	PROSJEKTDOKUMENTASJON LED VMS PÅBUDSKILT		
Prosjekt:	E18 Rugtvedt Dørdal		
Prosjekt nr.:	100491		
Synopsis:	Ordre nr. 858106		
Kunde:	Otera Traftec AS	***Versjon:***	A
Byggherre:	-	***Ant sider:***	8

02	08.09.2021	Endring s 1, 8	ALH	FW
01	19.05.2021	Første utgave	ALH	FW
Rev	***Dato***	***Beskrivelse***	***Skrevet av***	***Godkjent av***

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

Innholdsfortegnelse

1 SKILT 3
1.1 Illustrasjoner/utsnitt 4

2 STYRING 5

3 MERKING 5

4 MONTERING 6

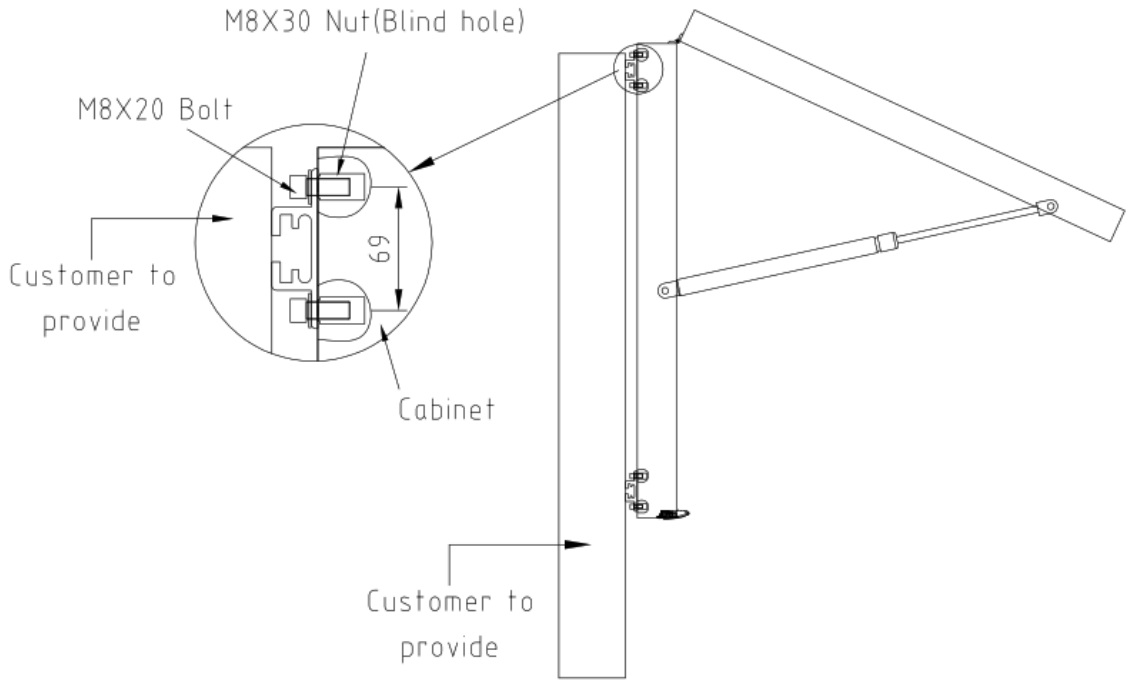
5 SERVICE / VEDLIKEHOLD 7

6 VEDLEGG 8

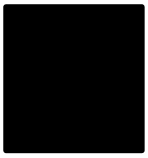
1 SKILT

Modell	LED Billedpunktskilt (VSLS)
Produktnr.	16000000009
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	
Yttermål (mm)	1090 x 1090
Tykkelse (mm)	178
Skjerm (mm)	N/A
Skjerm (pxl)	N/A
Vekt	70
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	I/O (YAHAMvms TCP)

1.1 Illustrasjoner/utsnitt



Tilstander skilt:

			
Tilstand 1	**Tilstand 2**	**Tilstand 3**	**Tilstand 4**

*Se vedlegg for detaljer

2 STYRING

Type (kryss av):

Produktnr.	Beskrivelse		Dokument
16016010049	Direkte I/O styring for RGB	☒	ELS04-1
16095100414	Styrekort SC15G	☐	
16095100412	Relèkort SC28E (skillekort)	☒	
		☐	
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	☐	

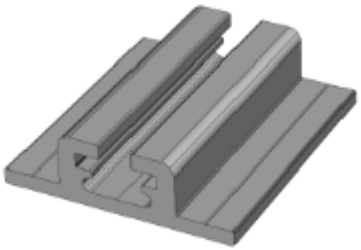
* Se vedlegg for detaljer

3 MERKING

Nr.	Serienummer	Tag	Beskrivelse
1			LED VMS
2			LED VMS

4 MONTERING

Skilt i aluminium leveres med skinne EUV5134 (alu).



Figur 1: EUV5134 skinne

Skinnene er kompatible med alle typer festemateriell fra Euroskilt.

Festetyper (kryss av):

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

*Se vedlegg/Monteringsveiledning

5 SERVICE / VEDLIKEHOLD

Vennligst se vedlegg «Vedlikeholdshåndbok» for detaljer.

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

Ved behov for service:

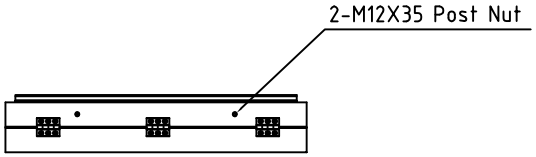
Euroskilt AS
Reservatveien 8
3118 Tønsberg

service@euroskilt.no

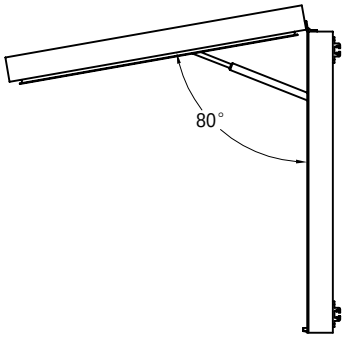
0 60 80

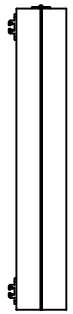
6 VEDLEGG

Vedlegg nr.	Beskrivelse	Dato	Rev.
1	YHT216082 IO VSLS	17.06.2021	1.0
2	YHT216082-83 Topological Diagram	22.06.2021	1.0
3	Monteringsveiledning	22.06.2020	1.0
4	Ytelseserklæring	21.10.2019	1.0
5	YHT216082 User Manual	28.07.2021	A

