



McCownGordon
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Kansas City, Missouri 64105
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Project: 1-07-1256 Lee's Summit R7 New Middle
School
Country Lane and SE Bailey Road
Lee's Summit, Missouri 64081
P: (816) 960-1111

Submittal #330000-26.0 - PI Electric & Controls Signals - Product Data & Shop Drawings - Signal Pole Drawings 330000 - Site Utilities

Revision	0	Submittal Manager	Daniel Karanja (McCownGordon Construction, LLC)
Status	In Review	Date Created	Jun 30, 2021
Issue Date	Jun 30, 2021	Spec Section	330000 - Site Utilities
Responsible Contractor	Teague Electric Construction Inc.	Received From	
Received Date	Jun 30, 2021	Submit By	Jun 30, 2021
Final Due Date	Jul 15, 2021	Lead Time	
Sub Job		Cost Code	
Location		Type	Shop Drawings
Approvers	Kathy Walbert (DLR Group)		
Ball in Court	Daniel Karanja (McCownGordon Construction, LLC)		
Distribution	Casey Webber (McCownGordon Construction, LLC), Daniel Karanja (McCownGordon Construction, LLC), DeAndre Guidry (McCownGordon Construction, LLC), Jeff Clemmons (McCownGordon Construction, LLC), Ryan Chushuk (McCownGordon Construction, LLC), Jonathan Chen (McCownGordon Construction, LLC), Joe Breidenbach (DLR Group)		
Description			

Submittal Workflow

Name	Sent Date	Due Date	Returned Date	Response	Attachments
General Information Attachments					LSMS #4 Traffic Signal Submittals.pdf
Daniel Karanja		Jun 30, 2021		Pending	
Kathy Walbert		Jul 15, 2021		Pending	

Project 1-07-1256 Submittal No. 330000-26.0

REVIEWED ONLY

Contractor's review is for general compliance with the information provided in the Contract Documents and for general conformance with the design concept of the project. Any action noted herein is subject to the requirements set forth in the Contract Documents. Subcontractor/Supplier is responsible for all dimensions which shall be confirmed at the jobsite; all fabrication processes and techniques of construction; the coordination of Subcontractor's work with that of all other trades, and the performance of Subcontractor's work in accordance with the Contract Documents

McCownGordon Construction

dkaranja 5:19:59 PM 06/30/2021

SHOP DRAWING REVIEW

- ☐ NO EXCEPTIONS NOTED
- ☒ EXCEPTIONS NOTED
- ☐ REVISE AND RESUBMIT
- ☐ FOR INFORMATION ONLY
- ☐ RECORD COPY

This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during the review do not relieve contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for: dimensions and control ranges to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences, and procedures of construction and coordination of his or her work with that of all other trades.

BY JAB

DATE 7/31/21

olsson



LEE'S SUMMIT MIDDLE SCHOOL #4
PUBLIC ROAD IMPROVEMENTS
TRAFFIC SIGNAL SUBMITTALS

Dated: June 30, 2021

12425 W 92ND ST.
LENEXA, KS 66215
(913) 529-4600 PHONE
(913) 529-4611 FAX
WWW.TEAGUEELECTRIC.COM



COMMERCIAL CONSTRUCTION
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- = on City's APL and/or no exceptions noted.

E = Exceptions Noted, see cut sheet for comments.

X = City to review.

