Type: LR44/5N

Logic Relay[1] - 3 Outputs (with NFC Technology)

Terminal Protection to IP20

Dims: to DIN 43880
W. 44mm

- Model designed specifically for controlling up to 3 pumps
- Inputs assigned to monitoring specific conditions (low/high tank level and pump trip status)
- 2 adjustable timers to delay output relays when energising/de-energising[2]
- Fixed timer limits any cycle to 60 minutes before automatically moving to next cycle thus equalising running time of the pumps[2]
- Built-in NFC (Near Field Communication)
- Product can be configured to operate as LR44/2 or LR44/3 using app^ running on compatible Smartphone
- Microprocessor based
- Isolated power supply with wide auxiliary operating supply voltage (100 – 230V AC/DC)
- Accepts up to 5, Voltage-free, N.O. contacts (i.e. pressure switches, relay contacts)
- 3 x SPNO relay outputs 5A
- Green LED indication for supply and NFC status, Individual Red LED indication for relay status
- Compact 44mm DIN Rail housing

[1] Also known as "Load Sharing Relay" or "Alternating Relay" / [2] when configured for LR44/5N operation

NFC

^ App available from:

GET IT ON Google Play

QMS ISO 9001 REGISTERED

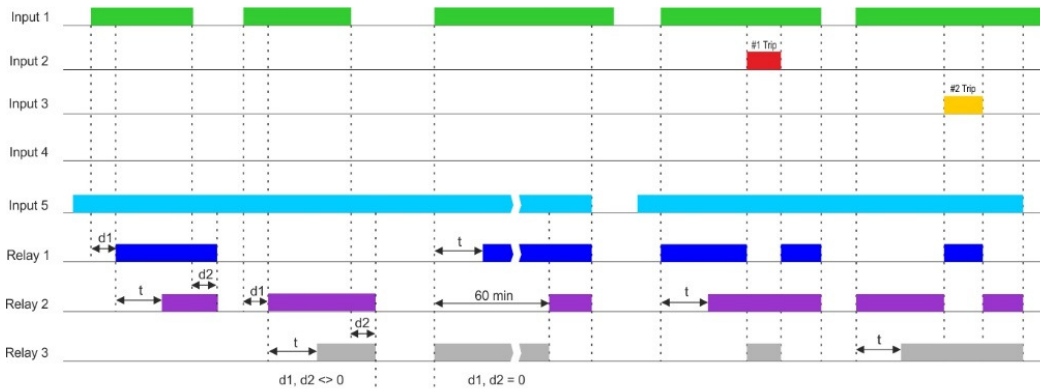
ISO 9001:2015
Cert. No. 14125771

OVERVIEW

The LR44/5N Logic Relay is designed primarily to control the operation of up to 3 pumps which are connected to the output relays RLY1, RLY2 and RLY3. A typical application for this product is where there are two water tanks installed and there is a requirement to pump water from one tank in to the other. In addition, the need to monitor the connected pumps in the event of a pump fault occurring (i.e. due to overcurrent or overheating) is catered for by allowing the pumps trip contact to be connected to the dedicated inputs.
Full operation of the unit is determined by the status of a float switch (installed in the receiving tank) along with the status of a switch/contact fitted to the supplying tank. Providing water is present in the supplying tank, the pumps will operate accordingly. Further detail of the exact operation is shown in the function diagram below.