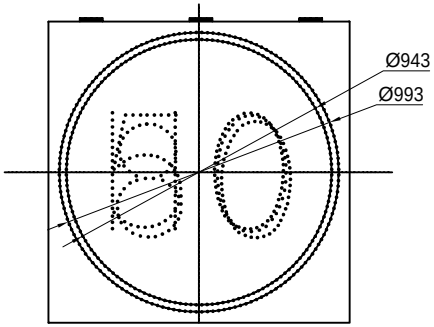


Top View

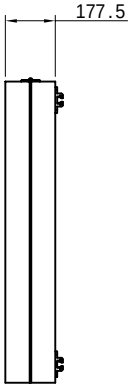




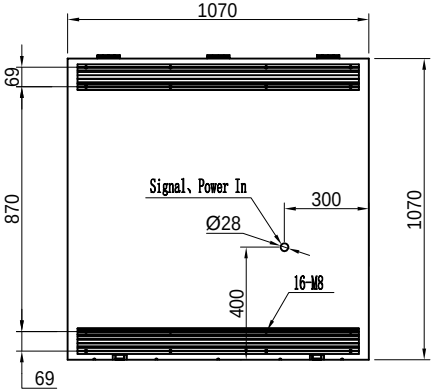
Left View



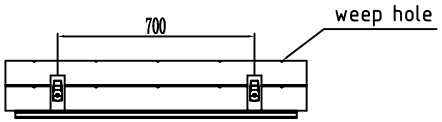
Front View



Right View



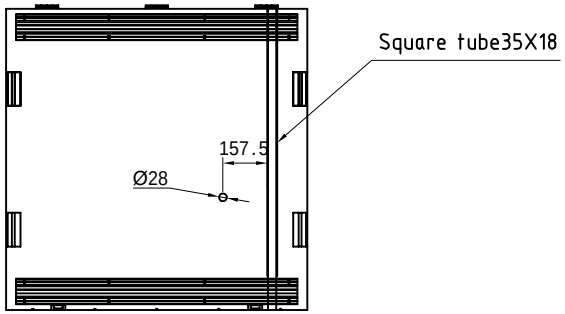
Back View



Bottom View

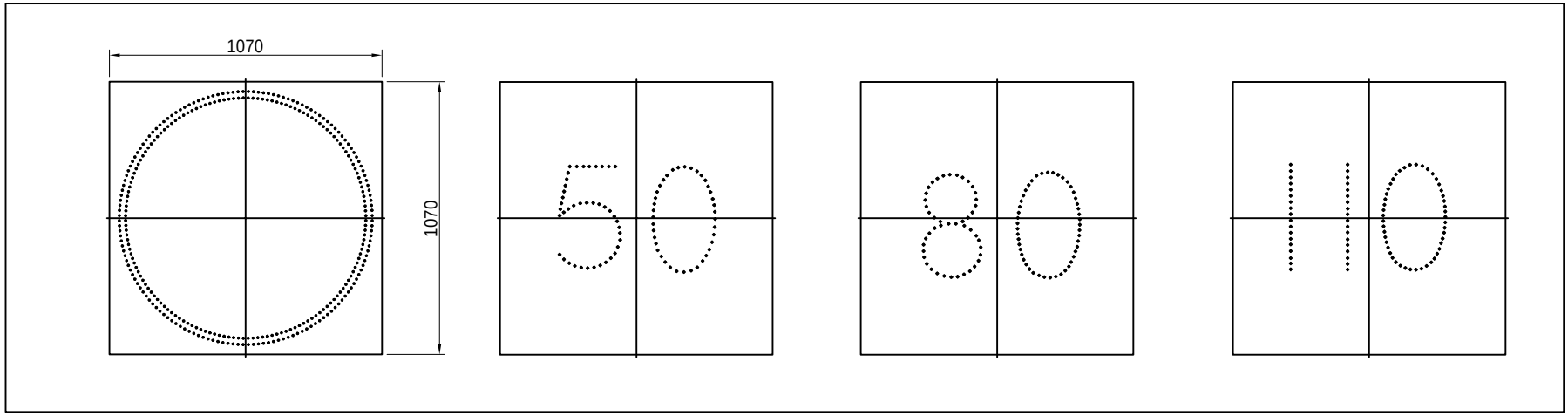
1.Cabinet Material: AL5052 T=2

Rev	1.0	Unit	ITEM	Modbus protocol of SLS	DRAWING TITLE		DRAWING NO.
Date	2021.06.17	mm					

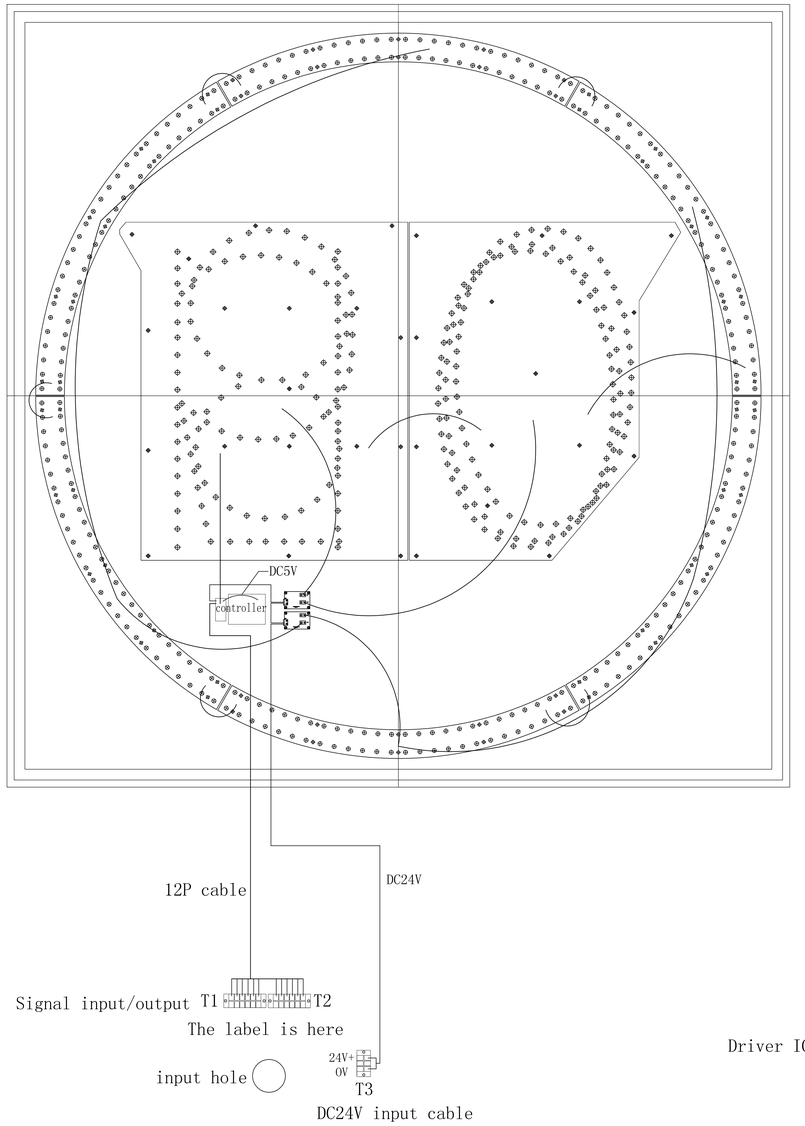


1.Cabinet Material: AL5052 T=2

	Rev	1.0	Unit	ITEM		DRAWING TITLE		DRAWING NO.
	Date	2021.06.17	mm					


1070
1070
50
80
110

Rear view IO port 90sets



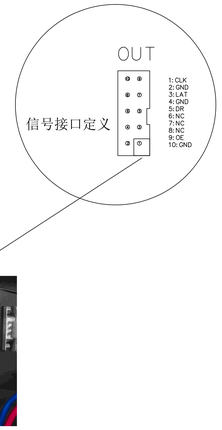
VSLS for Rugdvedt – Dordal project

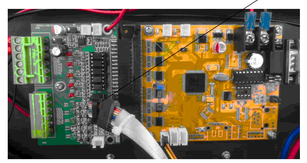
1. Layout of the SLS prototype matrix
   ES FG SS 50 70 80 90 110 + Arbeidsmann 30.10.2018.dwg

