DALI 4Net Art. Nr.: 22176666 and 22176666-B Access via Modbus TCP/IP Sample Collection

The samples were made with the program "Wireshark". We recommend to use this program to analyse the communication on the Modbus layer.

Furthermore, the Modbus communication can be tested with the program "CAS Modbus Scanner".

Additional information about the DALI 4Net is available in our datasheet and operating manual.

Datasheet:

https://www.lunatone.com/wpcontent/uploads/2018/03/22176666 DALI 4Net EN D0053.pdf

Manual:

https://www.lunatone.com/wp-content/uploads/2018/03/DALI4Net Manual EN-1.pdf

Content:Page 1 to 14:Wireshark examplesPage 15 to 19:CAS Modbus Scanner examples

DALI command "RECALL MAX" to Broadcast on line 0

Whole Frame:

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| No. | Time | Source | Destination | Protocol Length Ir | ıfo | | | | |
| 17- | 1 0.000000 | 192.168.0.101 | 192.168.0.98 | Modbus 83 | Query: Trans: | 3360; Unit: | 1, Func: 23 | : Read I | Write |
| | 2 0.002025 | 192.168.0.98 | 192.168.0.101 | Modbus 73 R | esponse: Trans: | 3360; Unit: | 1, Func: 23 | : Read I | Write |
| | 3 0.049236 | 192.168.0.101 | 192.168.0.98 | TCP 54 5 | 1244 → 502 [ACK] | Seq=30 Ack=20 | Win=65050 Le | n=0 | |
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| > Fran | ne 1: 83 bytes or ernet TT Spc: W | n wire (664 bits), 83 istronT 72:86:7e (48: | bytes captured (664) | Atmel 10:56:86 | te \Device\NPF_{ | -10282DE-25E4-4 | F2F-91AE-EØA | 1C9F6086 | 69}, 1 |
| > Inte | ernet Protocol Ve | ersion 4, Src: 192.16 | 8.0.101. Dst: 192.168 | .0.98 | (10.02.30.10.30.0 | ,0) | | | |
| > Tran | nsmission Control | l Protocol, Src Port: | 51244, Dst Port: 502 | , Seq: 1, Ack: 1, | , Len: 29 | | | | |
| > Modi | ous/TCP | | | | | | | | |
| > Mode | ous | | | | | | | | |
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| 0010 | 00 45 08 91 40 0 | 0 80 06 00 00 c0 a8 | 00 65 c0 a8 E @ | 1 | | | | | |
| 0028 | 00 62 c8 2c 01 f | ⁶ 61 e6 50 78 00 1c | 99 8c 50 18 .b., | a - Px P - | | | | | |
| 0030 | fe 2d 82 4f 00 0 | 0 0d 20 00 00 00 17 | 01 17 00 65 0 0 | e | | | | | |
| 0050 | 00 00 00 00 | 00 00 12 01 00 05 00 | | | | | | | |
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| eigefilter anwenden | <ctrl-></ctrl-> | | Response of the state | | | | |
| Time | Source | Destination | Protocol Leng | th Info | | | |
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| 2 0.002025 | 192.168.0.98 | 192.168.0.101 | Modbus | /3 Response: Trans: | 3360; Unit: | 1, Func: 23 | : Read |
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| | | | | | | | |
| ernet II, Src: W ernet Protocol V Insmission Contro Ibus/TCP Ibus | /istronI_72:8b:7e (48 /ersion 4, Src: 192.1 >1 Protocol, Src Port | <pre>:2a:e3:72:8b:7e), Ds 68.0.101, Dst: 192.1 :: 51244, Dst Port: 5</pre> | 4 Bits) on inte t: Atmel_10:56: .68.0.98 .02, Seq: 1, Ack | 8b (fc:c2:3d:10:56:8 | 102020E-25E4-4 b) | F2F-91AE-EØA | 1097000 |
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DALI Frame:

| 00 | fc | c2 | 3d | 10 | 56 | 8b | 48 | 2a | e3 | 72 | 8b | 7e | 08 | 00 | 45 | 00 | $\cdot \cdot = \cdot V \cdot H^*$ | ·r·~·E· |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------------------------|----------|
| 10 | 00 | 45 | 08 | 91 | 40 | 00 | 80 | 06 | 00 | 00 | c0 | a8 | 00 | 65 | c0 | a8 | · E · · @ · · · | e |
| 20 | 00 | 62 | c8 | 2c | 01 | f6 | 61 | e6 | 50 | 78 | 00 | 1c | 99 | 8c | 50 | 18 | ·b·,··a· | Px····P· |
| 30 | fe | 2d | 82 | 4f | 00 | 00 | Ød | 20 | 00 | 00 | 00 | 17 | 01 | 17 | 00 | 65 | 0 | e |
| 40 | 00 | 05 | 00 | 64 | 00 | 06 | 0c | 12 | bf | 00 | 03 | 00 | 00 | ff | 05 | 00 | · · · d · · · · | |
| 50 | 00 | 00 | 00 | | | | | | | | | | | | | | | |

