

	PROSJEKTDOKUMENTASJON LED VMS FG		
Prosjekt:	E16 Kvamskleiva		
Prosjekt nr.:	101186		
Synopsis:	Ordre nr.: 865682		
Kunde:	Otera Traftec AS	Versjon:	B
Byggherre:	-	Ant sider:	9

05	07.02.2022	Endringer s. 1 og 9	ALH	FW
04	31.01.2022	Endringer s. 1, 5, 6, 9	ALH	FW
03	25.11.2021	Endringer s.1, 9	ALH	FW
02	25.10.2021	Endringer s.1, 3,4,5 og 9	ALH	FW
01	15.09.2021	Første utgave	ALH	FW
Rev	Dato	Beskrivelse	Skrevet av	Godkjent av

1 Godkjent	☐	Sign.
2 Ikke godkjent	☐	Sign.
Kommentarer: 		

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ORDRE OPPSUMMERING

Prosess	Pos	Str	Beskrivelse	Ensidig Tosidig	Bredde (mm) B	Høyde (mm) H	Feste
L002	9, 10	MS	Fartsgrense med frontåpning, firkantet	Ensidig	880	880	NM150 Skiltfeste
L006	74, 75	MS	Fartsgrense med frontåpning, firkantet	Ensidig	880	880	NM150 Skiltfeste

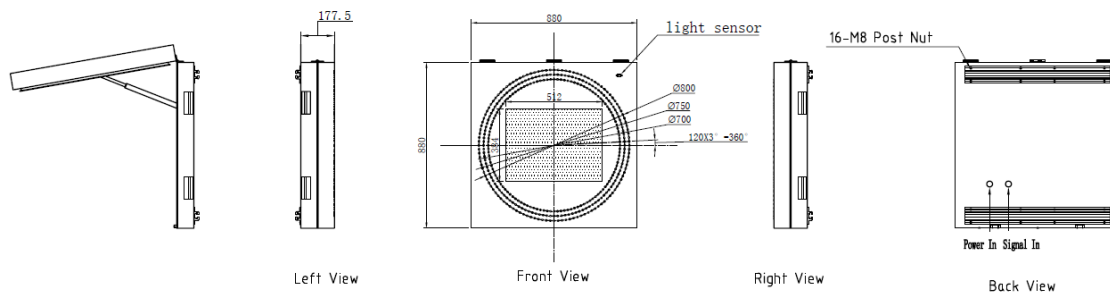
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1 SKILT

Modell	LED Billedpunktskilt (VSLS)
Produktnr.	16017000011
Sertifisering	EN12966
LED VMS SPESIFIKASJONER	
Modul-størrelse (mm)	-
Piksel-tetthet (px/m²)	-
Optikk egenskaper	
Klasser	EN12966
Luminans	L3
Luminansforhold	R2
Farge	C2
Spredningsvinkel	B6
Lyskontroll	32 nivåer
Skiltkasse egenskaper	
Ytermål (mm)	880 x 880
Tykkelse (mm)	178
Skjerm (mm)	-
Skjerm (pxl)	-
Vekt	40
Materialtype	Aluminium
Overflatebehandling	Pulverlakkert
	Front: RAL 9017
	Bakside: RAL 7032
Temperaturklasse (°C)	T2 (-25°C to +55°C)
Forurensingsklasse	D2
Kapslingsgrad	IP56
Kabelgjennomføring	M16, M25
Vedlikehold	Frontåpning
Elektriske egenskaper	
Nominell spenning	230V single phase 50Hz
LED kort-spenning	DC 4,2V
Effektforbruk Nom/Maks m² (±10%)	50 W/ 100 W
Kommunikasjon	TCP/IP via RJ45
Protokoll	ModBus

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1.1 Illustrasjoner/utsnitt



Tilstander skilt:

			
LED av	Posisjon 5	Posisjon 6	Posisjon 7

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2 STYRING

Type (kryss av):