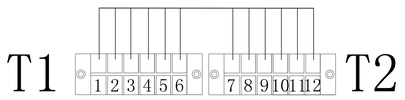
2. ~~Modbus protocol of SLS~~
   N/A

3. Layout of terminal block to IO port
   10001436-04-1 rev 2

4. Voltage level
   24VDC







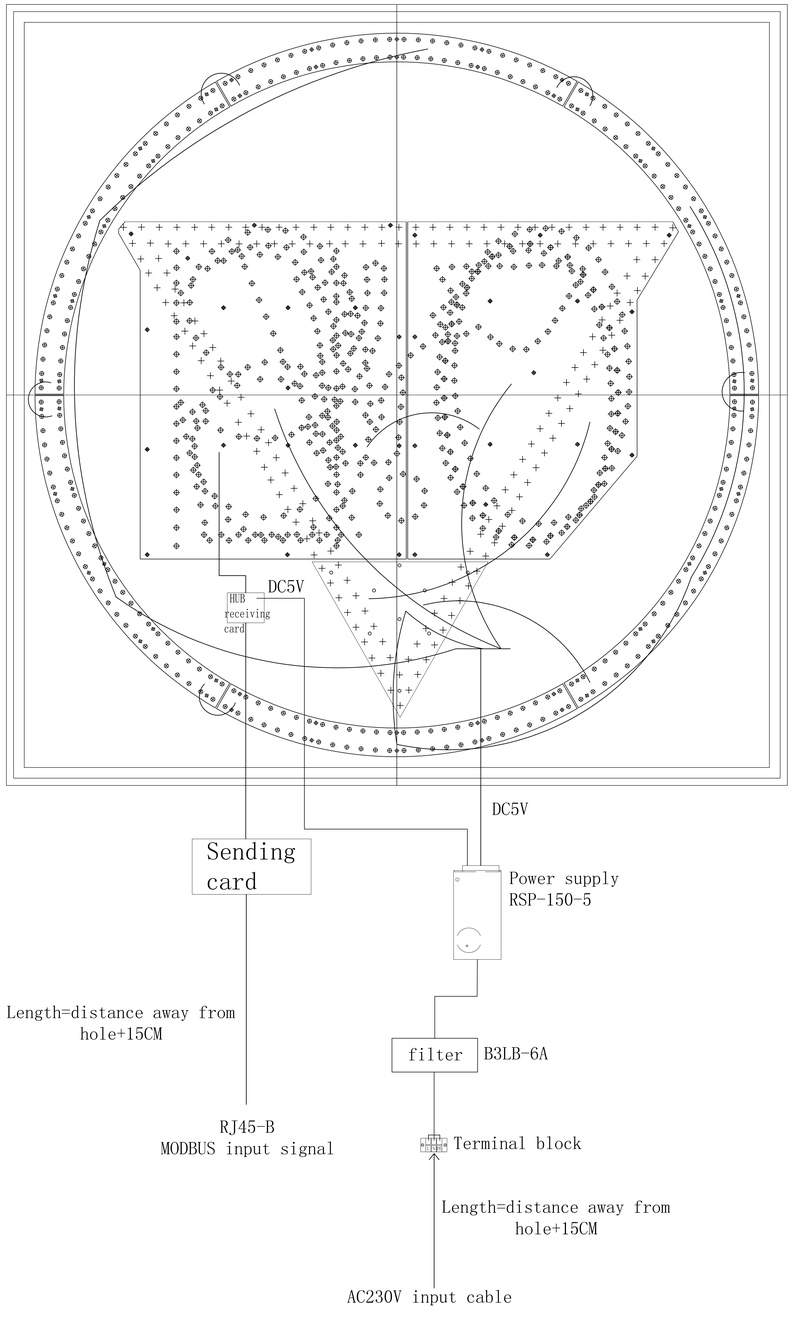
	Terminal block	Controller	Display content
1	+24VDC	DC24V	
2	0V	0V	
3	DI1	SIN1	110
4	DI2	SIN2	80
5	DI3	SIN3	50
6	DI4	SIN4	
7	DO1	SO1	110
8	DO2	SO2	80
9	DO3	SO3	50
10	DO4	SO4	
11	DI5	DIM	
12	DO5	ALR	

Driver IC:MBI5124

Control system:
Controller: JT200-IO
Power module: DCDC6(42)-5V60W-05

Rev.	Unit	项目 ITEM	IO	图名 DRAWING TITLE	TP	图号 DRAWING NO.	TP-02
A	mm/inch						

Rear view Modus protocol 100sets

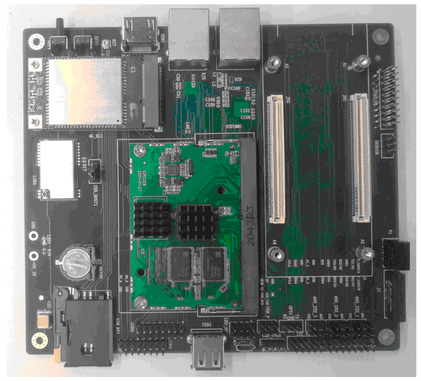


1. Layout of the SLS prototype matrix
   ES FG SS 50 70 80 90 110 + Arbeidsmann 30.10.2018.dwg

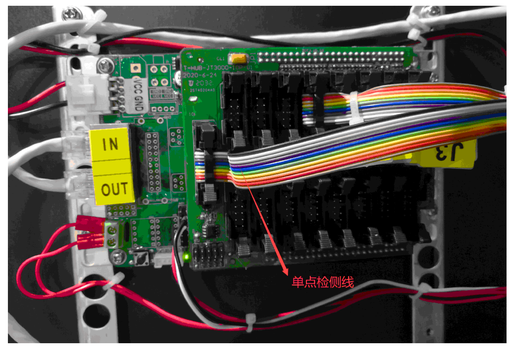
2. Modbus protocol of SLS
   SW15.pdf
   10001436-04-2 rev 0

3. ~~Layout of terminal block to IO port~~
   N/A

4. Voltage level
   230V AC 50Hz



Sending card



Receiving card

Driver IC:MBI5124

Control system:
1. Sending card: SZR3328+FPGA
2. JT3000+HUB
3. Power supply: RSP-150-5
4. Filter: B3LB-6A

