

# Modbus Register LDO sc Model 2

V1.02

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| Name                | Register | Data Type | Length | Access Mode | Discrete Range | Min / Max    | Description                 |
|---------------------|----------|-----------|--------|-------------|----------------|--------------|-----------------------------|
| DO (ppm)            | 40001    | Float     | 2      | R           |                | -5 /21       | DO in ppm                   |
| DO (mg/l)           | 40001    | Float     | 2      | R           |                | -5 /21       | DO in mg/l                  |
| DO (%)              | 40003    | Float     | 2      | R           |                | 0 /200       | DO in percent               |
| Temperature (C)     | 40005    | Float     | 2      | R           |                | -5 /55       | Temp in C                   |
| Temperature (F)     | 40005    | Float     | 2      | R           |                | 0 /122       | Temp in F                   |
| Phase difference    | 40007    | Float     | 2      | R           |                | -180 /180    | BluePhase - RedPhase        |
| Blue phase          | 40009    | Float     | 2      | R           |                | -90 /90      | Blue LED phase              |
| Red phase           | 40011    | Float     | 2      | R           |                | -90 /90      | Red LED phase               |
| Blue magnitude      | 40013    | Float     | 2      | R           |                | -1.0 /1.     | Blue LED magnitude          |
| Red magnitude       | 40015    | Float     | 2      | R           |                | -1.0 /1.     | Red LED magnitude           |
| Software Version    | 40017    | Float     | 2      | R           |                | 0 /10.0      | App code version            |
| LegacyCoeff0        | 40019    | Float     | 2      | R           |                | 0 /0         |                             |
| LegacyCoeff1        | 40021    | Float     | 2      | R           |                | 0 /0         |                             |
| LegacyCoeff2        | 40023    | Float     | 2      | R           |                | 0 /0         |                             |
| LegacyCoeff3        | 40025    | Float     | 2      | R           |                | 0 /0         |                             |
| LegacyCoeff4        | 40027    | Float     | 2      | R           |                | 0 /0         |                             |
| LegacyCoeff5        | 40029    | Float     | 2      | R           |                | 0 /0         |                             |
| LegacyCoeff6        | 40031    | Float     | 2      | R           |                | 0 /0         |                             |
| LegacyCoeff7        | 40033    | Float     | 2      | R           |                | 0 /0         |                             |
| LegacyCoeff8        | 40035    | Float     | 2      | R           |                | 0 /0         |                             |
| Sample value (ppm)  | 40037    | Float     | 2      | R/W         |                | -21 /21      | Sample cal value in ppm     |
| Sample value (mg/l) | 40037    | Float     | 2      | R/W         |                | -21 /21      | Sample cal value in mg/l    |
| Sample value (%)    | 40037    | Float     | 2      | R/W         |                | -200 /200    | Sample cal value in percent |
| LegacyDOvalue       | 40039    | Float     | 2      | R           |                | 0 /0         |                             |
| Altitude (feet)     | 40041    | Float     | 2      | R/W         |                | -5000 /15000 | Alt/Pressure in feet        |
| Altitude (m)        | 40041    | Float     | 2      | R/W         |                | -1524 /4572  | Alt/Pressure in meter       |
| Pressure (mmHg)     | 40041    | Float     | 2      | R/W         |                | 0 /2000      | Alt/Pressure in mmHg        |
| Pressure (Torr)     | 40041    | Float     | 2      | R/W         |                | 0 /2000      | Alt/Pressure in Torr        |
| Salinity            | 40043    | Float     | 2      | R/W         |                | 0 /250.      | Salinity                    |
| Offset (ppm)        | 40045    | Float     | 2      | R/W         |                | -3 /3        | Offset in ppm               |
| Offset (mg/l)       | 40045    | Float     | 2      | R/W         |                | -3 /3        | Offset in mg/l              |
| Offset (%)          | 40045    | Float     | 2      | R/W         |                | -50 /50      | Offset in percent           |
| Gain (slope)        | 40047    | Float     | 2      | R/W         |                | 0.5 /1.5     | Cal gain                    |
| Coeff0              | 40049    | Float     | 2      | R/W         |                |              |                             |
| Coeff1              | 40051    | Float     | 2      | R/W         |                |              |                             |
| Coeff2              | 40053    | Float     | 2      | R/W         |                |              |                             |
| Coeff3              | 40055    | Float     | 2      | R/W         |                |              |                             |
| Coeff4              | 40057    | Float     | 2      | R/W         |                |              |                             |