Produktnr.	Beskrivelse		Dokument
16016010049	Direkte I/O styring for RGB	☐	ELS04-1
16095100414	Styrekort SC15G	☐	
16095100412	Relèkort SC28E (skillekort)	☐	
16016010054	ModBus TCP/IP for RGB	☒	T104
16016010010	OPC-UA Server- Linux	☐	ELS04-2
16095100425	Styreskap med HMI panel (LS)	☐	10000032-02
16095100426	Styrepanel med HMI for SSA (LS)	☐	
16095100402	SMART Kontrollstasjon Basismodul	☐	

* Se vedlegg for detaljer

3 IP adresser

Nr.	IP adresse	Maske	Gateway	Beskrivelse
1	10.5.152.170	255.255.255.0	10.5.152.1	HUG21FG600270 (SSA02)
2	10.5.152.171	255.255.255.0	10.5.152.1	HUG21FG600271 (SSA02)
3	10.5.152.172	255.255.255.0	10.5.152.1	HUG31FG602370 (SSA23)
4	10.5.152.173	255.255.255.0	10.5.152.1	HUG31FG602371 (SSA23)

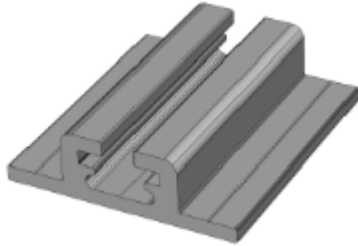
4 MERKING

Nr.	Serienummer	Tag	Beskrivelse
1			VSLs (Variable Speed Limit Sign)
2			VSLs (Variable Speed Limit Sign)
3			VSLs (Variable Speed Limit Sign)
4			VSLs (Variable Speed Limit Sign)

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5 MONTERING

Skilt i aluminium leveres med skinne EUV5134 (alu).



Figur 1: EUV5134 skinne

Sinnene er kompatible med alle typer festemateriell fra Euroskilt.

Festetyper (kryss av):

Produkt nr.	Beskrivelse		Dokument
22331020012	NM120 Skiltefeste m/VD-skinne	☐	Monteringsveiledning
22331030015	NM150 Skiltefeste m/VD-skinne	☒	Monteringsveiledning
22331000019	NM190/290 Skiltefeste m/VD-skinne	☐	Monteringsveiledning
21940000005	Klammer for gittermast (Modifisert)	☐	
16095201030	Syrefaste fester for kamjern, stål, fagverk	☐	
	Feste for portal	☐	

*Se vedlegg/Monteringsveiledning

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6 SERVICE

Service/Vedlikehold

For å holde frontplater rene må produktene inspiseres årlig og rengjøres for smuss.
For å unngå vanninntrenging med påfølgende kondensoppbygging og skader på elektronikk må det utføres kontroll av pakninger jevnlig.

Produktene tåler Statens Vegvesens normale vaskeprosedyrer. Det anbefales ikke å vaske skiltene fra undersiden/i underkant.

Ved bytte av styrekort må «Jumpere» settes lik utbyttet enhet (setter tilbakemeldinger og styrker).

Dette må settes før skiltet kobles til spenning. Se vedlagte skjemategninger for hvilke typer «jumpere» som er benyttet.

NB! Ved vedlikehold og bytte av enhet må enheten være strømløs, og spenningsprøving må være foretatt.

Ved behov for service:

Euroskilt AS
Reservatveien 8
3118 Tønsberg



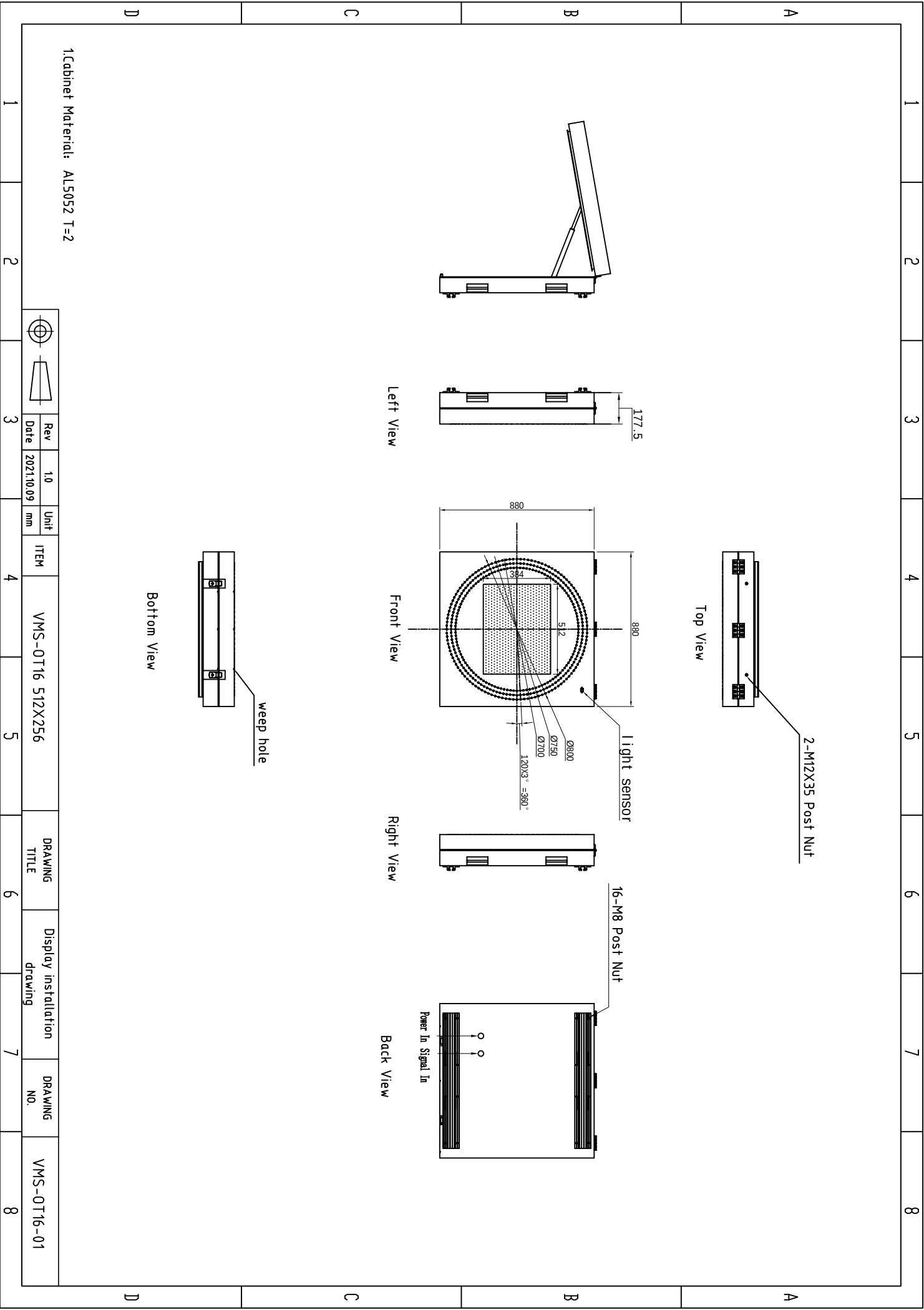
service@euroskilt.no

0 60 80

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7 VEDLEGG

Nr.	Beskrivelse	Dato	Rev.
1	YAHAM VSL 880X880, 3 digits (VMS-OT16 512x256)	09.10.2021	1.0
2	El. tegning (T125) 10001436-04-2 rev 0 ELS04-2	02.03.2021	0
3	Euroskilt Protocol Modbus TCP Yaham Sys, SSV Process Interface, SW23 Kvamskleiva	07.02.2022	3.0
4	Samsvarserklæring	20.11.2017	1.0
5	Ytelseserklæring Led VMS 062-02	21.10.2019	1.0



Geometri fra 3D CAD-modellen er ledende med mindre annet er oppgitt på 2D tegning eller i tilleggsspesifikasjon

Kopiering av dette dokumentet, g) det til andre og eller kommunikasjon av innholdet er forbudt i hensærskilt fullmakt. Overretelse vil kunne medføre straff og/eller erstatningsansvar i henhold til gjeldende lov. Alle rettigheter er reservert. I tillegg en innvilgelse av patent og/eller annen registrering av immaterielle rettigheter.