DALI Monitor:

| 🙀 DALI-Monitor - | DALI USB (SN | 113616) | | | | | | 200 | × |
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| 11 🚘 😭 | ► 🖣 ⊕ | 🔝 🕐 | | find Hex. | find Addr: | find Cm | d: [| | |
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The unit identifier is used for the selection of the DALI line (here it is 1 for line 0):

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| 6 | Mode | ISM1 | 551 | LON | CO | ntr | 01 | Pro | EOCO | 1, | SILC | PO | rt: | 21 | 0/0 | , v | St P | ort: 502 | | seq: | 1, | ACK | : 1, | Lei |
| | TOUD | us/ | IC. | | | t day | | F 1 | | 77 | | | | | | | | | | | | | | |
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| | | eng | tn: | 23 | | | | | | | | | | | | | | | | | | | | |
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| 00 00 00 | R W W B D 000 010 0 020 0 0300 | ead ead rit yte ata fc 00 00 fe | Wc e F e V Cc : 1 c2 c2 c2 c2 c2 c2 c2 c2 c2 c2 c2 c2 c2 | ard Refe Jord Dunt 12de 3d 58 c7 57 | Cou erer 1 Co 1 Co 1 Co 1 Co 1 Co 1 Co 1 Co 1 Co | unt nce oun 12 0300 8a 40 01 00 | : 5 Nur 2000 d5 00 f6 00 | mber 6 ff0 f4 80 99 03 | r: 1 5000 39 06 f6 d1 | 00 0000 09 20 c8 00 | 30 30 39 17 00 | 0e c0 00 | c6 a8 00 17 | 08 00 c1 | 00 64 02 | 45 c0 50 | 00 a8 18 65 | EXb@ c @W | •9 | •<• 9• | • • • E • • d • • • F | | | |
| 00 00 00 | R R W B D 000 010 010 010 010 010 010 010 010 0 | ead lead lrit lrit yte ata fc 00 00 fe 00 | Wc e F e V Cc : 1 c2 45 63 40 05 | 2000 2000 2000 2000 2000 2000 2000 200 | Cou erer d Co t: 1 0000 0 f 62 86 e4 64 | unt nce oun 12 0300 8a 40 01 00 00 | : 5 Nur t: 0 000 f6 00 f6 00 | mber 6 ff0 ff 80 99 03 0c | r: 1 5000 39 06 f6 d1 12 | 00 0000 09 20 c8 00 d0 | 3c 39 17 00 | 0e c0 00 03 | c6 a8 00 17 00 | 08 00 c1 01 00 | 00 64 02 17 ff | 45 c0 50 00 05 | 00 a8 18 65 00 | EXb@ c @W ····d·· | •9 | ·<· 9· | | e. | | |

| Line | Unit Identifier |
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| 0 | 1 |
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DALI command "OFF" to Broadcast on line 1

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| Anzei | igefilter anwenden < | Ctrl-/> | | | | | | + - |
| No. | Time | Source | Destination | Protocol Length | Info | | | |
| F | 1 0.000000 | 192.168.0.101 | 192.168.0.98 | Modbus 83 | Query: Trans: | 3364; Unit: 2, F | unc: 23: | Read Write |
| | 2 0.000994 | 192.168.0.98 | 192.168.0.101 | Modbus 73 | Response: Trans: | 3364; Unit: 2, F | unc: 23: | Read Write |
| | 3 0.041767 | 192.168.0.101 | 192.168.0.98 | TCP 54 | 51315 → 502 [ACK] | Seq=30 Ack=20 Win= | 65050 Len= | 0 |
| 4 | | | | | | | | |
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| > Ethe > Inte > Tran > Mode > Mode | ernet II, Src: W: ernet Protocol Ve nsmission Contro bus/TCP bus | istronI_72:8b:7e´(48:: ≃rsion 4, Src: 192.16 l Protocol, Src Port: | 2a:e3:72:8b:7e), Dst: 8.0.101, Dst: 192.168 51315, Dst Port: 502 | Atmel_10:56:81 .0.98 , Seq: 1, Ack: |) (fc:c2:3d:10:56: | 3b) | | |
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| 0000 | fc c2 3d 10 56 8 | 3b 48 2a e3 72 8b 7e | 08 00 45 00 ···=·V·H | l* •r•~•E• | | | | |
| 0010 | 00 45 08 c9 40 0 | 00 80 06 00 00 c0 a8 | 00 65 c0 a8 E @ | | | | | |
| 0030 | fe 2d 82 4f 00 0 | 0 0d 24 00 00 00 17 | 02 17 00 65 | \$e | | | | |
| 0040 | 00 05 00 64 00 0 | 06 0c 12 c3 00 03 00 | 00 ff 00 00 ····d···· | | | | | |
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| 07 | wireshark Ethernet | 20200813143309 a07336.pca | png | | Pakete: 3 · Angezeig | : 3 (100.0%)• Verworfen: (| 0 (0.0%) Pr | ofil: Default |

