Monitoring Controller Type G 3890 0034

Dupline®
Fieldbus | *Installationbus*

- Channel generator and logging unit
- Windows-based configuration software
- Up to 112 AnaLink signals
- Reading of analog and digital values via RS232
- Control of digital outputs via RS232
- Direct connection to printer through Centronics port
- Print-outs of continuous-, daily or history reports
- 48 loggins per point stored in EEPROM
- ISA alarm monitoring
- Alarm on-delay time configurable
- Built-in realtime clock and display
- 4 pushbuttons for manual operations
- AC or DC power supply

Product Description

Generator controller 1 is designed for monitoring of analog signals, measured by 1-channel AnaLink sensors. The generator, once configured, is able to monitor up to 112 analog signals and generate various reports on a standard IBM-graphics printer or compatible.

Ordering Key

G 3890 0034 230

Type: Dupline®
Logging unit
Power supply

Type Selection

Supply	Ordering no.
115/230 VAC	**G 3890 0034 230**
10 to 30 VDC	**G 3890 0034 800**

Supply Specifications

Power supply AC-type	Overvoltage cat. III (IEC 60664)
Rated operational voltage	
through term. 21 & 24	
jumper term. 22 & 23	230 VAC ± 15% (IEC 60038)
jumper term. 21 & 23	
and term. 24 & 22	115 VAC ± 15% (IEC 60038)
Frequency	45 to 65 Hz
Rated operational power	Typ. 7 VA/3 W
Rated impulse withstand	
voltage 115/230 V	4 kV
Dielectric voltage	
Supply - Dupline®	≥ 4 kVAC (rms)
Supply - Output	≥ 4 kVAC (rms)
Supply - Input	≥ 4 kVAC (rms)
Supply - Com. ports	≥ 4 kVAC (rms)
Power supply DC-type	Overvoltage cat. III (IEC 60664)
Rated operational voltage	
through term. 21 & 22	10 - 30 VDC
Reverse polarity protection	Yes
Rated operational power	7 W
Inrush current	1 A
Rated impulse withstand	
voltage	800 V
Dielectric voltage	
Supply - Dupline®	500 V
Supply - Output	200 V

Input/Output Specifications

Serial Port		RS 232, 9-pole female SUB-D
Pin assignment	T.D	Pin 2
	R.D	Pin 3
	GND	Pin 5
	RTS	Pin 7
	CTS	Pin 8
Dielectric voltage		
Com.port - Dupline®		≥ 2 kVAC (rms)
Parallel Port		Centronic
		25-pole female SUB-D
Pin assigment	Strobe	Pin 1
	Data D0-D7	Pins 2-9
	Busy	Pin 11
	Paper out	Pin 12
	GND	Pins 18-25
Dielectric voltage		
Com.port - Dupline®		≥ 2 kVAC (rms)
Output		Dupline® carrier
Output voltage		8.2 V
Current		< 100 mA
Short-circuit protection		Yes
Output impedance		≤ 15 Ω
Sequence time		Time for 1 pulse train ±1%
32 channels		38.6 ms
128 channels		132.3 ms
Analog channel update		
32 channels		9.75 s
128 channels		33.8 s
Distance to AnaLink sensors		See graph next page
Output		1 NPN transistor
Function		Watchdog
Output voltage V_{DD}		≤ 35 VDC
Output current		≤ 100 mA
Output voltage drop		≤ 2 V
Off-state leakage current		≤ 100 µA
Short-circuit protection		None
Built-in protective diodes		None
Dielectric voltage		
Output - Dupline®		≥ 4 kVAC (rms)
Output - Input		≥ 4 kVAC (rms)
Inductive loads		External noise sup. required

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Input/Output Specifications (cont.)