	Rev.	Unit	项目 ITEM	MODBUS	图名 DRAWING TITLE	TP	图号 DRAWING NO.	TP-01
	A	mm/inch						

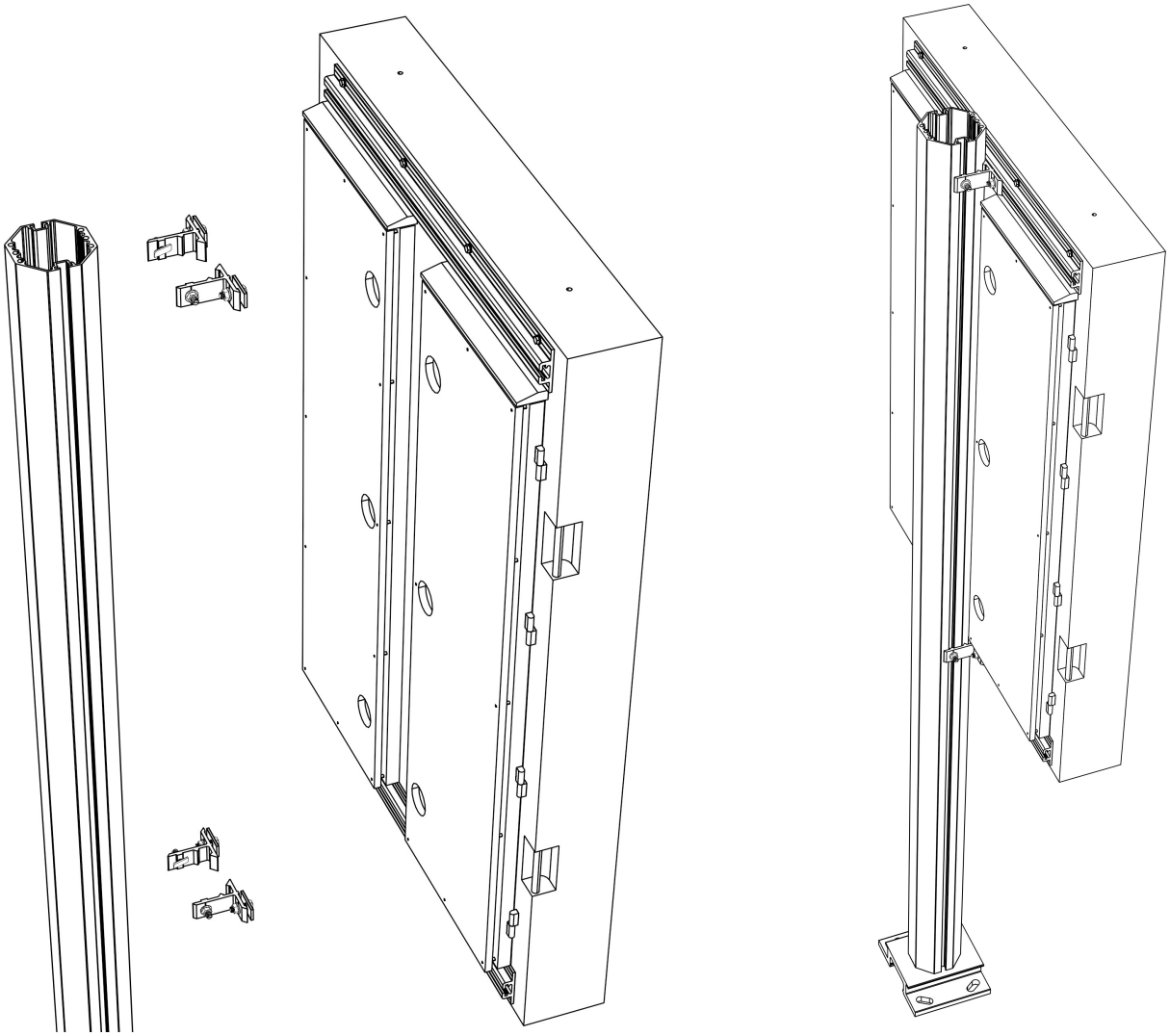
Monteringsveiledning
Montering av RGB skilt på Norsafe Mast

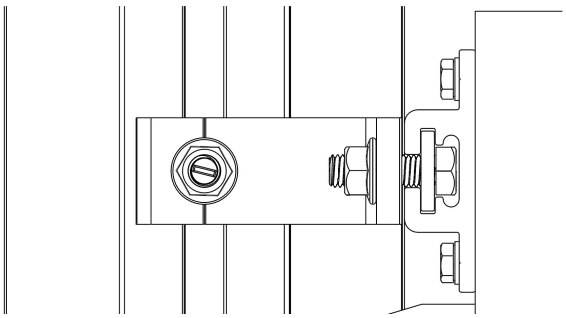
Ved montering av RGB skilt på Norsafe Mast må alltid min. 4 stk. NM skiltfester brukes.
Se egne datablad for fester til respektive mastestørrelser.
2 stk. skiltfester monteres for hver skinne pr. mast. Skiltfeste tres inn fra siden.
Det skal brukes fester med glideskinne, firkanthodebolt må ikke brukes.

Deretter løftes/heises skiltet opp mot masten.

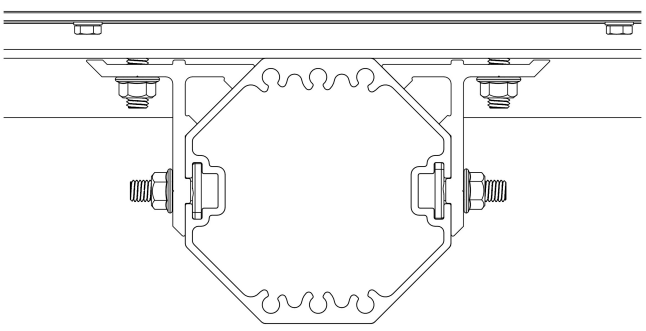
Når skiltet er på plass skyves skiltfestene inn mot masten og hammerhodeboltenes hoder føres vertikalt inn i sporet i masten. Deretter dreies hammerhodeboltene slik at de får festegrep i mastesporet. Et strekmerke på enden av bolten angir når bolten står riktig.
Mutrene trekkes til som følger: M8 = 22Nm, M12 = 76Nm.

Kun medfølgende muttere må brukes. Det skal ikke brukes smøremidler ved montering.
De vibrasjonssikre Safe-Lock låsemutrene har Gleitmo glidebelegg. Grease/fett må ikke brukes.





Mast, skinne og feste sett fra siden



Mast, skinne og fester sett ovenfra

Ytelseserklæring 073-LED VMS RGB YAHAM

Sted og prosess	Euroskilt AS / Produksjon / Produksjon Tønsberg / Produkt / LED VMS	**Siste revisjonsdato**	07.09.2020
		Neste revisjonsdato	20.10.2021
Sist godkjent dato	07.12.2020 (Håkon Sahlsten)	**Dokumentansvarlig**	Håkon Sahlsten
Dato endret	07.12.2020 (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.Harmoniseret produktstandard: EN-12966-1:2005+A1:2009
Teknisk kontrollorgan nr. 0407 – CRP – 1350 (IG-228-2017) INSTITUTO GIORDANO

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

VSLS

LED Display User Manual

Version: A

Project Number：YHT216082

WE APPRECIATE YOUR CHOOSING US!

Using Guide:

Before installing and operating any devices, please read and follow the instructions!

Warning:

- ✓ To prevent any bodily injury, please read this installation manual before you connect the system to its power.
- ✓ Check all the AC power connections being proper before turn the power on.
- ✓ Turn off the power, including LED Screen, Terminal Computer, System Box and Monitor before doing any maintenance.
- ✓ Do not touch the power supply when the power is on.

Caution:

- ✓ To prevent any devices damage or loss of data, please read user manual before you operate the display.
- ✓ Turn off the power, including LED Screen, Terminal Computer, System Box and Monitor before connecting any cables.
- ✓ Wear the anti-static belt on the hand before replacing any electronics parts.

NOTE:

Design and specifications are subject to change without prior notice for the purpose of performance improvement.

Use **Metric Tools** to tighten all the Screws

Date: July 28, 2021

Contents

LED DISPLAY SPECIFICATIONS 1

PACKAGE LIST 1

EQUIPMENT DESCRIPTION 1

DISPLAY SIZE AND INSTALLATION 1
DISPLAY EXTERIOR 2
DISPLAY INTERIOR 4

LED DISPLAY INSTALLATION 5

INTRODUCTION OF LED DISPLAY INSTALLATION 5
MECHANICAL INSTALLATION 5
Install the display to the display-structure 5
Entire LED display's cabinet layout 6
ELECTRICAL INSTALLATION 6
Input Electric Wiring Connection 7
SIGNAL INSTALLATION 7
Signal Flow Graphs 7
Input Signal 8
Control System in Display 9
LIGHT SENSOR ..... **FEIL! BOKMERKE ER IKKE DEFINERT.**

CAUTION NOTE 9

MAINTENANCE 9

MAINTENANCE OF MODULE 9
MAINTENANCE OF SYSTEM BOARDS/CARDS 9
MAINTENANCE OF CABINETS 9
MAINTENANCE OF POWER & SIGNAL CABLES 9
MAINTENANCE OF POWER SUPPLY 10
CLEANING DUST GUARD PERIODICALLY 10