DALI command "GOTO Scene 0" to group 0 on line 2

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| Anze | eigefilter anwenden < | Ctrl-/> | | | | | | | | -+ |
| No. | Time | Source | Destination | Protocol Len | ngth Info | | | | | |
| 17 | 1 0.000000 | 192.168.0.101 | 192.168.0.98 | Modbus | 83 Q | uery: Trans: | 3367; Unit: | 4, Func: 23 | : Read | Write |
| | 2 0.001280 | 192.168.0.98 | 192.168.0.101 | Modbus | 73 Resp | oonse: Trans: | 3367; Unit: | 4, Func: 23 | : Read | Write |
| - | 3 0.056363 | 192.168.0.101 | 192.168.0.98 | TCP | 54 5142 | 21 → 502 [ACK] | Seq=30 Ack=20 | Win=65031 Le | n=0 | |
| | | | | | | | | | | |
| < | | | | | | | | | | > |
| > Int. > Trans > Model > Model | ernet Protocol V nsmission Contro bus/TCP bus .001 0111 = Funct Read Reference N Read Word Count: Write Reference I Write Word Count Byte Count: 12 Data: 12c6008300(| ersion 4, Src: 192.16 1 Protocol, Src Port: tion Code: Read Write umber: 101 5 Number: 100 : 6 20811000000000 | 8.0.101, Dst: 192.168 51421, Dst Port: 502 Register (23) | .0.98 - , Seq: 1, Ac | :k: 1, L | en: 29 | 192 * | | | |
| < | | | | | | | | | | > |
| 0000 | fc c2 3d 10 56 8 | 3b 48 2a e3 72 8b 7e | 08 00 45 00 ···=·V· | H* ·r·~·E· | | | | | | - |
| 0010 | 00 45 09 5b 40 0 | 00 80 06 00 00 c0 a8 | 00 65 c0 a8 ·E·[@· | e | | | | | | |
| 0020 | fe 1a 82 4f 00 0 | 16 9e 22 e3 c3 00 2d 30 0d 27 00 00 00 17 | 04 17 00 65 ····0·· | .'QZP- | | | | | | |
| 0040 | 00 05 00 64 00 0 | 06 0c 12 c6 00 03 00 | 00 81 10 00 ····d·· | ··· ······ | | | | | | |
| 0050 | 00 00 00 | | | | | | | | | |
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| 07 | wireshark_Ethernet | _20200813150814_a13076.pc | apng | | Pa | akete: 3 · Angezeigi | t: 3 (100.0%) · Verw | orfen: 0 (0.0%) | Profil: De | fault |

DALI command "RECALL MIN LEVEL" to single address A0 on line 3

| A *Etł | nernet | | | | | | _27 | | × |
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| Anzei | igefilter anwenden < | Ctrl-/> | | | | | | | - + |
| No. | Time | Source | Destination | Protocol Length | Info | | | | |
| 17 | 1 0.000000 | 192.168.0.101 | 192.168.0.98 | Modbus 83 | Query: Trans: | 3368; Unit: 8, Fu | unc: 23: | Read W | rite |
| | 2 0.001575 | 192.168.0.98 | 192.168.0.101 | Modbus 73 | Response: Trans: | 3368; Unit: 8, Fu | unc: 23: | Read W | rite |
| | 3 0.066511 | 192.168.0.101 | 192.168.0.98 | TCP 54 | 51427 → 502 [ACK] | Seq=30 Ack=20 Win=0 | 55069 Len | =0 | |
| < | | | | | | | | | > |
| > Fran | me 1: 83 bytes or | n wire (664 bits). 83 | bytes captured (664 | bits) on inter | face \Device\NPF { | F102B2DE-25E4-4F2F-9 | 1AE-EØA10 | 9F60869 | i) |
| > Ethe > Inte > Tran > Mode V Mode | ernet II, Src: W: ernet Protocol Ve nsmission Contro pus/TCP pus | istronI_72:8b:7e (48: ersion 4, Src: 192.16 l Protocol, Src Port: | 2a:e3:72:8b:7e), Dst: 8.0.101, Dst: 192.168 51427, Dst Port: 502 | Atmel_10:56:8 .0.98 , Seq: 1, Ack: | o (fc:c2:3d:10:56: 1, Len: 29 | 8b) | | | |
| | Read Word Count: Write Reference N Write Word Count: Byte Count: 12 Data: 12c70003006 | 5 Number: 100 : 6 9001060000000 | | | | | | | \$ |
| | 6 | al 40 ac - 2 70 al 7. | 00.00 45.00 VI | | | | | | |
| 0010 | 00 45 09 69 40 0 | 30 48 2a e3 72 80 7e | 00 65 c0 a8 ·E·i@ | H" (C:N::E: | | | | | |
| 0028 | 00 62 c8 e3 01 f | F6 64 a4 75 a6 00 2e | 83 79 50 18 ·b···· | d- u····yP- | | | | | |
| 0030 | fe 40 82 4f 00 0 | 0 0d 28 00 00 00 17 | 08 17 00 65 @ 0 · · · | ·(e | | | | | |
| 0050 | 00 00 00 00 | 00 00 12 07 00 03 00 | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| 0.7 | | | | | | | (2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - | 0 | . 1. |
| | wireshark_Ethernet_ | _20200813151118_a07844.pc | apng | | Pakete: 3 · Angezeig | t: 3 (100.0%)* Verworfen: 0 | (0.0%) P | rofil: Defai | ult 🔐 |