FUNCTION DIAGRAM

Factory default operation shown



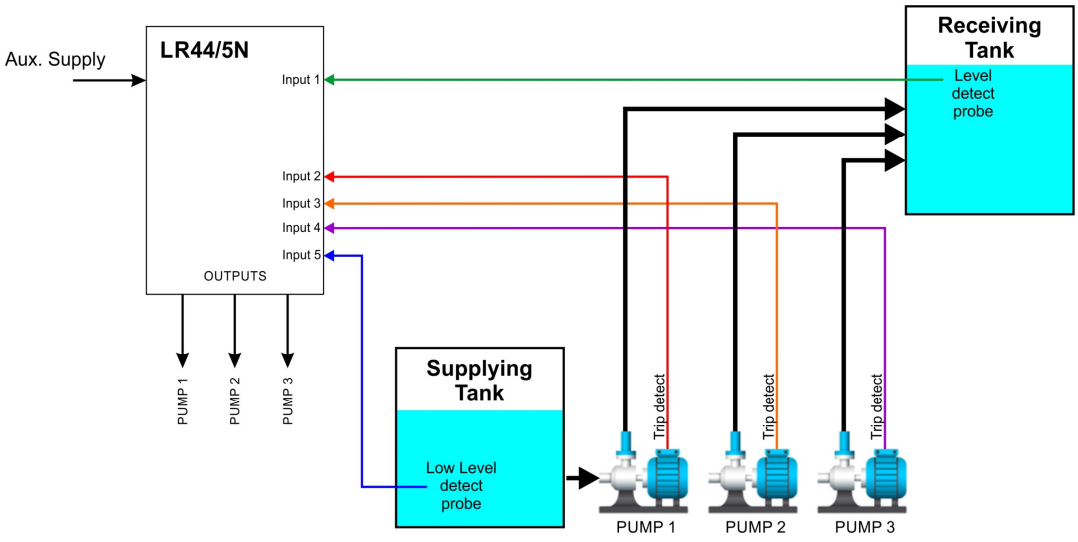
APP

To utilise the full features, the app must be downloaded and installed on to the device that will be used to communicate with the unit. This app can be obtained as follows:

- Visit https://play.google.com/store/apps and search for LR44/5N
- Scan the QR code below. This will take you directly to the app on Google Play

Instructions on using the app to set the additional features can be found in either the Help menu (within the app)

BLOCK DIAGRAM



Type: LR44/5N

Logic Relay[1] - 3 Outputs (with NFC Technology)

INSTALLATION

Installation work must be carried out by qualified personnel.

- BEFORE INSTALLATION, ISOLATE THE SUPPLY.
- Connect the unit as shown in the diagram below and ensure the voltage of the supply to be connected to terminals "6" and "7" is within the voltage rating of this product.
- Connect the external contact for "Input 1" across terminals "1" and "14, "Input 2" across terminals "2" and "14" and so on. Note that the common for the external contacts is terminal 14.
- The connections to the Output Relays (shown as "RLY1", "RLY2" and "RLY3") should be wired according to the external load they are controlling/switching.
- Note that the LED's correspond to the Relay Outputs as follows: "Output 1" LED = "RLY1" status, "Output 2" LED = "RLY2" status and "Output 3" LED = "RLY3" status.

Applying power.

- Apply power and the green "Power supply" ❹ LED will illuminate.
- If the external contacts are open the three red "Output 1" ❶/"Output 2" ❷/"Output 3" ❸ LED's will remain extinguished.

Basic unit operation when configured as LR44/5N (with power applied).

- Close and keep closed, the external contact wired to "Input 5".
- Close the external contact connected to "Input 1" and "RLY1" will energise and corresponding red LED ❶ illuminate after the delay period "d1".
- After delay period "t", "RLY2" will energise and corresponding red LED ❷ will illuminate.
- Open the contact and both "RLY1" and "RLY2" will both de-energise and red LED's extinguish after delay period "d2".
- Close the same contact again and now "RLY2" will energise and corresponding red LED ❷ will illuminate after the delay period "d1".
- After delay period "t", "RLY3" will energise and corresponding red LED ❸ will illuminate.
- Open the contact and "RLY2" and "RLY3" will both de-energise and red LED's extinguish after delay period "d2".
- The next time the same contact is closed again, the operation will move over to "RLY3" where "RLY1" is delayed for period "t".

Note

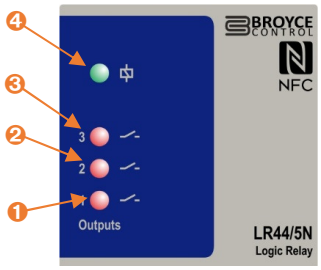
The maximum running time of any cycle is 60 minutes and after this time the unit will automatically move over to the next cycle.