230V 50Hz

-X1

:L

Brown

:N

Blue

:PE

Yellow/green

-XD

Ethernet

RJ45

Notat:
Grensesnittet er RJ45 kontakt i switch -XD

Tegnet dato 02.03.2021	Tegner CBO	Godkjent dato 02.03.2021	Godkjent av CBO	Generell Toleranse NS-ISO 2768-1-m	Projeksjon 	Side 1 av 1	Skala 1:1		
Material			Overflatebehandling		Vekt NA	Prod. gruppe 073	Format A3		
Tittel Yaham grensesnitt - RJ45					Status APPROVED		Tegningsnr. 10001436-04-2		Revisjon 0
Tilleggsbeskrivelse ELS04-2 (T125) OPC-UA/Modbus					Artikkelnr.			Prosjektnr.	Dokument Type Assembly



Document Title:	Euroskilt Protocol Modbus TCP YahamSys – SSV Process Interface		
Document no.:	SW23- Kvamskleiva		
		Version:	A
		No. pages:	21

3	07.02.2022	Third ed. PP.; 1, 16-21	FW	FHW
2	18.10.2021	Second edition.	FHW	FHW
1	11.06.2021	First edition.	FHW	FHW
Rev	Date	Definition	Written by	Approv. by

1 Approved	☒	Kleven
2 not approved	☐	Sign.
Comments:		

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Document history

Version	Definition of change
1	First edition. Based on SW22 rev 8.2 interface 1 as is and with interface 2 updated to match SSV process interface PG26.
2	Second edition. Includes correction and more in-depth description of interface 2; "5.3 Directly controlled by VTS" and "5.2 Auto". Command Auto or VTS sets corresponding status feedback bits in status register "0x001B", which is wrong register. Correction, actual status register is "0x001D".
3	Third Edition (Kvamskleiva) Changes in 5.1, 5.2, 5,3 and 6,1 for this project

Referencedocument

No	Document No	Definition
1		

Introduction

Information
This Modbus protocol document contains two different interfaces. Both interfaces share functions but are separated with registers, the additional interface functionality was requested by customer. Interface 1: General purpose Modbus interface, dynamic (multiple registers) Interface 2: PG26 (Prosessgrensesnitt 26) interface, static (2 x 16bit registers) Interface 1 is first described, following by Interface 2.

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Information of use

Information
▪ In most scenarios using Display Control Registers, only 0x1001 are necessary, this function utilizes the “program” logic of the controller. ▪ Parameter for Time Control is used by the top system to start timing in combination with Image No. When timing is started, the sign must turn to the position that is valid for the timing. When Display Control Program or Display Picture are used, these will override Time Control. • VMS Control Registers can be written with modbus function code 0x16 “Write Multiple Registers” and read with Modbus function code 0x03 “Read Holding Registers”. • 2 VMS Control Registers - Midnight Reset 0x000A is intended as an option to the default RTC on sign controller, this function is intended to be used I rare cases. • 2.1 Intensity – Intensity Mode - When In auto Intensity, 2 x lux sensors are sampled for the environmental light, thereafter the sign will automatically adjust the light level according to EN12966. • 2.3 Intensity – Intensity - Maximum brightness that the sign can achieve is set to 100%, the maximum luminous intensity of VMS is X CD/M2. Luminous intensity = $X * 0.01 \text{ CD / M2}$, then Current Intensity = 1 Luminous intensity = $X * 0.50 \text{ CD / M2}$, then Current Intensity = 50. Luminous intensity = $X * 1.00 \text{ CD / M2}$, then Current Intensity = 100. This value is not allowed to be “0” The user may send a value between 1-200% which is converter to a value between 1 – 100, as example above illustrates.

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Information of use

Information
• 2 VMS Control Registers - Minimum Intensity “0x0007” are to be used to set the minimum light level threshold value. - This can be used on both manual and automatic mode, when using this register in default mode (auto), the value chosen between 1 – 200 % will override the minimum automatic light threshold level.

1 Default functions

Function nr	Description	Purpose
01	RTC (Real Time Clock)	A reset caused by a power-on reset or other unexpected conditions at other times, will keep the RTC time (not lost). When Modbus controller used with “0x000A”, it will set the calendar time to 00:00. Otherwise this will be done automatically by the RTC.