KEY 10

LED display specifications

Item	Description	Unit	Remark
Product Name	Traffic Sign		
Model Type	YHT-VSLS-CMS-E-IO		
Pixel Pitch	-	mm	
Pixel Density	-	P/ m^2	
Pixel Configuration	1R1W		
LED	Union LED		
LED Model	510		
Control Mode	Asynchronous		
Display Dimension	1070(W)x1070(H)		
Display Resolution	-		
Module size	-	mm	
Module Resolution	-	Pixels	
Brightness	12400	nits	
Cabinet Material	AL		
Cabinet Color	Black		
Protect Level	IP65		
Maintenance	Front Flip Cover		
Input Voltage	AC230V	V	
PC Monitor Resolution Request	1024(W) × 768(H)	Pixels	
Module Max Power Consumption	23W	W	
Display Max Power Consumption	70	W	

Package list

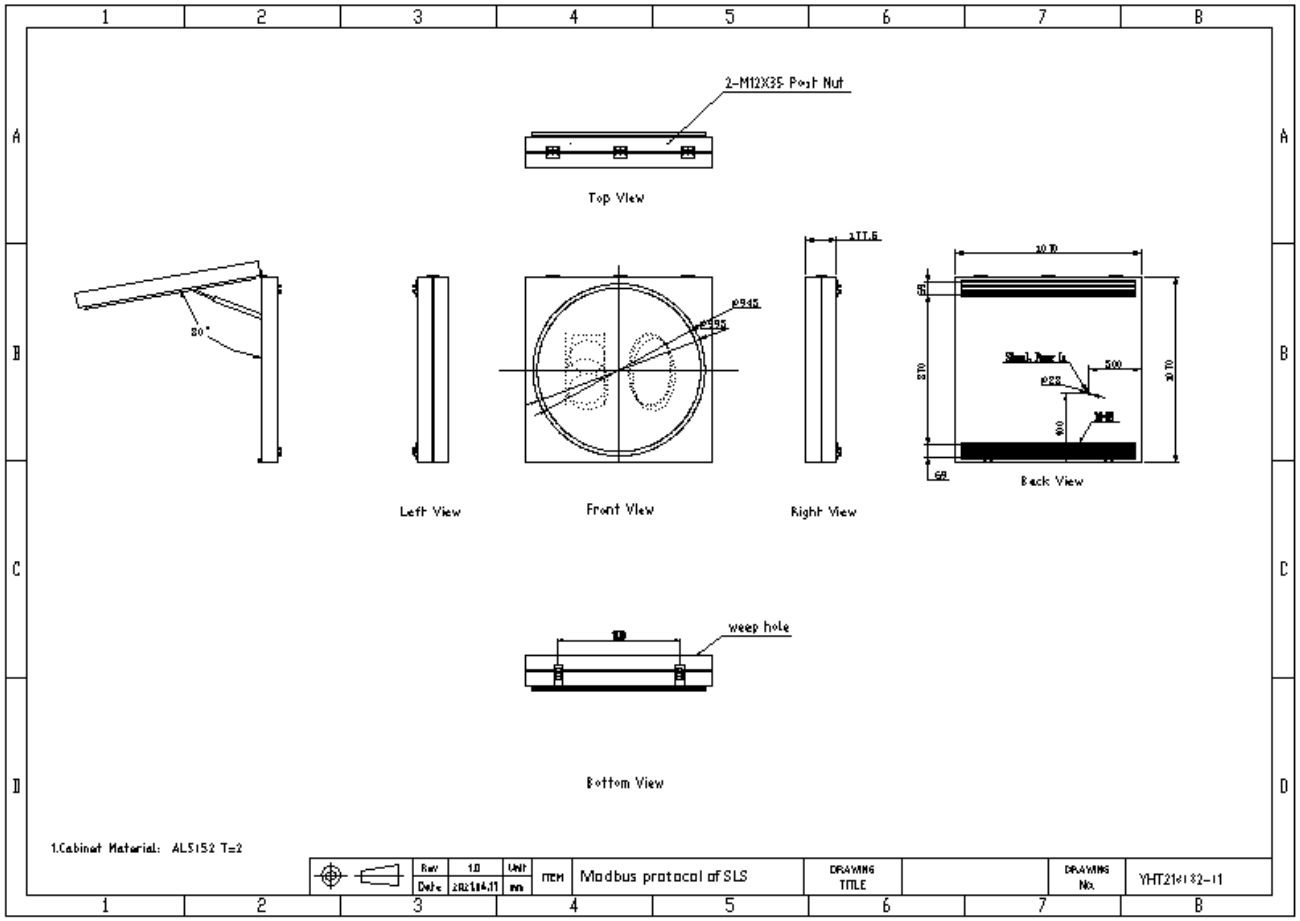
Please follow the packing list to check the items in the packaging box carefully. (List sent by Email)

Equipment description

Use this section to become more familiar with the display's external and internal components. Components shown in this section are critical to the display's installation procedure.

Display size and installation

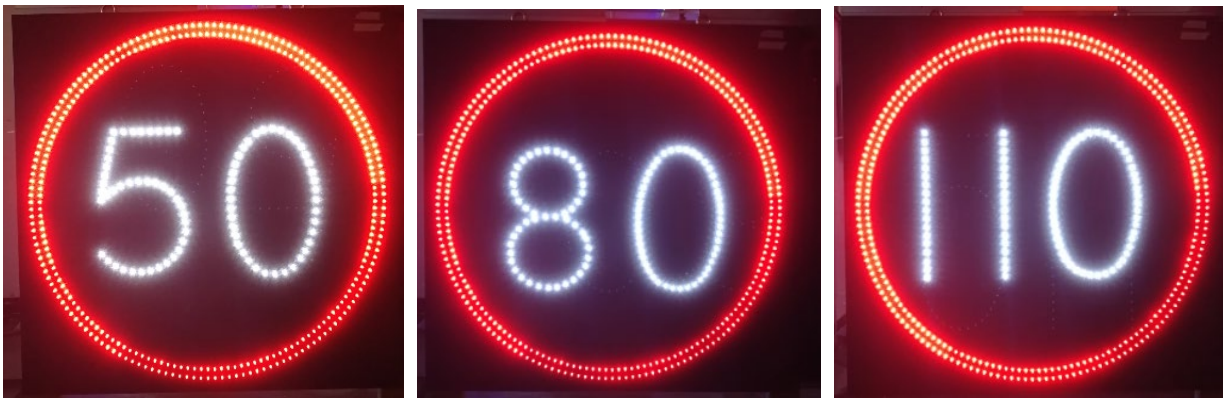
Refer to installation drawing.