Troubleshooting

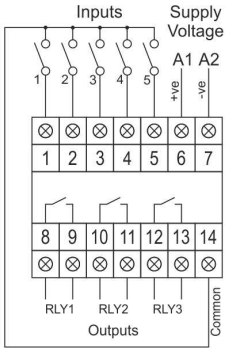
If the unit fails to operate correctly or as described, check the wiring is correct, supply voltage is present and within the operating limits specified.

FRONT LED INDICATION

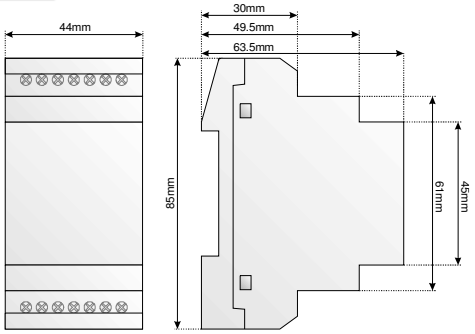
1. Output 1 status (Red) LED
2. Output 2 status (Red) LED
3. Output 3 status (Red) LED
4. Power supply and NFC status (Green) LED



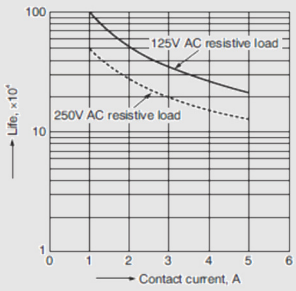
CONNECTION DIAGRAM



DIMENSIONS



TECHNICAL SPECIFICATION

Auxiliary Power Supply (6, 7)		
Voltage range (Us):	100 – 230V AC/DC	
Frequency range:	48 – 63Hz (AC supplies)	
Supply variation:	85 – 115% of Us	
Power consumption (max.):	3VA	
Auxiliary supply is galvanically isolated from the switch contact inputs		
Pollution degree:	2	
Overvoltage category:	III (IEC 60664)	
Rated impulse withstand voltage:	4kV (1.2/50µS) IEC 60664	
Monitored input (1, 2, 3, 4, 5, 14)		
No. of monitored inputs	5	
Max. cable length:	50m (relay to external contacts)	
Characteristics		
Typical response times:	*When no intentional delay is chosen in the app, the response times are as below.*	
To relay(s) energising	<1s	
To relay(s) de-energising	<1s	
Time delays when configured as LR44/5N (refer to Function Diagram also)		
Delay (t):	30s (fixed)	
Delay (d1):	0 – 60s *Default setting 0s*	
Delay (d2):	0 – 60s *Default setting 0s*	
Max. run time of any cycle:	60m (fixed)	
Reset time:	380ms	
Repeat accuracy:	0.5% @ constant conditions	
LED indication		
Power on indication:		
NFC status: ⏚	Green x1	*LED is usually permanently lit but will flash if no valid profile has been selected or there was a communications error with the smartphone*
Relay status:	Red x 3	
Temperature rating		
Operating:	-20 to +60°C	
Storage:	-30 to +70°C	
Relative humidity:	+95% max.	
Output		
RLY1 **(8, 9):**	SPNO relay	
RLY2 **(10, 11):**	SPNO relay	
RLY3 **(12, 13):**	SPNO relay	
Output rating (all relays):	AC1	250V 5A (1250VA)
	AC15	250V 2A
	DC1	30V 3A (90W)
Electrical life:		
Dielectric voltage:	2kV AC (rms) IEC 60947-1	
Rated impulse withstand voltage:	4kV (1.2/50µS) IEC 60664	
Housing		
Material:	Grey flame retardant Lexan UL94 V0	
Weight:	130g	
Mounting option:	On to 35mm symmetric DIN rail to BS EN 60715	
Terminal conductor size		
Cable type:		
Nominal cross section:	0.2 – 4mm² 30 – 12AWG	0.2 – 2.5mm² 30 – 12AWG / 0.2 – 2.5mm² 30 – 12AWG
Stripping length:	6mm	
Standards		
Product:	Conforms to: CE and RoHS Compliant. C-tick ✔	
EMC:	Immunity: EN 61000-6-2 Emissions: EN 61000-6-3	

Numbers shown above in bold/within brackets refer to terminal numbers on housing.

Note: The unit will need to be power cycled for any new profile uploaded to take effect.