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| Coeff5  | 40059    | Float     | 2      | R/W         |                |           |             |
| Coeff6  | 40061    | Float     | 2      | R/W         |                |           |             |
| Coeff7  | 40063    | Float     | 2      | R/W         |                |           |             |
| Coeff8  | 40065    | Float     | 2      | R/W         |                |           |             |
| Coeff9  | 40067    | Float     | 2      | R/W         |                |           |             |
| Coeff10 | 40069    | Float     | 2      | R/W         |                |           |             |
| Coeff11 | 40071    | Float     | 2      | R/W         |                |           |             |
| Coeff12 | 40073    | Float     | 2      | R/W         |                |           |             |
| Coeff13 | 40075    | Float     | 2      | R/W         |                |           |             |
| Coeff14 | 40077    | Float     | 2      | R/W         |                |           |             |
| Coeff15 | 40079    | Float     | 2      | R/W         |                |           |             |
| Coeff16 | 40081    | Float     | 2      | R/W         |                |           |             |
| Coeff17 | 40083    | Float     | 2      | R/W         |                |           |             |
| Coeff18 | 40085    | Float     | 2      | R/W         |                |           |             |
| Coeff19 | 40087    | Float     | 2      | R/W         |                |           |             |
| Coeff20 | 40089    | Float     | 2      | R/W         |                |           |             |

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| Name                    | Register | Data Type        | Length | Access Mode | Discrete Range         | Min / Max    | Description                                        |
|-------------------------|----------|------------------|--------|-------------|------------------------|--------------|----------------------------------------------------|
| Meas unit               | 40091    | Unsigned Integer | 1      | R/W         | U0 /2 /10              |              | DO measurement unit (0=mg/l, 2=ppm , 10= %sat)     |
| Alt/Press unit          | 40092    | Unsigned Integer | 1      | R/W         | U13 /43 /45 /47        |              | Altitude or pressure unit                          |
| Temp unit               | 40093    | Unsigned Integer | 1      | R/W         | U25 /26                |              | Temp measurement unit                              |
| LegacySensorCode        | 40094    | String           | 5      | R           |                        |              |                                                    |
| LegacySensorName        | 40099    | String           | 6      | R           |                        |              |                                                    |
| Signal Avg              | 40105    | Unsigned Integer | 1      | R/W         |                        | 0 /999       | Sig Avg (Filter)                                   |
| Log Interval            | 40106    | Unsigned Integer | 1      | R/W         | 0 /1 /2 /3 /4 /5 /6 /7 |              | Data log interval setup                            |
| LegacyLEDOperation      | 40107    | Unsigned Integer | 1      | R           |                        | 0 /1         |                                                    |
| Function Code           | 40108    | Unsigned Integer | 1      | R/W         |                        | 0 /65535     | Menu function code                                 |
| Next state              | 40109    | Unsigned Integer | 1      | R           |                        | 0 /65535     | Menu next state                                    |
| DO                      | 40110    | Unsigned Integer | 1      | R           |                        | 0 /0         | DO display tag                                     |
| Temperature             | 40111    | Unsigned Integer | 1      | R           |                        | 0 /0         | Temp display tag                                   |
| Alt or press            | 40112    | Unsigned Integer | 1      | R           |                        | 0 /0         | Alt or press display tag                           |
| Sample value            | 40113    | Unsigned Integer | 1      | R           |                        | 0 /21.0      | Sample value tag                                   |
| Offset                  | 40114    | Unsigned Integer | 1      | R           |                        | 0 /0         | Cal offset display tag                             |
| Serial Number           | 40115    | String           | 6      | R/W         |                        |              | Instrument serial number                           |
| Output mode             | 40121    | Unsigned Integer | 1      | R           | 0 /1 /2                |              | Output mode during cal (Act=0, Hold=1, Transfer 2) |
| Abort query             | 40122    | Unsigned Integer | 1      | R/W         | 0 /1 /2                |              | Menu abort (Abort=0, Back=1, Leave=2)              |
| NoYes query             | 40123    | Unsigned Integer | 1      | R/W         | 0 /1                   |              | Menu no/yes query(No=0, Yes=1)                     |
| DO (integer mg/l)       | 40124    | Integer          | 1      | R           |                        | -5 /21       | Integer DO in mgl                                  |
| DO (integer ppm)        | 40125    | Integer          | 1      | R           |                        | -5 /21       | Integer DO in ppm                                  |
| DO (integer %)          | 40126    | Integer          | 1      | R           |                        | 0 /200       | Integer Do in percent                              |
| Temperature (integer F) | 40127    | Integer          | 1      | R           |                        | 0 /122       | Integer Temp in F                                  |
| Temperature (integer C) | 40128    | Integer          | 1      | R           |                        | 0 /50        | Integer Temp in C                                  |
| Name                    | 40129    | String           | 8      | R/W         |                        |              | Assigned sensor name                               |
| Clean interval          | 40137    | Unsigned Integer | 1      | R/W         |                        | 0 /90        | Clean interval in days                             |
| Sensor life             | 40138    | Unsigned Integer | 1      | R           |                        | 0 /1830      | Life in days                                       |
| Boot version            | 40139    | Float            | 2      | R           |                        | 0 /10        | Boot code version                                  |
| Driver version          | 40141    | Unsigned Integer | 1      | R           |                        | 0 /100       | Device driver version                              |
| Days to clean           | 40142    | Unsigned Integer | 1      | R           |                        | 0 /365       | Days remaining until cleaning is required          |
| SENSOR LIFE             | 40143    | Unsigned Integer | 1      | R/W         | 0 /1 /2 /3 /4 /5 /6    |              |                                                    |
| Cap Lot Code            | 40144    | Unsigned Integer | 1      | R           |                        | 0 /65535     | Lot code of the sensor cap                         |
| Offset                  | 40145    | Float            | 2      | R           |                        | -50 /50      | Offset in set meas unit                            |
| AltPress                | 40147    | Float            | 2      | R           |                        | -5000 /15000 | Alt or Press in set unit                           |