Command sequence for RGB DT8 colour control – short address A0 on line 1 with values 0,254,0 (only green)

Command sequence on DALI side (DALI Monitor):

| 1 🚘 🖬 💷 | ▶ 🖣 🗉 | | find Hex: find | Addr: fir | id Cmd: | |
|-----------------|----------|---------|--------------------------------------|--------------|------------|-------|
| Туре | Hex Data | Address | Command | Time | Date | Delta |
| DALI16 Special | A300 | * | DATA TRANSFER REGISTER= 0 (0x00) | 15:52:30.437 | 06.10.2020 | |
| DALI16 Special | C3FE | * | DATA TRANSFER REGISTER 1= 254 (0xFE) | 15:52:30.458 | 06.10.2020 | 21 |
| DALI16 Special | C500 | * | DATA TRANSFER REGISTER 2= 0 (0x00) | 15:52:30.505 | 06.10.2020 | 47 |
| DALI16 Special | C108 | * | ENABLE DEVICE TYPE 8 | 15:52:30.558 | 06.10.2020 | 53 |
| DALI16 AppExt D | 801EB | AO | SET TEMPORARY RGB DIMLEVEL | 15:52:30.590 | 06.10.2020 | 32 |
| DALI16 Special | C108 | * | ENABLE DEVICE TYPE 8 | 15:52:30.637 | 06.10.2020 | 47 |
| DALI16 AppExt D | 801E2 | AO | ACTIVATE | 15:52:30.658 | 06.10.2020 | 21 |

The three transfer registers 0, 1 and 2 are written for colour control via DT8 commands.

0 for red 1 for green 2 for blue

Command 1 - DATA TRANSFER REGISTER= 0 (0x00):

| ✓ Mo | dbus | /TC | Ρ | | | | | | | | | | | | | | | |
|--------------|------------|------|------|-----|------|-------|------|--|------|------|----|---------|-----|-----|-----|------|-----------------|-------------|
| | Tra | nsa | cti | on | Ide | nti | fie | r: 1 | 635 | | | | | | | | | |
| | Pro | toc | 01 : | Ide | nti | fie | r: (| 0 | | | | | | | | | | |
| | Len | gth | : 2 | 3 | | | | | | | | | | | | | | |
| | Uni | t I | den | tif | ier | : 2 | | | | | | | | | | | | |
| Y Mo | dbus | | | | | | | | | | | | | | | | | |
| | .00 | 1 0 | 111 | = | Fun | cti | on (| Code | : R | ead | Wr | ite | Re | gis | ter | (23) |) | |
| | Rea | d R | efe | ren | ce I | Num | ber | : 10 | 91 | | | | 10 | 14 | | 8 Ø | | |
| | Rea | d We | ord | Co | unt | : 5 | | | | | | | | | | | | |
| | Writ | te I | Ref | ere | nce | Nu | nbe | r: 1 | 100 | | | | | | | | | |
| | Writ | te I | Nor | d C | oun | t: 1 | 5 | | | | | | | | | | | |
| | Byte | e Co | oun | t: | 12 | 22114 | 500 | | | | | | | | | | | |
| | Data | a: . | 126 | 200 | 030 | 000 | 30 | 2000 | 0000 | 00 | | | | | | | | |
| | NECTION ED | - | | | | | | | | 2020 | | | | | | | | |
| 0000 | fc | c2 | 3d | Øf | 8a | d5 | f4 | 39 | 09 | Зc | 0e | сб | 08 | 00 | 45 | 00 | ··=···9 | · < · · · E |
| 0010 | 00 | 45 | 50 | b3 | 40 | 00 | 80 | 06 | 27 | e8 | c0 | a8 | 00 | 64 | c0 | a8 | • EP • @ • • • | 'd. |
| 0020 | 00 | 63 | c4 | f6 | 01 | f6 | 38 | d3 | 17 | f8 | 00 | 0a | 26 | bb | 50 | 18 | ·c···8· | ····&·P |
| | fd | e1 | 76 | 1e | 00 | 00 | 06 | 63 | 00 | 00 | 00 | 17 | 02 | 17 | 00 | 65 | • • V • • • • C | ••••• |
| 0030 | 1 u | | | | | | | - Contraction of the second se | 1000 | - | | 100.000 | 000 | 1 | 00 | 0.0 | | |
| 0030 0040 | 00 | 05 | 00 | 64 | 00 | 06 | 0c | 12 | 62 | 00 | 03 | 00 | 00 | as | 00 | 00 | ••••d••••• | b |