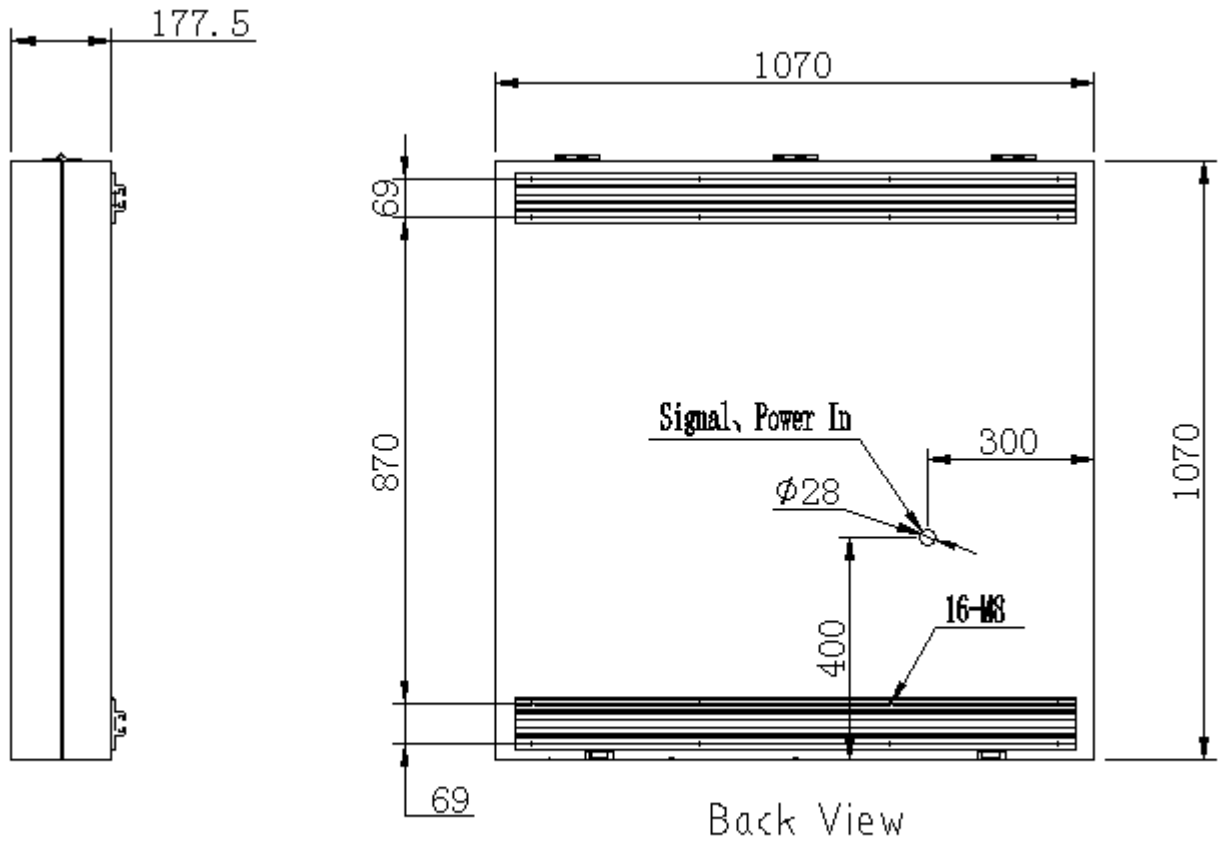


Detailed information refer to Installation drawing.pdf

Display exterior

External Diagram of the display is as show as follow.