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|-------------------|----------|------------------|--------|-------------|----------------|-----------|-------------|
| Ref voltage       | 40149    | Float            | 2      | R           |                | 0 /1024.0 |             |
| Int temp          | 40151    | Float            | 2      | R           |                | 0 /1024.0 |             |
| Int pressure      | 40153    | Float            | 2      | R           |                | 0 /1024.0 |             |
| Int humidity      | 40155    | Float            | 2      | R           |                | 0 /1024   |             |
| 5V                | 40157    | Float            | 2      | R           |                | 0 /1024   |             |
| LotCode           | 40159    | Unsigned Integer | 1      | R/W         |                | 0 /65535  |             |
| Crc               | 40160    | Unsigned Integer | 1      | R/W         |                | 0 /65535  |             |
| TestCapProgStatus | 40161    | Unsigned Integer | 1      | R           |                | 0 /65535  |             |
| TestCodeWriStatus | 40162    | Unsigned Integer | 1      | R           |                | 0 /65535  |             |
| pO2               | 40163    | Float            | 2      | R           |                |           |             |
| SysChange         | 40165    | Unsigned Integer | 1      | R           |                | 0 /10     |             |

## ALL Sensors and Analyzer: Classified ERROR Word - Register 49930

**Table 2 Error register**

| Bit | Error                            | Description                                               |
|-----|----------------------------------|-----------------------------------------------------------|
| 0   | Calibration error                | Faulty calibration detected                               |
| 1   | Electronic settings error        | Faulty electronic calibration/settings                    |
| 2   | Cleaning error                   | Error in cleaning cycle detected                          |
| 3   | Measuring module error           | Error in measuring module detected                        |
| 4   | System initialization            | Inconsistent settings detected, reset to factory settings |
| 5   | Hardware error                   | Faulty hardware detected                                  |
| 6   | Internal communication error     | Internal communication error detected                     |
| 7   | Humidity error                   | Excessive humidity detected                               |
| 8   | Excessive temperature            | Excessive temperature detected                            |
| 9   |                                  |                                                           |
| 10  | Sample feed warning              | Error in sample feed detected                             |
| 11  | Questionable calibration warning | Accuracy of previous calibration inadequate               |
| 12  | Questionable measurement warning | Accuracy of previous measurement inadequate/out of range  |
| 13  | Safety warning                   | Safety equipment error detected                           |
| 14  | Reagent warning                  | Reagent warning, e.g. fill level < min detected           |
| 15  | Service request warning          | Service request detected                                  |

## ALL Sensors and Analyzer: Classified STATUS Word - Register 49931

**Table 3 Status register**

| Bit | Status 1                                      | Description                                                |
|-----|-----------------------------------------------|------------------------------------------------------------|
| 0   | Calibration activated                         | Calibration in progress, measurement value not up to date  |
| 1   | Cleaning activated                            | Cleaning in progress, measurement value not up to date     |
| 2   | Service mode activated                        | Device in "Service" mode, measurement value not up to date |
| 3   | General error message                         | General error detected, refer to error text for details    |
| 4   | Measurement value channel 0, poor quality     | Measurement accuracy is not within specified limits        |
| 5   | Measurement value channel 0, range short-fall | Measurement value falls short of the specified range       |
| 6   | Measurement value channel 0, range exceeded   | Measurement value exceeds the specified range              |
| 7   | Measurement value channel 1, poor quality     | Measurement accuracy is not within specified limits        |
| 8   | Measurement value channel 1, range short-fall | Measurement value falls short of the specified range       |
| 9   | Measurement value channel 1, range exceeded   | Measurement value exceeds the specified range              |
| 10  | Measurement value channel 2, poor quality     | Measurement accuracy is not within specified limits        |
| 11  | Measurement value channel 2, range short-fall | Measurement value falls short of the specified range       |
| 12  | Measurement value channel 2, range exceeded   | Measurement value exceeds the specified range              |
| 13  | Measurement value channel 3, poor quality     | Measurement accuracy is not within specified limits        |
| 14  | Measurement value channel 3, range short-fall | Measurement value falls short of the specified range       |
| 15  | Measurement value channel 3, range exceeded   | Measurement value exceeds the specified range              |