Command 2 - DATA TRANSFER REGISTER 1= 254 (0xFE):



Command 3 - DATA TRANSFER REGISTER 2= 0 (0x00):

| Y Mo | dbus | /TC | Р | | | | | | | | | | | | | | | |
|--------------------------------------|----------------------|----------------------|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|------------|----------|----------|----------|----------|-----------|-----------------|
| | Tra | nsa | cti | on | Ide | nti | fie | r: 1 | 637 | | | | | | | | | |
| | Pro | toc | 1 | Ide | nti | fie | r: 1 | 0 | | | | | | | | | | |
| | Len | gth | : 2 | 3 | | | | | | | | | | | | | | |
| | Uni | t I | den | tif | ier | : 2 | | | | | | | | | | | | |
| Y Mo | dbus | | | | | | | | | | | | | | | | | |
| | .00 | 1 0 | 111 | = | Fun | cti | on (| Code | : R | ead | Wr | ite | Rep | gis | ter | (23) | 1 | |
| | Rea | d R | efe | ren | ce | Num | ber | : 10 | 1 | | | | 63063 | 19000 | | 0.000 | | |
| | Rea | d W | ord | Co | unt | : 5 | | 9 R92 | 224 | | | | | | | | | |
| | Writ | te | Ref | ere | nce | Nu | mbe | r: 1 | 99 | | | | | | | | | |
| | Wei | te l | don | d C | oun | + • | 6 | 28 7 | .00 | | | | | | | | | |
| | But. | | | | 12 | | • | | | | | | | | | | | |
| | Dat | | 106 | 100 | 020 | 000 | - 50 | 0000 | 000 | 00 | | | | | | | | |
| | Dati | a | 120 | +00 | 050 | 000 | 50 | 0000 | 000 | 00 | | | | | | | | |
| | fc | c2 | 3d | Øf | 8a | d5 | f4 | 39 | 09 | 3c | 0e | c 6 | 08 | 00 | 45 | 00 | ••=•••9 | ·<···E· |
| 0000 | | | | | 10 | 00 | 80 | 06 | 27 | e6 | c0 | a8 | 00 | 64 | c0 | a8 | - EP - @ | 'd |
| 8000 0010 | 00 | 45 | 50 | b5 | 40 | | | | | 20 | 00 | 0.0 | 26 | e1 | 50 | 18 | | a 0 n |
| 8000 0010 0020 | 00 00 | 45 63 | 50 c4 | 65 f6 | 01 | f6 | 38 | d3 | 18 | 32 | 90 | Ua | | 1000 | | | - C O | - Z - ' @ ' P - |
| 0000 0010 0020 0030 | 00 00 fd | 45 63 bb | 50 c4 73 | 65 66 c0 | 01 00 | f6 00 | 38 06 | d3 65 | 18 00 | 32 00 | 00 | 17 | 02 | 17 | 00 | 65 | ···s····e | -2- @ P |
| 0000 0010 0020 0030 0040 | 00 00 fd 00 | 45 63 bb 05 | 50 c4 73 00 | 64 b5 | 01 00 00 | f6 00 06 | 38 06 0c | d3 65 12 | 18 00 64 | 32 00 00 | 00 00 | 17 00 | 02 00 | 17 c5 | 00 00 | 65 00 | s e | d |

Command 4 and 5 – ENABLE DEVICE TYPE 8 + SET TEMPORARY RGB DIMLEVEL



Because bit 3 is set in the control byte, the "ENABLE DEVICE TYPE 8" command is sent before the "SET TEMPORARY RGB DIMLEVEL" command.