**TEAGUE ELECTRIC
CITY OF LEE'S SUMMIT
BAILEY & CENTURY**

JOB #: S-MCCO-002 – MIDDLE SCHOOL #4

	DESCRIPTION	MANUFACTURER	PART #
-	Vehicle Signals	Eagle Traffic Control	SA Series
-	LED Lens	GE Lumination	VLA Series
X	Pedestrian Signal	Eagle Traffic Control	16" Poly w/Clamshell & Eggcrate Visor
-	Pedestrian Countdown LED	GE Lumination	PS7-CFF1-VLA
-	Backplates	Neodesha Plastics	BP483PO
X	Mast Arm Bracket	Pelco Products, Inc.	AG-0620
-	Side-of-Pole Bracket	Eagle Traffic Control	UKS-1452B
X	Pushbutton	Campbell	Guardian Audible Station
X	Pushbutton Extensions	Campbell	Telescoping
E	Pedestal Pole	Pelco Products, Inc.	PB-5100-04 & PB-5100-09
-	Pedestal Base	Pelco Products, Inc.	PB-5336
-	Pedestal Collar	Pelco Products, Inc.	PB-5325
E	R10-12 Sign	Gades Sales	30" x 36"
X	Sign Bracket	Pelco Products, Inc.	AG-0142
X	Street Name Signs	Gades Sales	94" & 105"
X	Sign Clips	Band-It	DO21
E	Controller	Siemens	EPAC6138M62 ATC
-	Controller Cabinet	Eagle Traffic Control	EL712 (P)
X	Conflict Monitor	Eberle Design	SSM-12LEIP
-	Surge Suppression	Edco of Florida	SHA-1250
X	Flash Transfer Relay	Struthers-Dunn	21ACPX-2
-	Loadswitch & Flasher	Eberle Design	510 & 810
X	Video System	Iteris	NEXT System
X	Anchor Bolts	JH Botts	1-3/4" & 2"
X	Mast Arms & Poles	Valmont	MO515877P1 - DB00947 REV A

P.O. BOX 9003 - WICHITA, KANSAS 67277 - (316) 943-1219 - FAX (316) 943-8829

SA Polycarbonate Vehicle Traffic Signal



EAGLE[®]
Traffic Control Systems

Description

The standard signal is composed of three polycarbonate LED-ready body sections containing the door and visor. The basic construction design provides minimum weight but maximum rigidity and strength. The housing, door and visor are injection molded of ultraviolet stabilized, pre-colored opaque polycarbonate. It meets or exceeds ITE specifications.

Features

Housing – One piece unit with serrations in 5° increments at each end. Each housing has provisions for mounting two terminal blocks and attaching backplates. Housings may be fastened together to make multi-section signals. The 8" and 12" housings can be intermixed to form combination signals.

Door – One piece polycarbonate unit equipped with stainless steel hinge pins. Stainless steel thumbscrews are used to hold the door against the housing.

Visor – The removable twist-on visor is secured to the door with stainless steel hardware. Cap, tunnel, and full circle visors are available.

Positive Positioning – Positive positioning and locking is achieved through the use of serrated brackets, mast arm, or span wire fittings.

Terminal Block – All terminal blocks are composed of a sturdy polycarbonate weather resistant casing and stainless steel hardware. Terminal block is standardly installed in the yellow section of signal (second from top).

Hardware – Stainless steel material inside and outside.

Providing 12" Housings
All Black Finish
Tunnel Visors



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GTX™ City

VLA Model

LED Signal Modules

8 and 12 inch
Incandescent look (120V)



Robust Features

- Optimal thermal management for longer life.
- Provides performance under extreme field temperature conditions.

Innovative Design

- Low profile module permits efficient installation into existing traffic housings.
- Power consumption levels allow compatibility with most controllers.
- Mask compatible to fit your unique signaling needs.*

Outstanding Performance

- High-brightness central light source and custom optical lensing distribute light uniformly and efficiently.
- Rigorously tested for long life design and low maintenance costs.
- Excellent color uniformity.

Meets Rigorous Certification & Testing Standards

- Intertek ETL Verified compliant.
- Compliant with ITE VTCSH LED Circular Signal Supplement dated June 27th 2005.
- CSA approved version available.

* Sold separately. Refer to masks datasheet TRAF208.

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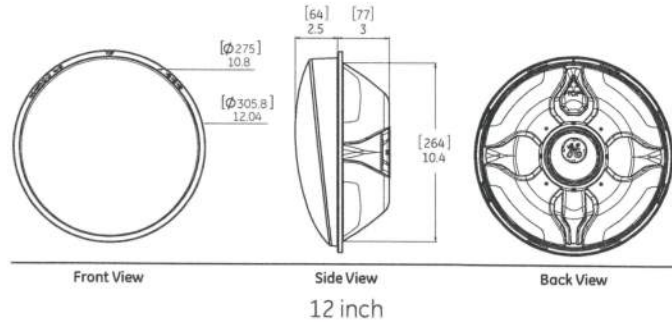
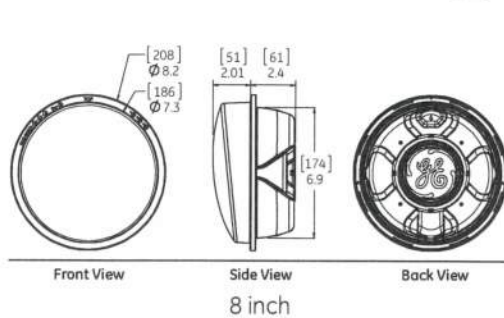