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Command: INTERFACE 1

Modbus function code 16 (Write Multiple Registers)

Modbus address: 40 000

2 VMS Control Registers

Modbus Address	Register	High Byte	Low Byte
0x0000	Intensity	Int. Mode	Intensity
0x0001	Time Control 1 Image 1	Program Time	
0x0002	Time Control 1 Image 4	Program Time	
0x0003	Time Control 2 Image 1	Program Time	
0x0004	Time Control 2 Image 2	Program Time	
0x0005	Time Control 2 Image 3	Program Time	
0x0006	Midnight Reset	Reset	Reserved
0x0007	Minimum Intensity	Min. Mode	Brightness

2.1 Minimum Intensity – Min. Mode

Bit	Description
0	Current Intensity Minimum Mode 0: Disable Min Mode Intensity....(Default) 1: Enable Min Mode Intensity
1...7	Reserved

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2.2 Brightness

Bit	Description
0..7	Current Intensity 1...200%: Intensity Value (%) (1 - 200)

2.3 Intensity – Intensity Mode

Bit	Description
0	Current Intensity Mode 0: Auto Intensity....(Default) 1: Manual Intensity
1...7	Reserved

2.4 Reset - Reset

Bit	Description
0	Midnight Reset 0: Reset deactivated....(floating) 1: Reset....(Start counting to 1440m)
1...7	Reserved

2.5 Intensity – Intensity

Bit	Description
0..7	Current Intensity 1...200%: Intensity Value (%) (1 - 200)

Note: Bit 0...7 = 1...200 % equals 1 – 100% Intensity
200% = max “auto” Intensity level

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2.6

Time Control -Program Time

Bit	Description
0	Activate Program 0: Do not activate Time Control...(Default) 1: Activate Time Control
1	Store Program 0: Do not store program 1: Store program
2...15	Time Control 0...65532: Minutes from Midnight...(1-1440)

3 Display Control Registers

Modbus Address	Register	High Byte	Low Byte
0x0008	Display Control Program	Program Cmd	Program No
0x0009	Display Picture 0 Image No	Image No	Reserved
0x000A	Display Picture 0 Duration	Show time	Blank Time
0x000B	Display Picture 1 Image No	Image No	Reserved
0x000C	Display Picture 1 Duration	Show time	Blank Time
0x000D	Display Picture 2 Image No	Image No	Reserved
0x000E	Display Picture 2 Duration	Show time	Blank Time
0x000F	Display Picture 3 Image No	Image No	Reserved
0x0010	Display Picture 3 Duration	Show time	Blank Time
0x0011	Display Picture 4 Image No	Image No	Reserved
0x0012	Display Picture 4 Duration	Show time	Blank Time
0x0013	Display Picture 5 Image No	Image No	Reserved
0x0014	Display Picture 5 Duration	Show time	Blank Time

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0x0015	Display Picture 6 Image No	Image No	Reserved
0x0016	Display Picture 6 Duration	Show time	Blank Time
0x0017	Display Picture 7 Image No	Image No	Reserved
0x0018	Display Picture 7 Duration	Show time	Blank Time
0x0019	Runteller write	Write_Counter	

3.1 Runteller Write -Write_Counter

Bit	Description
0..15	Periodically stores a value based on external increment cycles from user/PLC. Register (write) "0x0019" is automatically mirrored to status register (status) "0x001A". 0...65535

3.2 Display Control -Program Cmd

Bit	Description
0	Activate Program 0: Do not activate program 1: Activate program
1	Store Program 0: Do not store program 1: Store program
2...7	Reserved

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3.3 Display Page 0 – Image No

Bit	Description
0...7	Image 0...N: Image Memory No, 0...7 = 1 – 8

3.4 Program No – Program No

Bit	Description
0...7	Program 0...7: Program Memory No, 0...7 = 1 – 8

3.5 Display Picture Duration – Show Time

Bit	Description
0...7	Show 0...255: Show Time (x100ms)

