Elcor Elgas Daniel

Elcor ELGAS Daniel communication protocol

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Supported device types and versions

The Protocol supports communication with gas-volume conversion devices ELCOR-94 (produced by ELGAS company) directly or through the DATCOM concentrator (tested with DATCOM-K1).

Communication line configuration

- Communication line category: Serial, SerialOverUDP Device Redundant.

The asynchronous transfer parameters according to the specific device setting.

Communication station configuration

- Communication protocol: **Elcor ELGAS Daniel**.
- Station address: value from 0 to 255. If the address is 0, the device must reply obligatorily.

Station protocol parameters

A station configuration dialog - tab "**Protocol parameters**".
The protocols affected some of the protocol optional parameters. The following station protocol parameters can be entered:

Table No. 1

Keyword	Full name	Description	Measuring Unit	Default value
RC	Retry Count	Poll repetition count in case of a communication error.		3
WFT	Wait First Timeout	First waiting for a response after sending the request.	ms	50 ms
WT	Wait Timeout	Delay between response readings until its finalization.	ms	50 ms
MWR	Max. Wait Retry	Repetition count of response readings until its finalization.		60
FULL_DEBUG	Full Debug	A high level of communication logging, received values of I/O tags are displayed.		NO
SRDTM	Static Data Read Timeout	Static values reading period (1-240 min). Static value is a configuration constant ELCOR-94, see table No. 2.	min	60 min
HARDP	Hourly Archive Periodic Reading	A period for the reading of the values of hourly archives (0-60 min). Value 0 disables the reading.	min	0 min

I/O tag configuration

Possible I/O tag types: **Di, Ai, Ci, TxtI, Ao, Co**.

The address of the I/O tag is entered in the form of text as follows:

```
[S]Group[B][Type][.Offset][.Bit]
```

where:

```
        S - Static value - it is read with the timeout which is defined by value of station protocol parameter St
atic Data Read Timeout.
          Group - number of GROUP, only one obligatory direct parameter
                B - BCD coded number
                   Type - value type: 'F'-Float[4], 'c'-Char[1], 'L'-Long[4], 'U'-Ulong[4], 'i'-Int[2], 'u'-Uint
[2]
                         .Offset - position in packet, implicitly at the beginning (0)
                                .Bit - bit number 1..8
```

The following special addresses can be entered as a text:

NO	Standardized volume, it is calculated internally according to the formula: (G63 + G70 + (G37 * 1000000000)) * G30
OP	The current pressure, it is calculated internally according to the formula: G61 * G29
OT	The current temperature, it is calculated internally according to the formula: G69 * G64
NPO	The current standardized flow, it is calculated internally according to the formula: (G60 * G27) + G28

A typical addresses configuration of the ELCOR-94 device is shown in table No. 2:

Table No. 2

Object description	Value type	Address	Measurement units
Battery status	Integer input	S35L	%
Relative density	Analog input	S17	
CO2 concentration	Analog input	S15	%
N2 concentration	Analog input	S16	%
Impulse constant	Analog input	S30	
Alternate compressibility	Analog input	S22	
Pressure lower limit	Analog input	S25	kPa
Pressure upper limit	Analog input	S26	kPa
Alternate pressure	Analog input	S21	kPa
Referential pressure	Analog input	S19	kPa
Flowage lower limit	Analog input	S32	m3/hour
Flowage upper limit	Analog input	S33	m3/hour
Temperature lower limit	Analog input	S23	°C
Temperature upper limit	Analog input	S24	°C
Alternate temperature	Analog input	S20	°C
Referential temperature	Analog input	S18	°C
Device, FW version	Text input	S46	
Customer number	Text input	S4	
Serial No. ELCOR-94	Text input	S3	
Gas meter serial No.	Text input	S2	
Temperature sensor serial No.	Text input	S0	
Pressure sensor serial No.	Text input	S1	
Momentary pressure	Analog input	OP	kPa
Momentary operating flowage	Analog input	69	m3/hour
Momentary standardized flowage	Analog input	NPO	Nm3/hour
Momentary temperature	Analog input	OT	°C
Accumulated error - pressure sensor error	Logical input	71c.4.7	
Accumulated error - pressure above maximum	Logical input	71c.4.2	
Accumulated error - pressure under minimum	Logical input	71c.4.1	
Accumulated error - flowage above maximum	Logical input	71c.4.6	

Accumulated error - temperature sensor error	Logical input	71c.4.5	
Accumulated error - temperature above maximum	Logical input	71c.4.4	
Accumulated error - temperature under minimum	Logical input	71c.4.3	
Error - pressure sensor error	Logical input	71c.3.7	
Error - pressure above maximum	Logical input	71c.3.2	
Error - pressure under minimum	Logical input	71c.3.1	
Error - flowage above maximum	Logical input	71c.3.6	
Error - temperature sensor error	Logical input	71c.3.5	
Error - temperature above maximum	Logical input	71c.3.4	
Error - temperature under minimum	Logical input	71c.3.3	
Grade of compressibility K	Analog input	52	
Standardized volume	Analog input	NO	Nm3
Diagnostics reset	Integer output	57	
Alternate standardized volume	Analog input	67U	Nm3
Alternate operating volume	Analog input	66U	m3
Operating volume	Analog input	62U	m3
Current time - day	Integer input	39Bc.3	
Current time - hour	Integer input	39Bc.4	
Current time - minute	Integer input	39Bc.5	
Current time- month	Integer input	39Bc.2	
Current time - second	Integer input	39Bc.6	
Current time - year	Integer input	39Bc.1	
Conversion number Z	Analog input	64	

The protocol supports reading from the ELCOR-94 data archive. It is possible to obtain the hourly records of the following values:

- The current temperature (I/O with "OT" address),
- The current pressure (I/O with "OP" address),
- Operating volume (I/O with group "62" address),
- Standardized volume (I/O with "NO" address).

Tell command GETOLDVAL starts the data archive reading.

Literature

- ELCOR-94, Daniel - Protocol physical layer description 29.8.1996, ELGAS s.r.o.
- Reference manuals of producer ELGAS s.r.o. http://www.elgas.cz

Changes and modifications

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Document revisions

- Ver. 1.0 - November 8th, 2007 - Document creation.

Related pages:

Communication protocols