Input	Backup supply
Function	Real-time clock
Isolated in groups of	1 x 1
Input voltage range	4.5 to 9 V
Reverse polarity protection	Yes
Rated operational current	10 to 100 µA
Input resistance	> 47 kΩ
Cable length	< 0.5 m
Dielectric voltage	
Input - Dupline®	≥ 4 kVAC (rms)
Adjustment	Time, Date, Year, Day
4 tactile pushbuttons	Manual reporting
(Mode, Up, Down, Enter)	

Distance versus No. of Sensors

DC loop resistance (Ω) ≙ 1/2 cable distance

Example: Max. distance for 75 sensors D 8911 1010: 75 x 0.8 mA = 60 mA ⇒ loop resistance ~ 35 Ω. If 1.5 mm² cable @ 12 Ω/km is used, the distance is:

$$\frac{35\ \Omega}{2 \times 12\ \Omega/km} = 1.45\ km\ max.$$

Dupline® load (mA) from AnaLink sensors
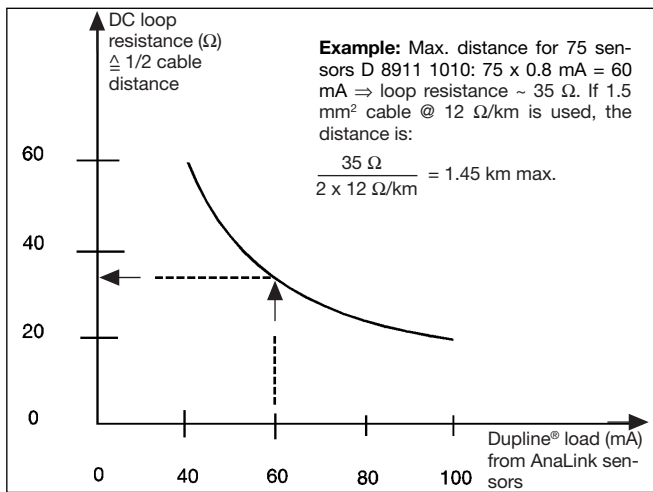
General Specifications

Real-time clock	
Accuracy	Better than ± 1 minute/month
Internal backup time	Typ. 120 hours
Unit parameter backup time	> 1 year
Power ON delay	< 2.5 s until start of Dupline® carrier [1]
Indication for	
Supply ON	LED, green
ON Line	LED, yellow
Busy	LED, yellow
Fault	LED, red
AM	LED, yellow
Time, date etc.	4-digit LCD display red background light
Environment	
Degree of protection	IP 20
Pollution degree	3 (IEC 60664)
Operating temperature	0° to +50°C (+32° to +122°F)
Storage temperature	-20° to +85°C (-4° to +185°F)
Humidity (non-condensing)	20 to 80% RH
Mechanical resistance	
Shock	15 G (11 ms)
Vibration	2 G (6 to 55 Hz)
Dimensions	
Material	
(see "Technical Information")	H8-housing
Weight	540 g

[1] < 90 s until start of analog measuring.

Wiring Diagrams

G 3890 0034 230
Dupline® — S
0.1 A / 35 V
Noise red.   Watchdog NPN
Centronic
RS 232
Supply
Backup 4.5-9 V
Power supply 230 VAC
Power supply 115 VAC

G 3890 0034 800
Dupline® — S
0.1 A / 35 V
Noise red.   Watchdog NPN
Centronic
RS 232
Supply 10-30 VDC 7 W
Backup 4.5-9 V

