16(1-16) addresses can be defined.

For example:

5(ON),6(ON),7(ON),8(ON)

$$1 + 8 + 4 + 2 + 1 = 16$$

5(ON),6(OFF),7(OFF),8(ON)

$$1 + 8 + 0 + 0 + 1 = 10$$

5(OFF),6(OFF),7(OFF),8(OFF)

$$1 + 0 + 0 + 0 + 0 = 1$$

3.2 SIGNAL LED RED/GREEN SETTINGS

Adjusted led colors can be checked by pressing the TEST pushbutton. (If the TEST pushbutton is pressed again, the unit returns back to normal operation) After that, if the TEST pushbutton is pressed long (for 3 seconds) first led flashes with the adjusted color. By pressing RESET pushbutton, signal leds can be selected from up to down, by pressing HORN pushbutton signal leds can be selected from left to right. The color of the signal can be adjusted by pressing the TEST pushbutton. After pressing the ACK pushbutton all leds are seen with the adjusted color. (If the ACK pushbutton is pressed again, the unit returns back to settings menu) After that, if the ACK pushbutton is pressed long (for 3 seconds) the unit saves all settings and exist from the menu.

3.3 BUZZER SETTINGS

If the HORN pushbutton is pressed, all leds flash green and red in sequence, the internal buzzer sounds, Horn, Bell and Watchdog Relays turns on and off with a period of one second. During this test, if the pushbutton pressed long (for 3 seconds) buzzer function can be disabled/enabled. By pressing the pushbutton again, the unit exists from the test.

4. SETTINGS OF D-XXX MK2 CONTROLLER

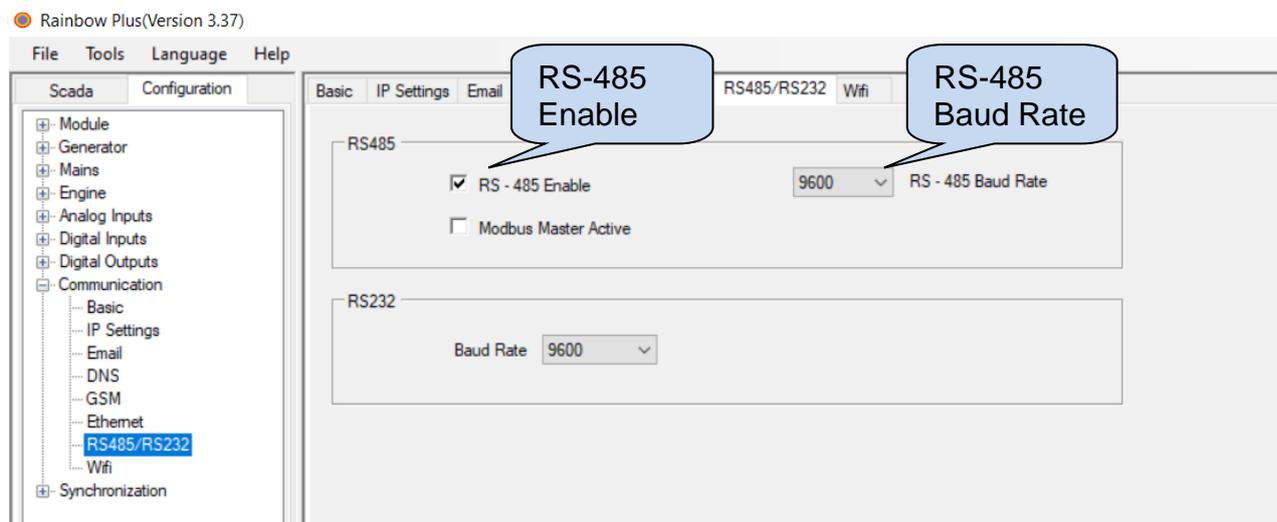
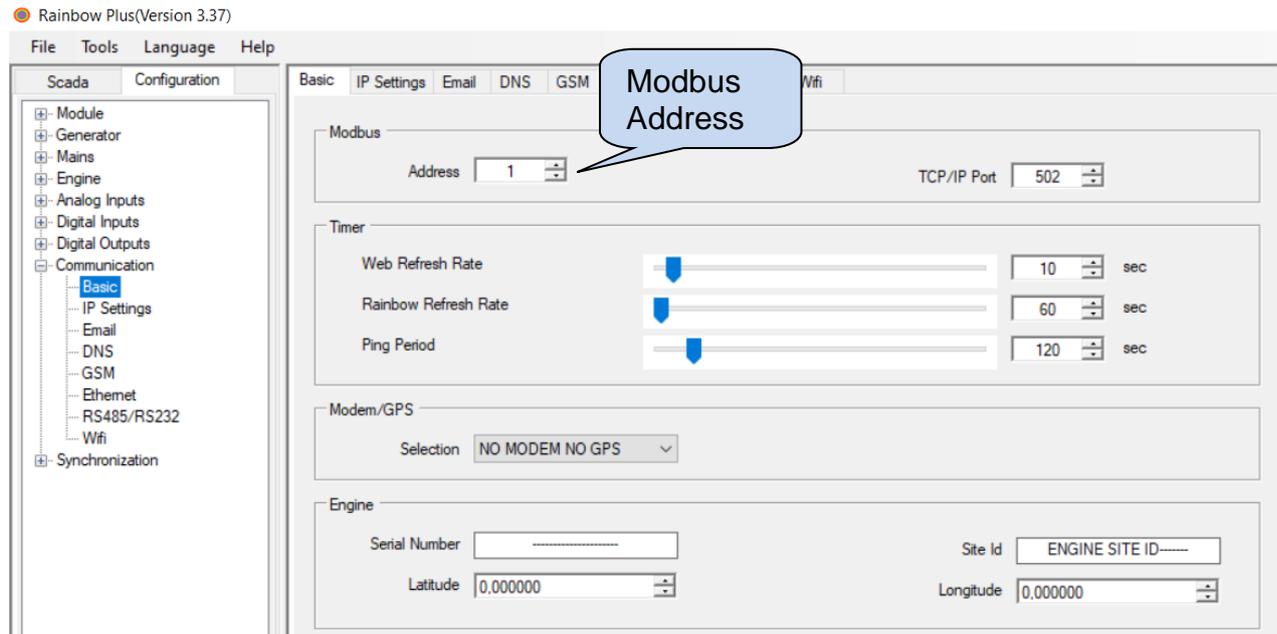
D-XXX MK2 controllers offer the possibility of MODBUS communication through RS485 plug-in module.