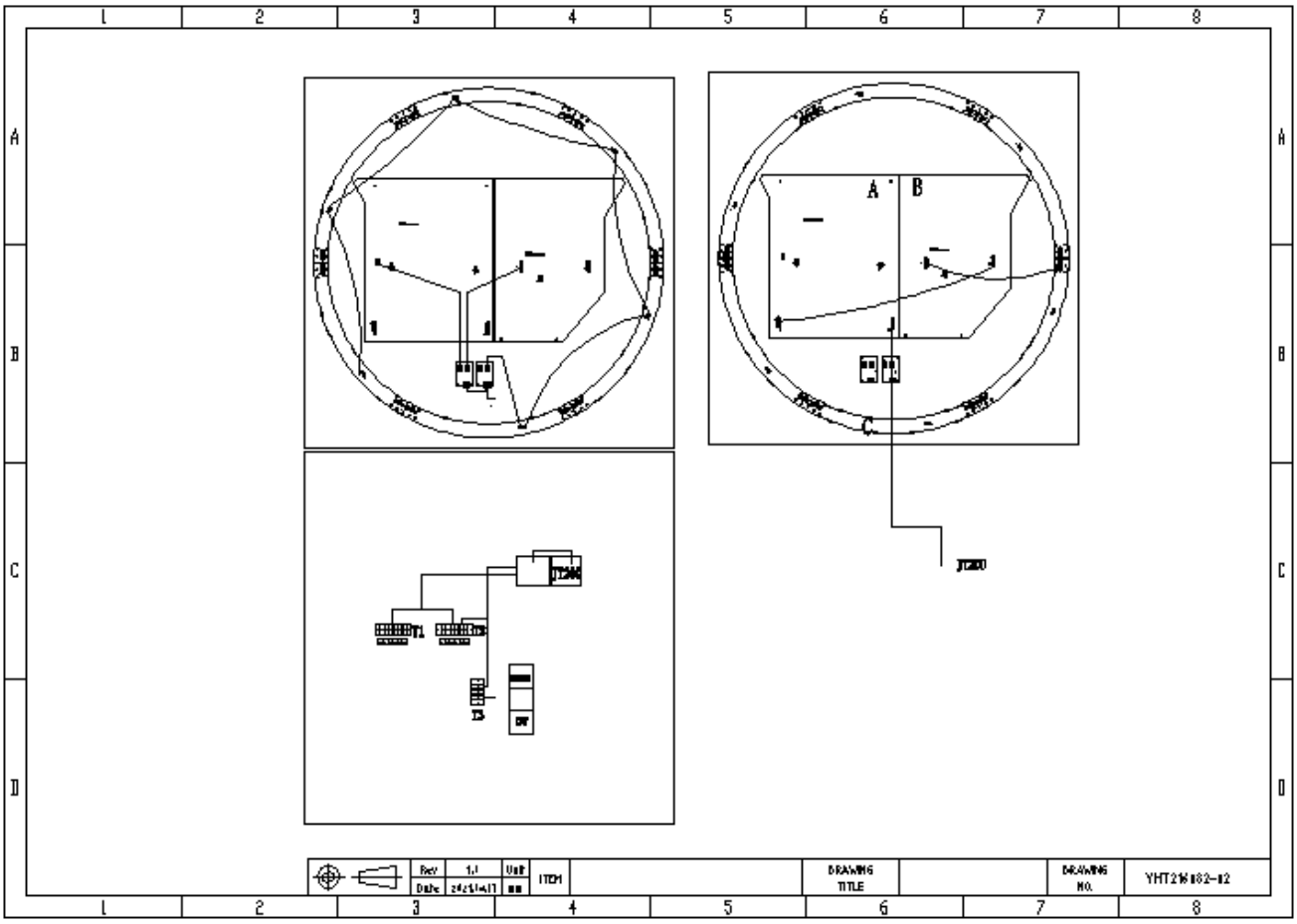


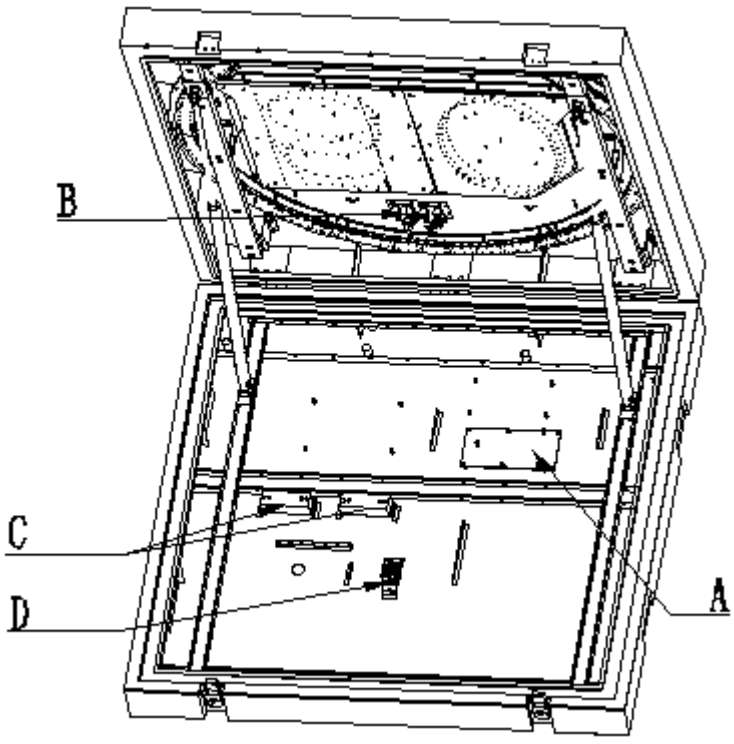


Φ32 flexible conduit and tube head

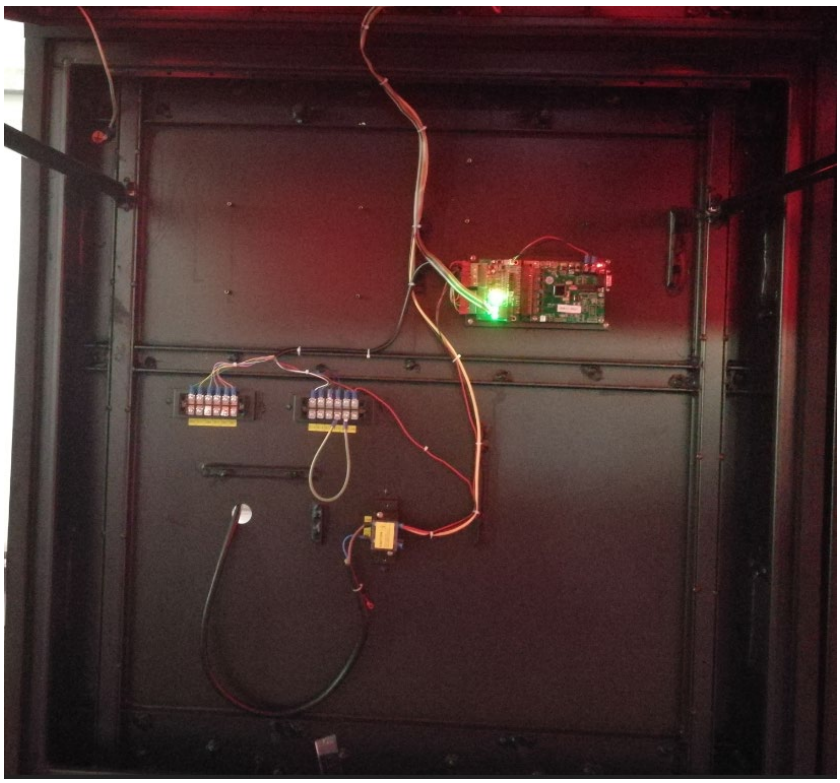
Display interior

Component identification.





Item	Name	Description
A	Sending card	Receive input signal from IO signal and send it to LED module.
B	Power module	To provide DC5V for LED modules and control cards.
C	Signal Terminal block	Input signal connect here.
D	Power Terminal block	Input DC24V electric cable connect here.



LED Display Installation

Introduction of LED Display Installation

LED display project is the comprehensive engineering project that collects electronic, optical, communications, computer, network, structure, construction, decoration and other disciplines. LED display installation is electromechanical installation from the perspective of equipment. That is the installation of LED light-emitting devices. Other relevant projects are installation bases of display screen meanwhile make it coordinate with the surrounding environment. Other relevant projects: civil foundation works (including lightning protection); steel frame construction; outdoor decoration; the strong and weak electricity wiring and installation of ancillary equipment.

Mechanical installation

Install the display to the display-structure

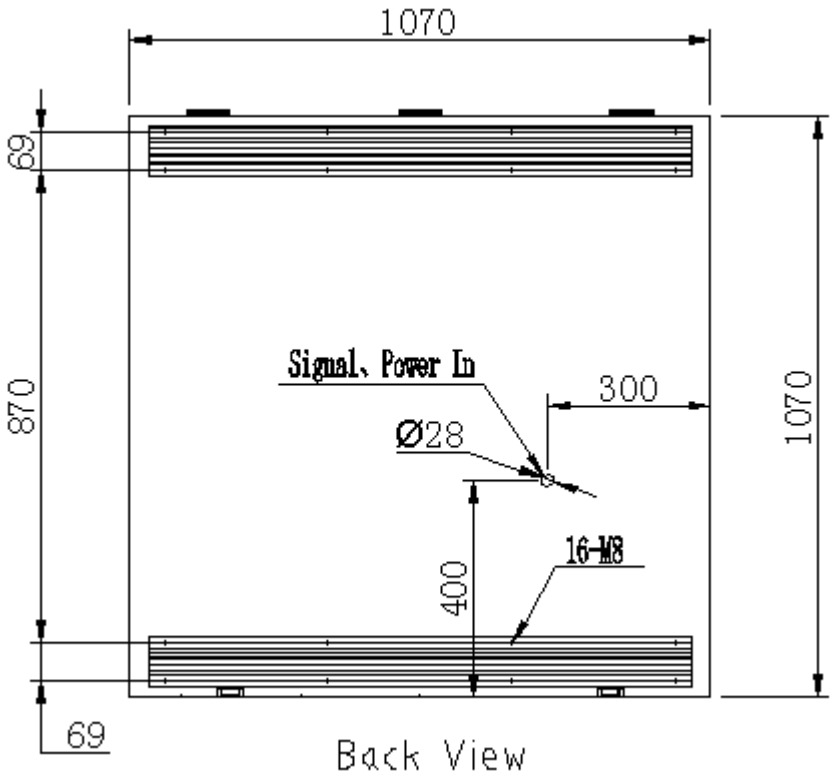
WARNING! DO NOT lift the display by the mounting brackets. Lifting the display by the

mounting brackets may result in the display falling causing personal injury and damage the display. Failure to comply will void the warranty.

All upper and lower mounting brackets must be used to secure the display to the display–structure, otherwise the display may fall causing personal injury and damage the display. Failure to comply will void the warranty.

Entire LED display's cabinet layout

Each LED display is assembled with 1 PCS cabinet. All the cabinets are arranged as follows.



Electrical installation

WARNING! **Hazardous voltage! Contact with high voltage may cause death or serious injury. Remove power at the source.**

Failure to properly ground the display could result in elevated voltage from lightning entering the display seeking a path to earth. High voltage from lightning can result in electric shock, fires, and destruction of the display.

Notice:

• Electrical installation must only be attempted by a qualified electrician. The electrical connection must comply with all applicable national and local codes.

• All electrical conduit connections must be watertight.

• **DO NOT** drill additional conduit holes in the display.

• **DO NOT** route communication wiring in close proximity or parallel with power wiring, power conduit, or high voltage wiring.

Earth-grounding displays

Properly grounding each display is necessary because it is an essential means of preventing shock, shock hazards, potential fire hazards, and damage to low voltage components.

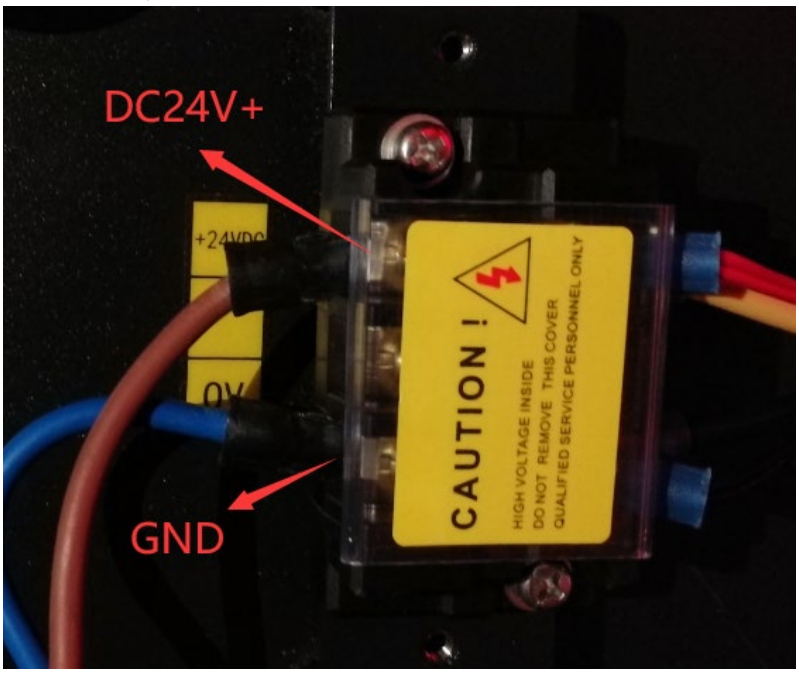
Lightning strike protection

Though surge protection is incorporated into a display, to protect a display from high-voltage lightning transients, additional surge protectors (such as an external earth–ground) need to be installed in accordance with NEC Articles 280 and 285 and local electrical codes.