The Greatest Signals Stand the Test of Time.™

GTX™ City LED Signal Modules

• 8 and 12 inch

Mechanical Outline Dimensions in inches [mm]



Design Compliance

Test type	Compliance
Luminous Intensity	ITE VTCSH-LED Circular Signal Supplement -June 2005
Chromaticity	ITE VTCSH-LED Circular -June 2005
Moisture Resistance	Blown Wind Rain MIL-STD-810F method 506.4
Mechanical Vibration	MIL-STD-883 Method 2007
Electronic Noise	FCC Title 47 Sub. B Sec 15 ¹
Transient Voltage Protection	Sec. 2.1.6 NEMA TS2-2003, 300V, 2500W Sec. 2.1.6 NEMA TS2-2003, 600V, 10µF Sec. 2.1.8 NEMA TS2-2003, 1kV, 2Ω
Controller Compatibility	ITE VTCSH-LED Circular Signal Supplement -June 2005
Wiring	NFPA 70, National Electric Code
Transient Suppression	Sec. 8.2 IEC 61000-4-5 & Sec. 6.1.2 ANSI/IEEE C62.41.2 - 2002, 3KV, 2 Ω Sec. 8.0 IEC 61000-4-12 & Sec. 6.1.1 ANSI/IEEE C62.41.2 - 2002, 6KV, 30 Ω

Operating Specifications

Parameter	Rating
Operating Temperature Range*	-40 to +74°C (-40 to +165°F)
Operating Voltage Range	80 to 135 V (60Hz AC)
Power Factor (PF)	> 90%
Total Harmonic Distortion (THD)	< 20%
Minimum Voltage Turn-Off (VTO)	35 V
Turn-On / Turn-Off Time	< 75 ms
Lens & Shell Material	UV Stabilized Polycarbonate
Wiring	8in lamp: 40in, 20 AWG, Color Coded with Strain Relief ** 12in lamp: 40in, 20 AWG, Color Coded with Strain Relief **

* Operating Temperature Range per ITE 2005, Section 3.3.2

** For CSA approved version: 40in, 18AWG, Color Coded with Strain Relief

Product Information

Model Number	Front Shell	Size (in)	AC Voltage Nominal	Power [W] Nominal	Wavelength (nm) nominal	Maintained Intensity (Cd) Minimum ²
DR4-RTFB-VLA	Tinted	8	120V - 60Hz	6.4	628	165
DR4-RCFB-VLA	Clear	8	120V - 60Hz	10.9	588	410
DR4-YZFB-VLA	Tinted	8	120V - 60Hz	7.9	589	410
DR4-YTFB-VLA	Tinted	8	120V - 60Hz	7.3	499	215
DR4-YCFB-VLA	Clear	8	120V - 60Hz	6.7	625	365
DR4-GTFB-VLA	Tinted	12	120V - 60Hz	10.9	588	910
DR4-GCFB-VLA	Clear	12	120V - 60Hz	9.9	589	910
DR6-RTFB-VLA	Tinted	12	120V - 60Hz	9.5	501	475
DR6-RCFB-VLA	Clear	12	120V - 60Hz			
DR6-YZFB-VLA	Tinted					
DR6-YTFB-VLA	Tinted					
DR6-YCFB-VLA	Clear					
DR6-GTFB-VLA	Tinted					
DR6-GCFB-VLA	Clear					

Standard product equipped with universal connectors (insulated spade-quick disconnect).

All colors available in tinted or clear lens.

¹ Class A

² Measured at vertical angle of -2.5° and at horizontal angle of 0°.