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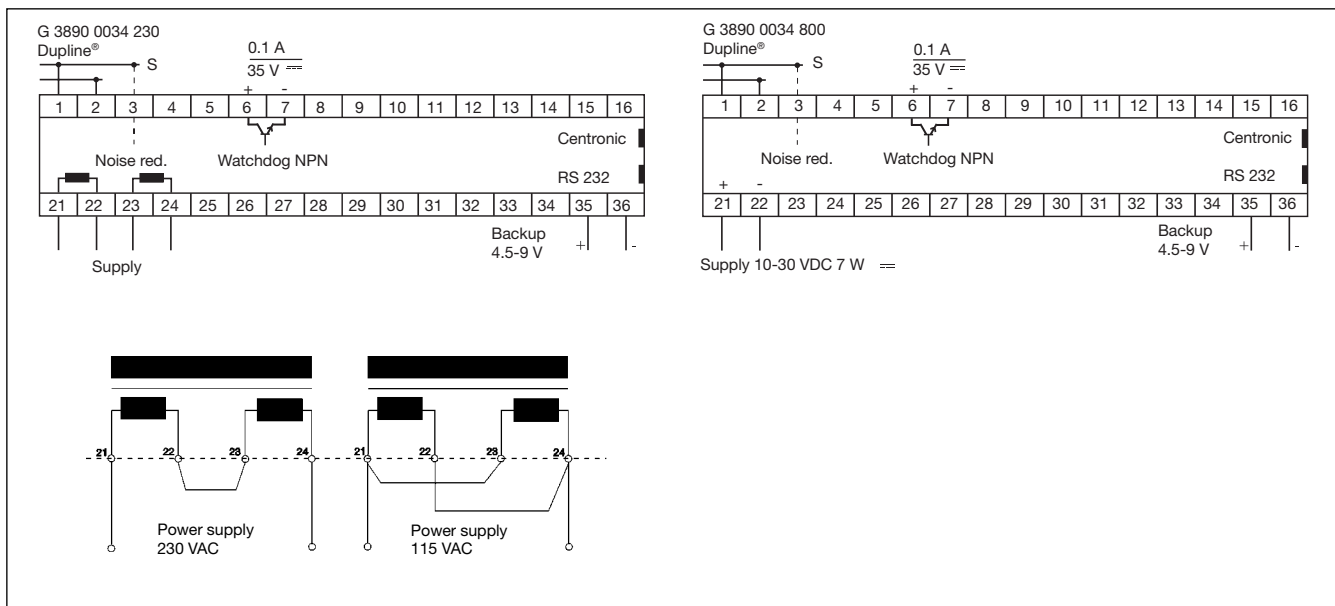
Mode of Operation

The G 3890 0034 230 is basically a channel generator which is capable of supplying and reading AnaLink sensors. It can operate in two different ways:

1) As a stand-alone unit (no PC required) with automated functions like printing out reports of monitored analog signals and ISA alarm monitoring of limit-values.

2) As a digital and analog I/O-system for a PC or PLC through the RS232 port.

Configuration (required for stand-alone operation)
The configuration is performed from a PC with a Windows based Software supplied with the unit. Complete configurations can be up- and downloaded to the unit via a RS-232 link or stored to disk. From the Object Oriented Graphically menues all relevant parameters can be setup in a easy way.

* Basic functions, such as number of channels, number of analog measuring points and logging intervals, are defined.

* Specific functions for each block of 16 measuring points are used for:
  - Enabling or disabling of measuring points.
  - Assigning a specific Ana-Link sensor to a measuring point.
  - Assigning alarm levels to a measuring point.
  - Assigning descriptive text for reporting.

* Range specification of 8 different types of sensors in engineering units.

Number of Dupline channels	128
Number of analog points	0
Dupline output mode	Normal Dupline Operation
Parallel port	Off

Default Settings
The controller is shipped with the following settings:

Setup
The four pushbuttons in the front are used together with the 4-digit LCD display for the basic setup: setting time and date, selecting report print-outs, selecting printer operation and serial port operation etc.

Display Mode
The display normally shows the
actual time. By pressing either the **UP-key** or the **Down-key**, the month, day of week and year will be displayed. By pressing **Enter,** the software revision number will be displayed. With the **Mode-key** the setup changes from display mode to main settings mode.

Main Settings Mode
When entering the Main Set-tings Mode, the unit is in the setup menu and the display shows **SEt**. By pressing **Enter** the unit scrolls through the setup menu. By pressing **Up** or **Down** the unit scrolls through the main setting menu.