A display bonded to an earth–ground has a means of dissipating the high voltage and current from a lightning strike. The resistance of the grounding electrode must be as low as possible. However, damage can still occur to a display's electronic equipment from lightning voltage transients.

Input Electric Wiring Connection

Input electric wiring of the display is as show as follow:

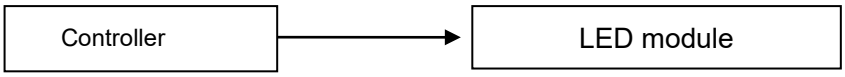


Signal installation

The following section describes how to connect to the display using signal cable.

Signal Flow Graphs

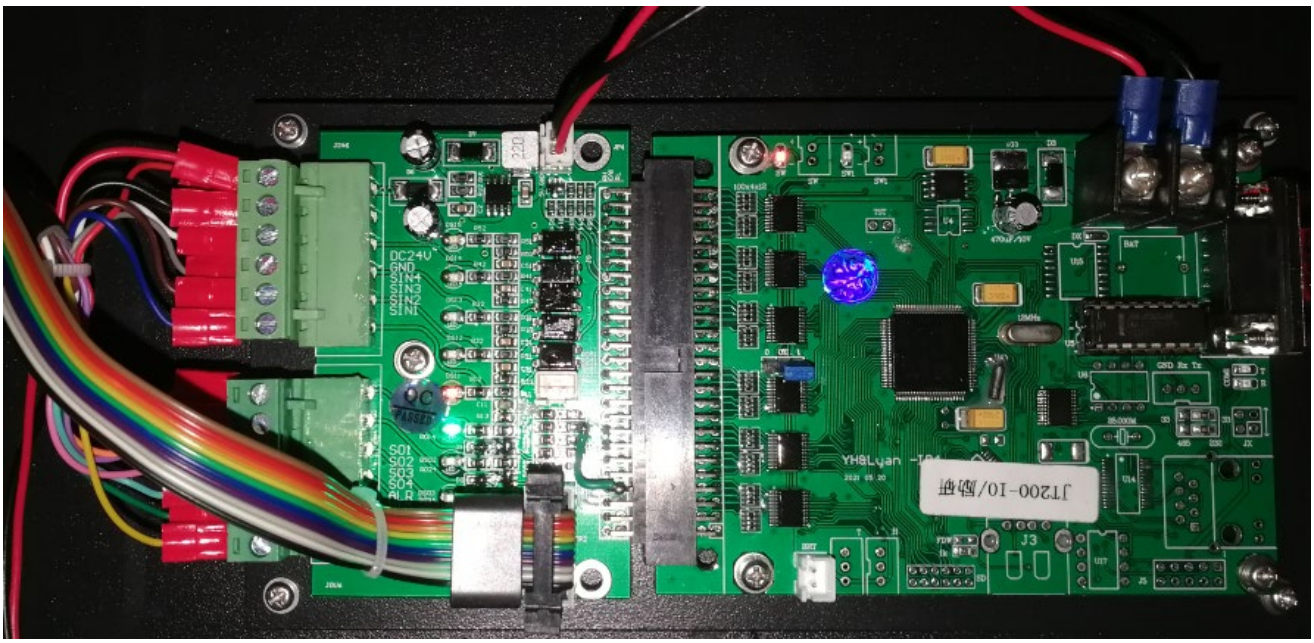
Signal is transferred in the way of:



Whole LED Display Signal Flow Chart

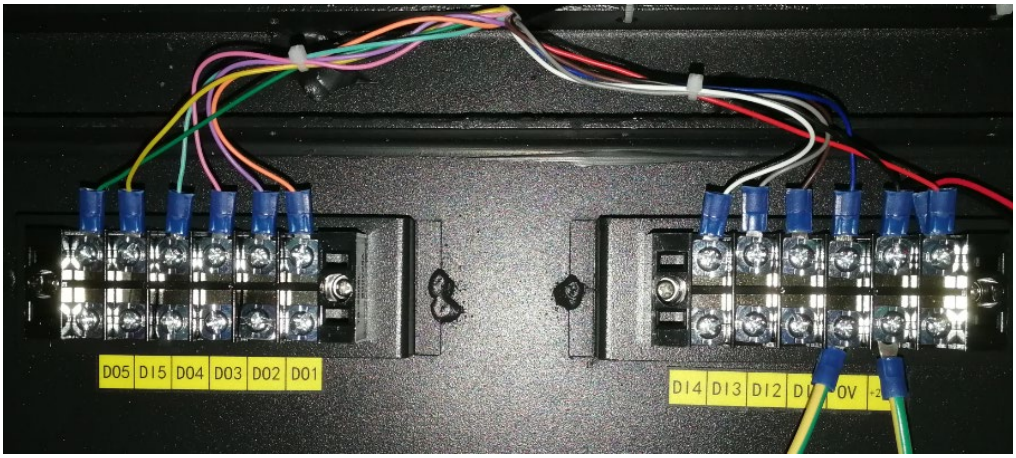
Input Signal Connection

Input signal of the display is shown as follow:



Signal Input Port

	Terminal block	Controller	Display content
1	+24VDC	DC24V	
2	0V	0V	
3	DI1	SIN1	110
4	DI2	SIN2	80
5	DI3	SIN3	50
6	DI4	SIN4	
7	DO1	SO1	110
8	DO2	SO2	80
9	DO3	SO3	50
10	DO4	SO4	
11	DI5	DIM	
12	DO5	ALR	



Control System in Display

1) What's inside of display?

✓ Controller (JT200-IO)

Caution Note

- Please apply to the operation specification of these instructions.
- Environment temperature for operating is -20 ℃ ~ +65 ℃; and for store is -40 ℃ ~ +70 ℃.
- Power supply demand. LED display panel's power supply is: DC24V;

Maintenance

Maintenance of Module

Refer to LED module maintain

Maintenance of System Boards/Cards

Waterproof and Dustproof Maintenance: please keep them dryness and cleanness;
Maintenance of Damage Proof: please prevent them from scratching / hitting / touching / pressing;
Function Maintenance: please replace them when they are abnormal.

Maintenance of Cabinets

Please keep them dryness / cleanness and waterproof, prevent them from rusting / scratching / hitting / touching / pressing.

Maintenance of Power & Signal Cables

Please prevent the scarfskin of cables from disrepair, prevent the cables from aging and breaking;
Please prevent the cables from being bite by mice and other animals.

Please prevent the cables from breaking when plugging in/out;
Please prevent the cables from poor contact;
Please prevent signal cables from disturbing by outside environment;

Maintenance of Power Supply

Please prevent the input power supply from going beyond the ruled voltage range, prevent them from lightning strike etc.

Cleaning Dust Guard Periodically

Time Interval of Cleaning Dust Guard

One month is suggested.

Checking & Cleaning Periodically

Checking exhaust fans periodically, please replace them if they have been damaged;
Checking cabinets periodically, please clean them if they have dust;
Checking the front of display periodically, please clean it by personnel who have been trained if it is dirty.

Key