Related parameters are:

Modbus Slave Address

RS-485 Enable

RS-485 Baud Rate



5. NFPA 110 ALARM LIST

Alarm	Alarm Code in Controller	Alarm LED
Over Crank	098: Fail to Start	LED 1
Low water temperature	056: Low Engine Temp. (warning)	LED 2
High engine temperature pre-alarm	057: High Engine Temp. (warning)	LED 3
High engine temperature	057: High Engine Temp. (shutdown, loaddump)	LED 4
Low lube oil pressure	054: Low Oil Pressure	LED 5
Overspeed	051: Genset High RPM	LED 6
Low fuel main tank	058: Low Fuel Level	LED 7
Low coolant level	103: Low Coolant Level or low coolant switch(Input Func.)	LED 8
High battery voltage	097: High Battery Voltage	LED 9
Low voltage in battery	096: Low Battery Voltage	LED 10
Battery charger ac failure	100: Low Charge Volt	LED 11
Remote emergency stop	Emergency Stop (Input Func.)	LED 12
Low cranking voltage	Reserved Inp. Func-67	LED 13
Low starting air pressure	Reserved Inp. Func-68	LED 14
Low starting hydraulic pressure	Reserved Inp. Func-69	LED 15
Air shutdown damper when used	Reserved Inp. Func-70	LED 16
EPS supplying load	004: Genset Contactor (Flag)	LED 17

Alarm	Alarm Code in Controller	Alarm LED
Control switch not in automatic position	056: Auto Mode (Flag)	LED 18
Contacts for local and remote common alarm	Communication Led	LED25
Lamp test	Button 2	
Audible alarm silencing switch	Button 3	