Alarm Function
If enabled, the controller con-tinuously checks the actual readings from AnaLink sensors for a value within free selectable upper and lower alarm limits. Any reading outside this bandwidth causes the summary alarm channel B8 to turn ON. Additionally, a group alarm channel turns ON for easier alarm localisation (B1 for Ana-Link sensors in groups C-D, B2 for sensors in groups E-F etc.) The alarming follows the ISA alarm sequencing and uses the following channels for control:

Lamp test:	A2
Acknowledge:	A3
Reset:	A4
Continuous report request:	A5

Alarm Suppression
For every AnaLink sensor an ON-delay timer (0 - 255 m) may be assigned to suppress the alarm of its analog value. This function may be used to suppress the alarm generation of the signal, e.g. during defrosting.
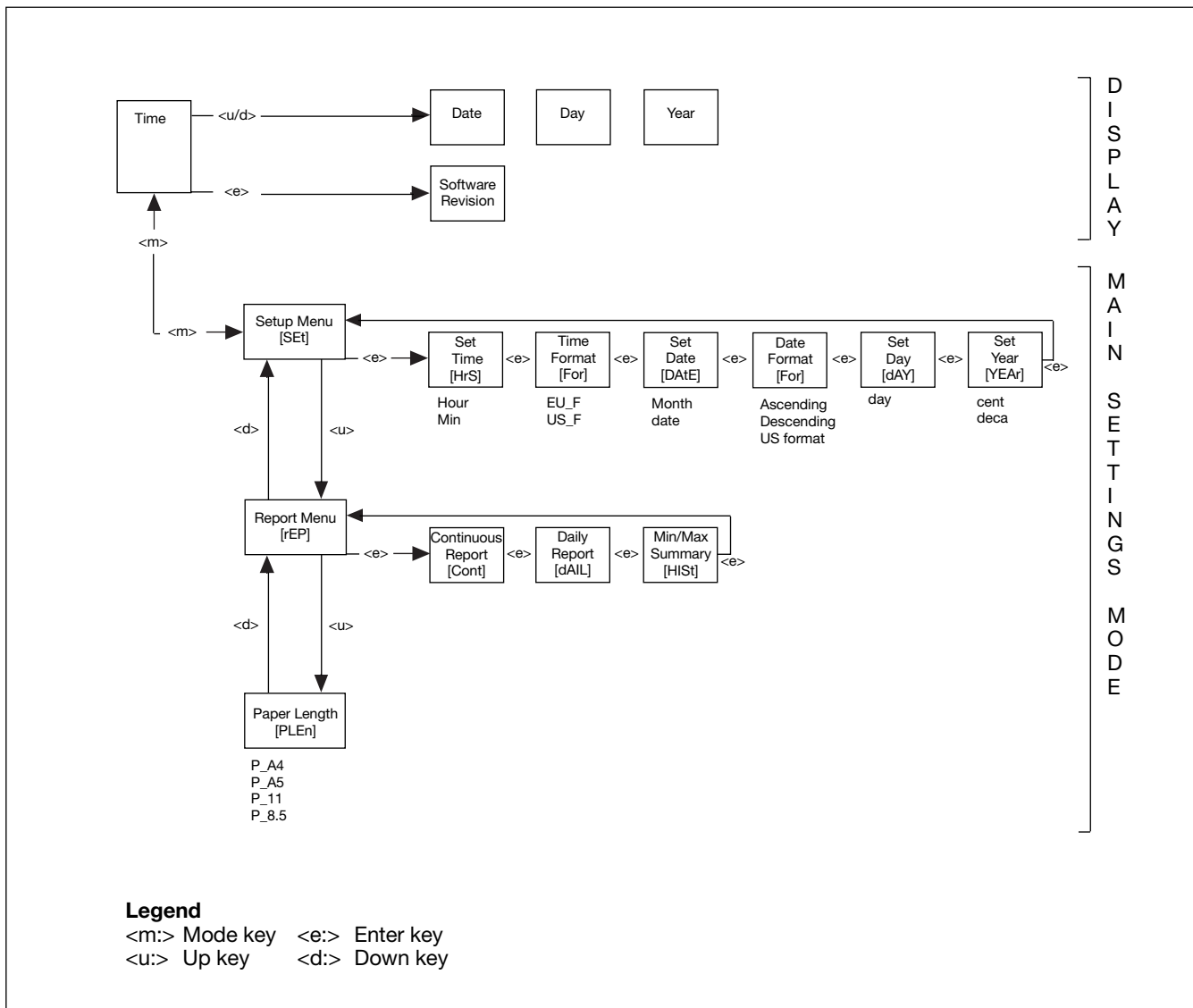
Multiplex Analog Outputs
If enabled, multiplexed analog receivers (G 3496 6470) or displays (D 6369 6475) may be used to output the signals from AnaLink sensors in analogue form or for display purposes. The AnaLink sensors are related to receivers (display) as follows:

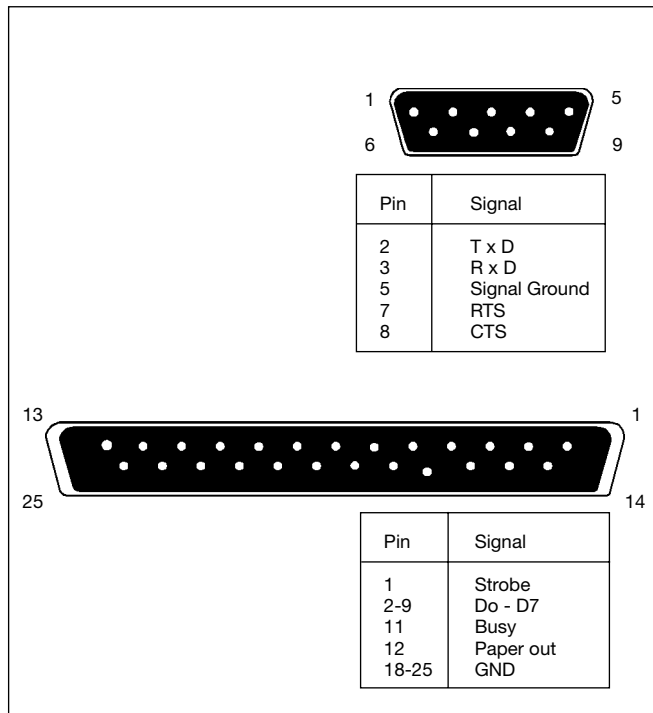| AnaLink channel	Receiver channel	Rec.Mux Address
C1	C-D	0
C2	C-D	1
.	.	.
.	.	.
.	.	.
D8	C-D	F
E1	E-F	0
.	.	.
.	.	.
.	.	.
P8	O-P	F

If the multiplexed analog output function is disabled, a digital receiver coded to the same channel as the AnaLink sensor can be used to indicate an alarm condition of that sensor.

For more information, please refer to user manual.

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Key Operation Diagram

Legend

<m:> Mode key   <e:> Enter key
<u:> Up key   <d:> Down key

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Pin Assignment

Pin	Signal
2	T x D
3	R x D
5	Signal Ground
7	RTS
8	CTS

Pin	Signal
1	Strobe
2-9	Do - D7
11	Busy
12	Paper out
18-25	GND

RS 232 Cables

9-pin male to controller / 9-pin female to PC

9-pin male to controller / 25-pin female to PC

Scope of Supply

1 x Monitoring Controller	D 3890 0034 ..
1 x AnaLink Sensor coding cable	GTS-CAB
1 x User Manual	MAN G 3890 0034 ENG
1 x RS 232 cable	RS 232-9 M/9F
1 x Configurations software	SW G3890 0034

Accessories

User manual	MAN G 3890 0034 ENG
RS 232 cable (9 pole F)	RS 232-9 M/9 F

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