Screenshot from manual:

| | | Write Dali Command |
|------|-----------------|---|
| Byte | Name | Description |
| 0 | CmdByte | Command Byte = 0x12 always |
| 1 | Sequence number | Command Sequence number (will be sent back) Command Control byte |
| | | Bit 7: unused, set to 0 Bit 6: if set no data is sent out on the DALI line (used to test connection status) Bit 5: sent twice, cmd will be sent twice on DALI-line (required |
| 2 | Control | for some DALI commands) Bit 4: Send DTR before DALI command Bit 3: Send DALI Device Type before DALI command Bit 2: Send "Set Actual Level to DTR" before DALI command |
| | | Command Mode Byte |

Command 6 and 7 – ENABLE DEVICE TYPE 8 + ACTIVATE



Here the command "ENABLE DEVICE TYPE 8" is also sent before "ACTIVATE".

Example for a Query QUERY ACTUAL LEVEL on line 1 to address A0

DALI Monitor:

| 🖹 😂 🖬 💷 | ▶ 🖗 🖭 | ir 🕄 🛛 fir | nd Hex: find Addr: find Cmd: | | | |
|--------------|----------|------------|------------------------------|--------------|------------|------------|
| Туре | Hex Data | Address | Command | Time | Date | Delta (mS) |
| DALI16 Query | 01A0 | A0 | QUERY ACTUAL LEVEL | 18:35:43.539 | 12.10.2020 | |
| DALI8 Answer | 2F | | = 47 (0x2F) | 18:35:43.554 | 12.10.2020 | 15 |

DALI command QUERY ACTUAL LEVEL:

| > E+k | ame 1: 83 | bytes | on wi | ire (| 664 b | its), | 83 | byt | es d | captu | red (664 bits) on interface \Device\NPF_{A9DEFEFA- |
|--|--|----------------------------------|----------------------|--------------------------------------|----------|----------------|------|------|------|-------|---|
| | nernet II, | Src: | Hewle | ettP_ | 3c:0e | :c6 (| f4:3 | 39:0 | 9:30 | :0e: | <pre>c6), Dst: Atmel_0f:8a:d5 (fc:c2:3d:0f:8a:d5)</pre> |
| > Int | ternet Pro | otocol | Versi | Lon 4 | , Src | : 192 | .168 | 3.0. | 100, | , Dst | : 192.168.0.99 |
| > Tra | ansmissior | 1 Contr | ol Pr | rotoc | ol, S | rc Po | ort: | 500 | 14, | Dst | Port: 502, Seq: 1, Ack: 1, Len: 29 |
| ✓ Mod | dbus/TCP | | | | | | | | | | |
| | Transacti | on Ide | ntifi | ler: 3 | 1114 | | | | | | |
| | Protocol | Identi | fier: | 0 | | | | | | | |
| | Length: 2 | 3 | | | | | | | | | |
| | Unit Iden | tifier | : 2 | | | | | | | | |
| < Moo | dbus | | | | | | | | | | |
| | .001 0111 | = Eur | ction | Code | e: Re | ad Wr | ite | Reg | iste | er (2 | 3) |
| | Dead Defe | rence | Numbe | r. 10 | 21 | | | HEB. | | | ·/ |
| | Read Mone | Count | - E | | 1 | | | | | | |
| | Read word | Count | | 1010-0-5 | | | | | | | |
| | Write Ret | erence | Numb | per: . | 100 | | | | | | |
| | Write Wor | d Cour | it: 6 | | | | | | | | |
| | Byte Cour | nt: 12 | | | | | | | | | |
| | Data: 125 | 900030 | 00001 | a0000 | 30000 | 0 | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| c | | 0f 8a | d5 f | 4 39 | 09 | 3c Øe | c6 | 08 | 00 4 | 5 00 | ···=····9 ·<····E· |
| ¢ 0000 | tc c2 3d | | 00 8 | 0 06 | e8 | 55 c0 | a8 | 00 | 64 c | 0 a8 | • E • E@ • • • U • • • d • • |
| < 0000 0010 | fc c2 3d 00 45 90 | 45 40 | 00 0 | | 85 | d4 00 | 04 | a5 i | 86 5 | 0 18 | · c · ^ · · · · · · · · · · · · · · · · |
| ¢ 0000 0010 0020 | fc c2 3d 00 45 90 00 63 c3 | 45 40 | f6 d | la 8b | | | 17 | 02 | 17 0 | 0 65 | ···T····Z ······e |
| <pre>0000 0010 0020 0030</pre> | fc c2 3d 00 45 90 00 63 c3 fe 1a 54 | 45 40 5e 01 cd 00 | f6 d 00 0 | la 8b 14 5a | 00 | 00 00 | 1/ | - | | | |
| <pre> 0000 0010 0020 0030 0040 </pre> | fc c2 3d 00 45 90 00 63 c3 fe 1a 54 00 05 00 | 45 40 5e 01 cd 00 64 00 | f6 d 00 0 06 0 | la 8b 14 5a 1c 12 | 00 59 | 00 00 00 03 | 00 | 00 | 01 a | 0 00 | ••••d•••• |
| 0000 0010 0020 0030 0040 0050 | fc c2 3d 00 45 90 00 63 c3 fe 1a 54 00 05 00 00 00 00 | 45 40 5e 01 cd 00 64 00 | f6 d 00 0 06 0 | la 8b 14 5a 1c <mark>12</mark> | 00 59 | 00 00 00 03 | 00 | 00 | 01 a | 0 00 | ••••d•••• <mark>••¥••••••</mark> |