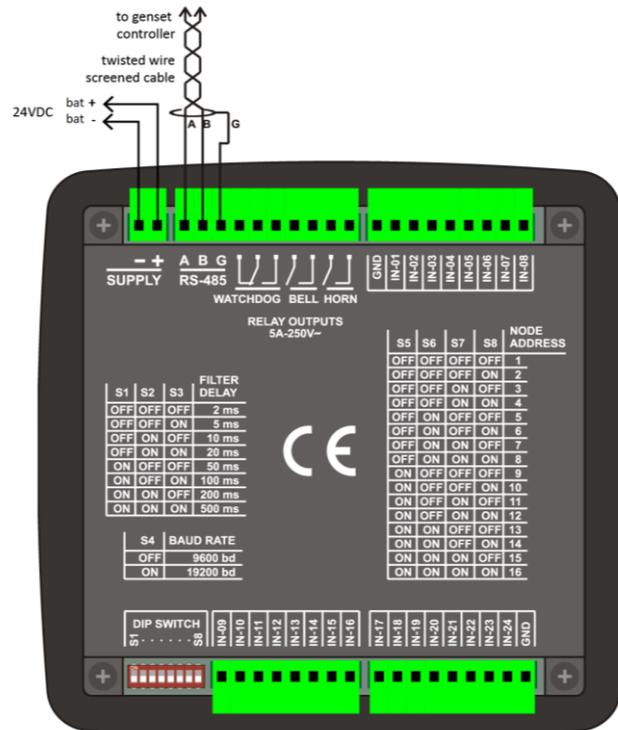
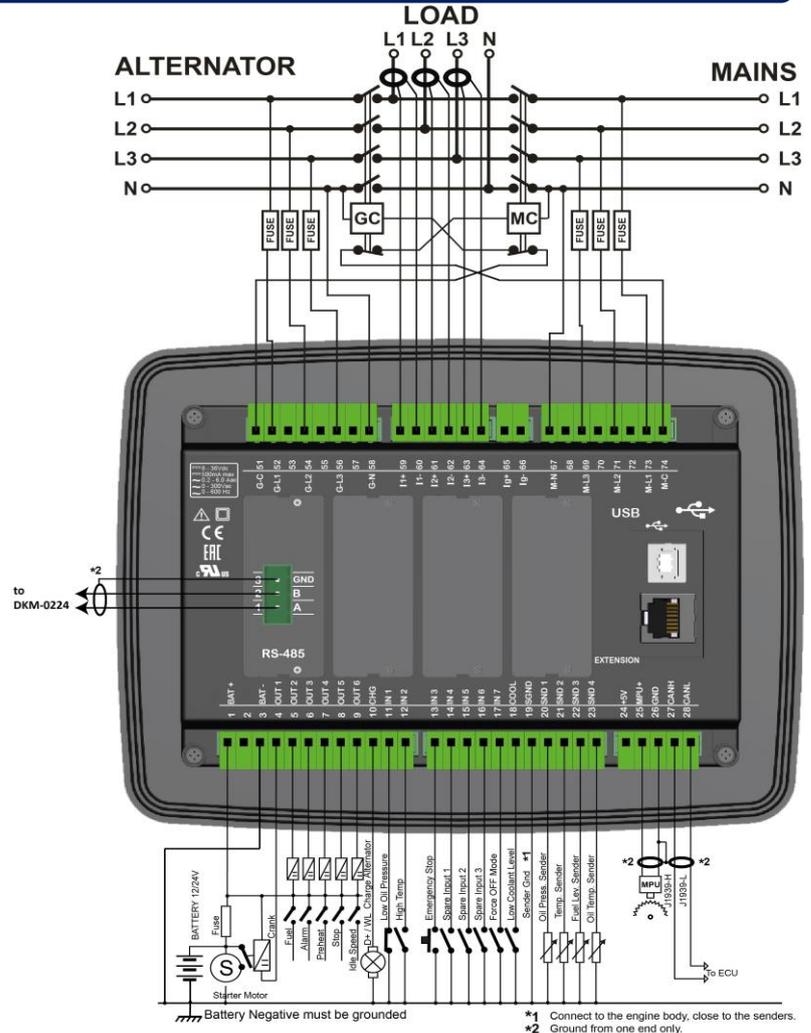
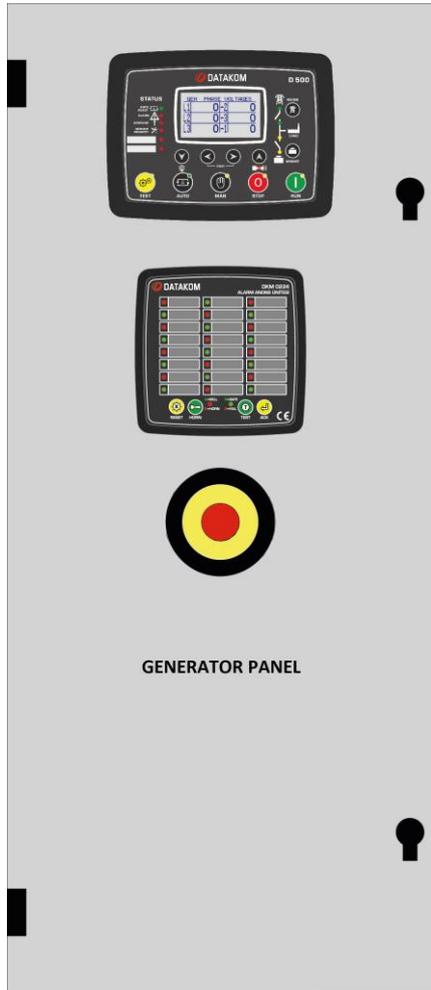
When the buzzer is silenced, LED 26 lights up in red.