3.6 Display Picture Duration – Blank Time

Bit	Description
0...7	Blank 0...255: Blank Time (x100ms)

Signal from sign:

Modbus function code 3 (Read holding Registers)

Modbus address: 30 000

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4 VMS Status Registers

Modbus Address	Register	High Byte	Low Byte
0x0000	VMS Status 0	DispCmdStatus	0x00
0x0001	VMS Status 1 (Reserved)	0x00	0x00
0x0002	Version Info	Protocol Ver.	Firmware Ver.
0x0003	Current Display Status	Program Info	Image Info
0x0004	Display Picture 0 Image No	Image No	Reserved
0x0005	Display Picture 0 Duration	Show Time	Blank Time
0x0006	Display Picture 1 Image No	Image No	Reserved
0x0007	Display Picture 1 Duration	Show Time	Blank Time
0x0008	Display Picture 2 Image No	Image No	Reserved
0x0009	Display Picture 2 Duration	Show Time	Blank Time
0x000A	Display Picture 3 Image No	Image No	Reserved
0x000B	Display Picture 3 Duration	Show Time	Blank Time
0x000C	Display Picture 4 Image No	Image No	Reserved
0x000D	Display Picture 4 Duration	Show Time	Blank Time
0x000E	Display Picture 5 Image No	Image No	Reserved
0x000F	Display Picture 5 Duration	Show Time	Blank Time
0x0010	Display Picture 6 Image No	Image No	Reserved
0x0011	Display Picture 6 Duration	Show Time	Blank Time

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0x0012	Display Picture 7 Image No	Image No	Reserved
0x0013	Display Picture 7 Duration	Show Time	Blank Time
0x0014	Display Picture 8 Image No	Image No	Reserved
0x0015	Display Picture 8 Duration	Show Time	Blank Time
0x0016	Temperature(Future)	VMS Internal	Cabinet
0x0017	Intensity	Int.Mode	Intensity
0x0018	VMS Status	VMS Status	Reserved
0x0019	Pixel Error Count	Pixel Error Count	Reserved
0x001A	Runteller Status	Stat_Counter	
0x001B	Comfailure	Comfail	Reserved
0x001C	Intensity	Min.Mode	Intensity

4.1 VMS Status – VMS Status

Bit	Description
0	Last Display Command Status 0: Display Cmd ok 1: Display Cmd Failed
1...7	Reserved

4.2 Runteller Status -Stat_Counter

Bit	Description
0..15	Periodically get mirrored value from register (write) "0x0019". 0...65535

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4.3 Comfailure -Comfail

Bit	Description
0	Register is used for detecting Com Failure, giving feedback with communication failure on status register "0x001B" && 0x001C, bit 4. Controller logic illustrated below < TIMERON (If register (write) (0x0019) == register (status) (0x001A) for 10s from 0x0004 bit 0-7)> Then Com failure is activated on both registers (status) "0x001B" && 0x001C, bit 4. Else: Com failure = deactivated. Bit 0 = 0 - Everything ok Bit 0 = 1 - Com failure
1...7	Reserved

4.4 Temperature – VMS Internal

Bit	Description
0...7	VMS Internal Temperature -127...128: 2's compliment in degrees

4.5 Temperature – Cabinet

Bit	Description
0...7	VMS Internal Temperature -127...128: 2's compliment in degrees

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4.6 Current Display Status – Program Info

Bit	Description
0	Current Program Shown 0...7: Current Program No 1...8
1	
2	
3	Current Picture Status 0: Picture 0 Show 1: Picture 0 Blank 2: Picture 1 Show 3: Picture 1 Blank 4: Picture 2 Show 5: Picture 2 Blank 6: Picture 3 Show 7: Picture 3 Blank 8: Picture 4 Show 9: Picture 4 Blank 10: Picture 5 Show 11: Picture 5 Blank 12: Picture 6 Show 13: Picture 6 Blank 14: Picture 7 Show 15: Picture 7 Blank
4	
5	
6	
7	
7	Reserved

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4.7 Current Display Status – Image Info

Bit	Description
0	Current Image Shown 0, 2...127: Current Image No 1: Blank Image
1	
2	
3	
4	
5	
6	
7	Reserved