Answer:



Byte no. 5 contains the value for the actual level. In this case 47 (hex 2F).

| | | Read Dali Command |
|------|-----------------|---|
| Byte | Name | Description |
| 0 | Cmd Byte | Command Byte = 0x12 always Command Status byte: High nibble: identifier, value =7 Low nibble: status 0: OK 1: DALI answer ="NO" 2: DALI 8bit data 3: DALI 16bit data 4: DALI 25bit data (eDALI) 5: DSI 6: DALI 24bit data 7: Error/Info, if set: Check sum: DATA_LO=1; DALI-line short circuit: DATA_LO=2; DALI receive error: DATA_LO=3; DALI bus back to ok: DATA_LO=4; Switch to DSI-mode: DATA_LO=5; Switch to DALI-mode: DATA_LO=6; |
| 2 | Reserved | Reserved |
| 3 | Reserved | DALI_HI |
| 4 | Reserved | DALI_MI |
| 5 | Answer | DALI_LO (answer to previous command) |
| 6 | Reserved | |
| 7 | Sequence number | Command sequence number same as previously sent |

CAS Modbus Scanner

| | C Ch | ipkin ation Systems | | |
|---|---------------|------------------------|-----------------|-------------|
| | Select a task | and click poll | Pol | Auto update |
| | Offset | Standard address | 6 digit address | Value |
| 1 | • | | | |
| | | Ja Nein | | |

| ttings | | |
|----------|--|-----------------|
| About | Add Task | |
| Add Task | | Add Connection |
| | | Add Device |
| | | Add Request |
| Add 0 | Connection | × dd Write |
| Se | rial Connection | Edit |
| Ser | ial Port Baud Rate Data Bits Stop Bits Parity Timeout (S | ec) — Delete |
| Icc | M1 ▼ 9600 ▼ 8 ▼ 1 ▼ None ▼ 3 | |
| | Add Serial Connection | |
| | | |
| | P connection Address Port Timeout (Sec) | |
| | 192 . 168 . 0 . 99 502 3 Add TCP Connection | |
| | 1 1 2 | _ |
| | Cance | |
| | | |
| | | |
| | | |
| | | |
| | OK Abbrechen Überneh | nmen Hilfe |

The slave ID determines the DALI line (unit identifier):

Line 0: 1 Line 1: 2 Line 2: 4 Line 3: 8

| About | Add Task | |
|----------|---------------------------------|----------------|
| Add Task | TCP 192.168.0.99:502 timeout: 3 | Add Connection |
| | | Add Device |
| | | Add Request |
| | Add Device X | Add Write |
| | Device | Edit |
| | | |
| | | |

Reading the IP configuration:

| About Auto Update | Add Task | × |
|----------------------|---|----------------|
| Add Task | □- TCP 192.168.0.99:502 timeout: 3 | Add Connection |
| | | Add Device |
| | | Add Request |
| | | Add Write |
| | Add Request X | Edit |
| | Request Function: Offset Length 03 Read Holding registers (4xxxx) 11 7 Address 40011-40018, (Offset of 1 corresponds to 40001) Add Request Cancel | Delete |
| | OK Abbrechen Uberr | iehmen Hilfe |

| | Auto | mation System | 15 | | uto upda |
|-----------|--|---|--|--|-------------|
| Pevice: 1 | Offset | Standard addr | ess 6 digit address | Hex | char |
| | 11 12 13 14 15 16 17 | 40011 40012 40013 40014 40015 40016 40017 | 400011 400012 400013 400014 400015 400016 400017 | 0x00C0 0xA800 0x63FF 0xFFFF 0x0000 0x0000 0x0000 | Ă ÿ ÿ |
| ¢ | > < | | | | |

Reading address and level:

| About | Add Task | |
|-------------------------|---|--|
| Auto Update Add Task | □- TCP 192.168.0.99:502 timeout: 3 □- <mark>Device: 1</mark> □ Read Holding registers starting at 40011 for 7 | Add Connection Add Device Add Request Add Write |
| | Add Request Request Function: Offset Length 03 Read Holding registers (4xxxx) I 9001 64 Address 49001-49065, (Offset of 1 corresponds to 40001) Add Request Cancel | Edit Delete |
| | OK Abbrechen Ube | mehmen Hife |