6. NFPA 110 DIGITAL OUTPUTS

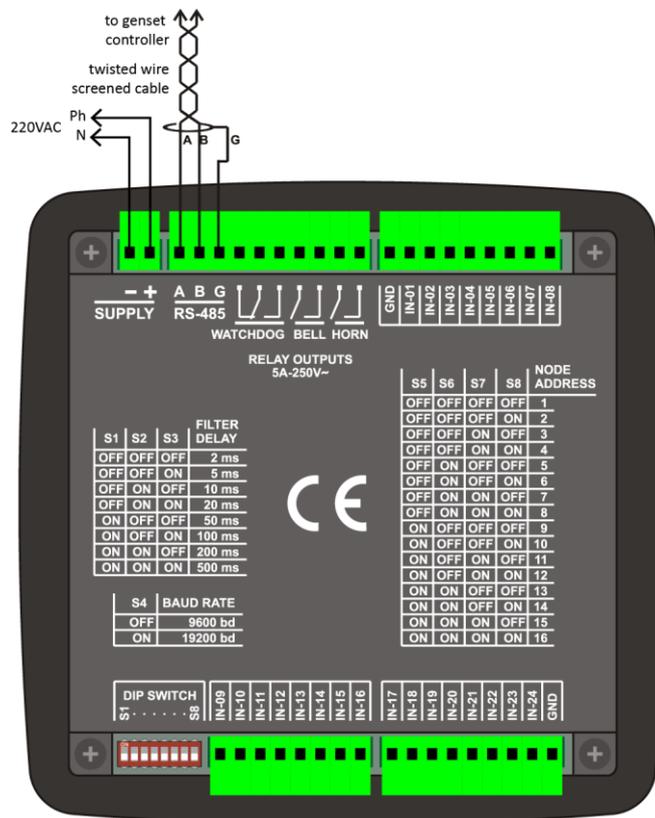
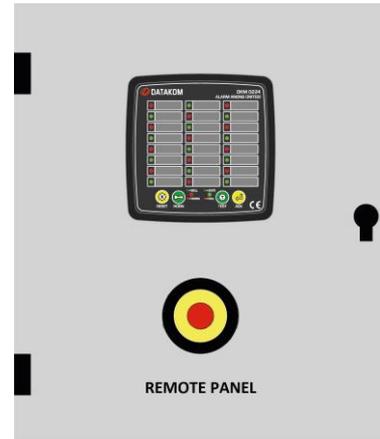
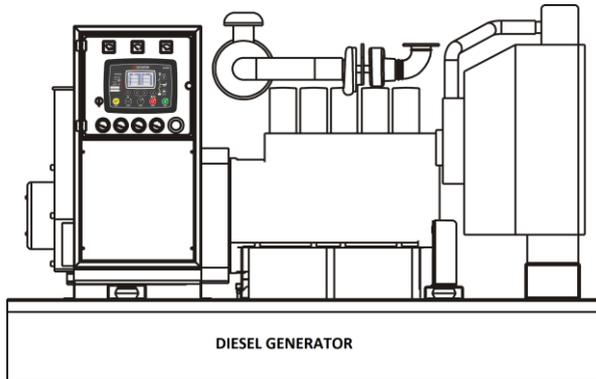
The last 6 digital outputs of the genset controllers are displayed by the last 6 LEDs on the DKM-0224.

DIGITAL OUTPUTS	
Digital Output Number	Digital Output LED
Digital output 35	LED 19
Digital output 36	LED 20
Digital output 37	LED 21
Digital output 38	LED 22
Digital output 39	LED 23
Digital output 40	LED 24

7. INSTALLATION ON GENSET PANEL



8. INSTALLATION ON REMOTE PANEL



In order to connect DKM-0224 annunciator via RS-485;
For D-200 MK2, D-300 MK2 and D-500LITE MK2, use the RS-485 port on the RS-485 Plug-in module.
For D-500 MK2 and D-700 MK2, use the RS-485 port on the RS-485 Plug-in module OR the RS-485 port on the COMM Plug-in module.