4.8 Intensity – Intensity Mode

Bit	Description
0	Current Intensity Mode 0: Manual Intensity 1: Automatic Intensity
1...7	Reserved

4.9 Intensity - Intensity

Bit	Description
0...7	Current Intensity 1...200: Intensity Value (%)

Note: Bit 0...7 = 1...200 % equals 1 – 100% Intensity
200% = max “auto” Intensity level

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4.10 VMS Status – VMS Status

Bit	Description
0	Reserved
1	Reserved
2	Reserved
3	Reserved
4	Reserved
5	Reserved
6	Reserved
7	Reserved

4.11 Pixel Error Count – Pixel Error Count / Modulfeil

Bit	Description
0	Pixel Error Count 0 = 0 - ok (no fault-state) 0 = 1 - Pixel Error (fault in module-state)
1...15	Reserved

END OF INTERFACE 1

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Command: INTERFACE 2

Modbus function code 16 (Write Multiple Registers)

Modbus start address: 40 000

5 PG26 Write Registers

Modbus Address	Register	High Byte	Low Byte
0x001A (DEC 40026)	PG26 Write Register	PG26_Write_cmd	

5.1 PG26 Write Register – PG26_Write_cmd

Bit	High	Low
0	Position 1: Show image in location 001	
1	Position 2: Show image in location 002	
2	Position 3: Show image in location 003	
3	Position 4: Show image in location 004	
4	Reserved	
5	Reserved	
6	Auto	
7	Directly controlled by VTS	
8	LED OFF (LED sign dark)	
9	Position 5: Show image in location 005	
10	Position 6: Show image in location 006	
11	Position 7: Show image in location 007	

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12	Position 8: Show image in location 008	
13	Activate command	
14	Cancel command	
15	Preview enabled	

Note: bit 6, 7, 13, 14 and 15 is not applicable.

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5.2 Auto (not applicable)

Description
<i>Command Auto:</i> — Sign is controlled by external automatic routine. <i>Command Auto = High (Auto activated)</i> — When command Auto, bit 6 = HIGH is written to write register 0x001A, — both the following status bits for specified register is set as below: — Set Status register “0x001D”, bit 6 = HIGH (Directly controlled by VTS) — Set Status register “0x001D”, bit 7 = LOW (Directly controlled by VTS or Auto) <i>Command Auto = Low (Auto deactivated)</i> — When command Auto, bit 6 = LOW is written to write register 0x001A, — both the following status bits for specified register is set as below: — Set Status register “0x001D”, bit 6 = LOW (Local or Auto) — Set Status register “0x001D”, bit 7 = HIGH (Local)

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5.3 *Directly controlled by VTS (not applicable)*

Description
<i>Command VTS:-</i> — Sign is controlled by VTS. <i>Command VTS = High (VTS activated)</i> — When command VTS, bit 7 = HIGH is written to write register 0x001A, — both the following status bits for specified register is set as below: — Set Status register “0x001D”, bit 6 = HIGH (Directly controlled by VTS) — Set Status register “0x001D”, bit 7 = LOW (Directly controlled by VTS or Auto) <i>Command VTS = Low (VTS deactivated)</i> — When command VTS, bit 7 = HIGH is written to write register 0x001A, — both the following status bits for specified register is set as below: — Set Status register “0x001D”, bit 6 = LOW (Local or Auto) — Set Status register “0x001D”, bit 7 = HIGH (Local)

Modbus	TCP/IP	Doc. no:	SW23	Dato:	07.02.22	Rev.:	3
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Signal from sign:

Modbus function code 3 (Read holding Registers)

Modbus start address: 30 000

6 PG26 Status Registers

Modbus Address	Register	High Byte	Low Byte
0x001D (DEC 30029)	PG26 Status Register	PG26_Status_cmd	

6.1 PG26 Status Register – PG26_Status_cmd

Bit	High	Low
0	Shows status position 1	
1	Shows status position 2	
2	Shows status position 3	
3	Shows status position 4	
4	Error	
5	Command received	Command completed
6	Directly controlled by VTS	Local or Auto
7	Local	Directly controlled by VTS or Auto
8	Time control started	Time control off
9	Shows status position 5	
10	Shows status position 6	
11	Shows status position 7	

Modbus	TCP/IP	Doc. no:	SW23	Dato:	07.02.22	Rev.:	3
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12	Shows status position 8	
13	Module error	
14	LED / light-sign OFF (LED sign dark)	
15	Preview-enabled	Preview-off

Note: bit 6, 7, 8 and 15 is not applicable.