6 operating devices are connected to the bus. All are switched off and therefore have the value 0. The first byte is the address, the second byte is the level (hex data).

| 6 | Automa | tion Systems | | - | | |
|--|----------------|------------------|-----------------|--------|------|---|
| - TCP 192.168.0.99:502 timeout: 3 | Last update: F | Poll | Auto updat | | | |
| ■ Device, 1 Read Holding registers starting at 40011 fr | Offset | Standard address | 6 digit address | Hex | char | 1 |
| Read Holding registers starting at 40001 f | 9001 | 49001 | 409001 | 0x0000 | | |
| Read Holding registers starting at 49001 h | 9002 | 49002 | 409002 | 0x0100 | | |
| | 9003 | 49003 | 409003 | 0x0200 | | |
| | 9004 | 49004 | 409004 | 0x0300 | | |
| | 9005 | 49005 | 409005 | 0x0400 | | |
| | 9006 | 49006 | 409006 | 0x0500 | | |
| | 9007 | 49007 | 409007 | 0xFF00 | | |
| | 9008 | 49008 | 409008 | 0xFF00 | | |
| | 9009 | 49009 | 409009 | 0xFF00 | | |
| | 9010 | 49010 | 409010 | 0xFF00 | | |
| | 9011 | 49011 | 409011 | 0xFF00 | | |
| | 9012 | 49012 | 409012 | 0xFF00 | | |
| | 9013 | 49013 | 409013 | 0xFF00 | | |
| | 9014 | 49014 | 409014 | 0xFF00 | | |
| | 9015 | 49015 | 409015 | 0xFF00 | | |
| | 9016 | 49016 | 409016 | 0xFF00 | | |
| > | < | | | | > | |

When the command RECALL MAX is sent on the bus (Broadcast), the value for the level changes to hex FE, which corresponds to 254, so it is fully switched on (after reading again):

| ⊡-TCP 192, 168.0.99:502 timeout: 3 | Last update: \ | Wed Mar 17 15:38:49 202: | | Poll | Auto u | odat |
|--|----------------|--------------------------|--------------|---------|--------|-----------|
| Device: 1 | Offset | Standard address | 6 digit addr | ess Hex | cha | e e la |
| Read Holding registers starting at 40011 for | 0001 | 40001 | 400001 | 0,000 | Eb | |
| Read Holding registers starting at 49001 fo | 9001 | 49002 | 409001 | 0x00 | | |
| | 9003 | 49003 | 409002 | 0x02 | Eh | |
| | 9004 | 49004 | 409004 | 0x03 | Eh | - 1 |
| | 9005 | 49005 | 409005 | 0x04F | Eh | |
| | 9006 | 49006 | 409006 | 0x05 | E h | |
| | 9007 | 49007 | 409007 | 0x06F | F h | |
| | 9008 | 49008 | 409008 | 0x07 | Eb | |
| | 9009 | 49009 | 409009 | 0x08F | Eb | |
| | 9010 | 49010 | 409010 | 0xFF0 | 0 | |
| | 9011 | 49011 | 409011 | 0xFF0 | 0 | |
| | 9012 | 49012 | 409012 | 0xFF0 | 0 | |
| | 9013 | 49013 | 409013 | 0xFF0 | 0 | |
| | 9014 | 49014 | 409014 | 0xFF0 | 0 | |
| | 9015 | 49015 | 409015 | 0xFF0 | 0 | |
| | 9016 | 49016 | 409016 | 0xFF0 | 0 | |
| () | < | | | | | > |

If after reading the value for the address does not start with 0 in the first line, please read the addresses in the DALI Cockpit and then try again.

You can use the system extension in the addressing menu for this:

| 0 0 | Info | | |
|--------------------------------|---|----------------------------------|--|
| 0 0 | Name DALI 4Net Bu | s | DALI Addressing Wizard - start 🛛 🕹 |
| | Manufacturer Lunatone Serial Number 10663 | Ver 1.0.2 | This wizard will guide you through the steps of initializing and addressing devices on the DALI bus. |
| | DALI: Addressing and Comman Address DALI Com Configure | nds ising imands Scenes | System Extension (search unaddressed devices) Control Gears Control Devices (Random Addressing) Input Devices (Physical Selection) DALI24 bit Devices Complete new installation (current device list will be discarded) |
| Config Control Gear | | No dimensions | The addressing will be done automatically or by means of "physical selection" method: use 'physical selection' addressing method for luminaires |
| Actual Level | | 0.000 % S | The search for devices may be done "invisible" or with optical feedback from the found devices: |
| MAX Level Power On Level | | 100.00 % S | ✓ "invisible" search for devices Click "Next" to proceed |
| System Fail Level Fade Time | | 100.00 % S no fade s S | |
| Fade Rate | | 44.7 st/s S | Back Next Abort |