END OF INTERFACE 2

Samsvarserklæring

LED VMS RGB YAHAM 07122020_1

1. Varetypens unike identifikasjonskode: LED VMS RGB YAHAM og alle dens produktalternativer

2. Tilsiktet bruksområde: Variable trafikkskilt installert permanent for instruksjon og veiledning av trafikanter på offentlig og privat vei, inkludert tunneler.

3. Produsentens representant:



Euroskilt AS, Reservatveien 8, 3118 Tønsberg, Norge

4. Denne samsvarserklæringen utstedes på produsentens eneansvar

5. Harmonisert produktstandard: EN-12966-1:2005+A1:2009

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6. Relevante standarder:

Harmonisert standard	EN-12966-1:2005+A1:2009	Complies to
IP	IEC/EN 60529	IP66

Erklærer herved at produkt i punkt 1. leveres med CE merke og er i samsvar med produktspesifikasjoner i punkt 6. Samt er i henholdt til Forskrift om elektrisk utstyr §22

Ytelser for denne byggevaren er spesifisert i Ytelseserklæring

Underskrevet for produsenten og på dennes vegne av:

A handwritten signature in blue ink that reads "Håkon SAHLSTEN".

Håkon Sahlsten, produksjef Euroskilt AS
Reservatveien 8, 3118 Tønsberg, Norge
21. oktober 2019

Ytelseserklæring 073-LED VMS RGB YAHAM

Sted og prosess	Euroskilt AS / Produksjon / Produksjon Tønsberg / Produkt / LED VMS	Siste revisjonsdato	07.09.2020
Sist godkjent dato	07.12.2020 (Håkon Sahlsten)	Neste revisjonsdato	20.10.2021
Dato endret	07.12.2020 (Håkon Sahlsten)	Dokumentansvarlig	Håkon Sahlsten

1. Varetypens unike identifikasjonskode: LED VMS RGB YAHAM

2. Tilsiktet bruksområde: Variable trafikkskilt installert permanent for instruksjon og veiledning av trafikanter på offentlig og privat land, inkludert tunneler.

3. Produsent:



Euroskilt AS, Reservatveien 18, 3118 Tønsberg, Norge

4. Autorisert representant: Håkon Sahlsten.

5. System eller systemer for vurdering og verifikasjon av byggevarers ytelser: System 1

6. Harmonisert produktstandard: EN-12966-1:2005+A1:2009

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7. Angitte ytelser:

Vesentlige egenskaper	Ytelse	Harmonisert standard
Dynamisk vindlast	WL9	EN 12966-1:2005+A1:2009
Dynamisk snølast	DSL0	
Kollisjonstest	Godkjent	
Farge	C2	
Luminans	L1, L2, L3(*)	
Luminansforhold	R3	
Spredning	B1, B2, B3, B4, B5, B6	
Ensartethet	Godkjent	
Synlig flimmer	Godkjent	
Temperatur	T2	
IP grad vann	P3 IPx6	
IP grad støv	P3 IP5x	
Elektromagnetisk emisjon	Godkjent	
Elektromagnetisk immunitet	Godkjent	
Elektrisk sikkerhet	Godkjent	
Forurensingsmotstand	D1	

Ytelser for denne byggevaren, som er anført ovenfor, er i overensstemmelse med de angitte ytelsene. Denne ytelseserklæringen er utarbeidet i overensstemmelse med forordning (EU) nr. 305/2011 under eneansvar til produsenten, som er anført ovenfor.

Underskrevet for produsenten og på dennes vegne av:

Håkon Sahlsten

Håkon Sahlsten, produktsjef Euroskilt AS
Reservatveien 18, 3118 Tønsberg, Norge