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www.LED.com | TRAF282 (Rev 11/14/19) | A-1022427

16-inch Pedestrian Signal



EAGLE[®]
Traffic Control Systems

Features

- Meets or exceeds ITE specifications.
- Design provides minimum weight but maximum rigidity and strength.
- The housing is designed to work with a gasket supplied by LED manufacturer.
- Mounting is completely compatible with all standard signal hardware.
- The housing is designed to accommodate 16-inch LEDs.
- Heavy duty .250" thick material.

Aluminum Signal

The 16-inch Aluminum Pedestrian Signal LED housing is one piece die cast aluminum alloy, with two integrally cast hinge lugs, screw slots, and openings at each end. The swing-down door is a single piece die cast aluminum alloy, with two hinge lugs cast on the top of the door and two latch points on the bottom. The door is attached to the bottom of the housing using two hinge pins. Two eye bolts and wing nuts on the top allow the door to be opened and closed without the need for special tools.



Polycarbonate Signal

The Polycarbonate 16-inch Pedestrian Signal is available in three different colors, yellow, black and green. The LED housing is one-piece injection-molded with hinge lugs, screw slots, and openings at each end. The swing-down door is a single piece injection-molded polycarbonate, with two hinge lugs molded on the bottom of the door and two latch points on the bottom. The door is attached to the bottom of the housing using two cotterless locking pins. Two eye bolts and wing nuts on the top allow the door to be opened and closed without special tools.

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16-inch Pedestrian Signal



EAGLE[®]
Traffic Control Systems

Signal Housing

The openings will accommodate standard 1.5" pipe brackets. The bottom opening of the housing has an integrally-cast locking boss. The radial angular grooves of the locking boss provide 5 degree incremental positioning of the signal to eliminate rotation or misalignment of the signal. The housing is available with a knock-out plug at the top and bottom. This plug eliminates the need for additional hardware to close these openings when using a clamshell or post-top mounting bracket.

Visor Options

The **egg crate visor option** is designed to eliminate sun phantom and minimize damage to the LED. The egg crate visor is inserted through the back side of the door and it overlaps by 1/2 inch. It is sealed when the door is closed, which prevents light from escaping between the visor and the door. The egg crate visor is available only in black. A tunnel visor is also available to be included either with or without the egg crate visor.

~~Aluminum Signals Only~~

- ~~• Clamshell installation reference is facing the front of the signal. Clamshell holes drilled on one side only, if requested on S housing.~~
- ~~• M housing has the top and bottom holes plugged and holes drilled on both sides for clamshell mounting.~~
- ~~• M housing has 6 holes on right and left with knock-outs in place.~~
- ~~• Peds are shipped without a door gasket or LED locking device.~~
- ~~• Serration located on bottom. Adapter ring M20466 required for serrations on top.~~

Polycarbonate Signals Only

- M housing has the top and bottom holes plugged and 5 knockouts on left and right side to accommodate clamshell mounting (L or R designations are not needed).
- Serrations located on top and bottom.
- Peds are shipped without a door gasket or LED locking device.
- When ordering black housings or doors, use color designator B.

Visor Notes:

- When ordering egg crate visor, use Visor color designator F.
- When ordering assembly without Visor, use Visor type 0 and visor color designator F.

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current
powered by GE

GTX™ City LED Countdown Pedestrian Signals

16 x 18 inch



Excellent Appearance & Visibility

- Robust LED system design enables high luminous intensity over product life cycle
- Efficient optical system minimizes power consumption while providing excellent uniformity and viewing angles
- Single piece transparent front window with internal masking to prevent:
 - countdown and icons display from being readily visible when not in operation
 - scratches and abrasions compared with external silk screen technology
- Bright and clear icons
- Fully uniform look
- Lower profile*
- Improved luminous intensity uniformity

Outstanding Reliability & Robust Operation

- Internal conflict monitor preventing walk and don't walk indications to light up at the same time
- Individual power supply drives each display to ensure proper indication
- Reduced overall power consumption*

* Compared to PS7-CFF1-27A

Meets Rigorous Certification & Testing Standards

- Intertek ETL Verified compliant
- DOE compliant
- Using MIL-STD-810F and NEMA 250-1991 Type 4 for environmental robustness, passed reliability and qualification testing including high temperature, high humidity cycling (HTHH for 1,000 hours)
- Compliant (for Full Hand/Full Person) with the ITE PTCSI LED Signal Modules
 - version dated August 2010

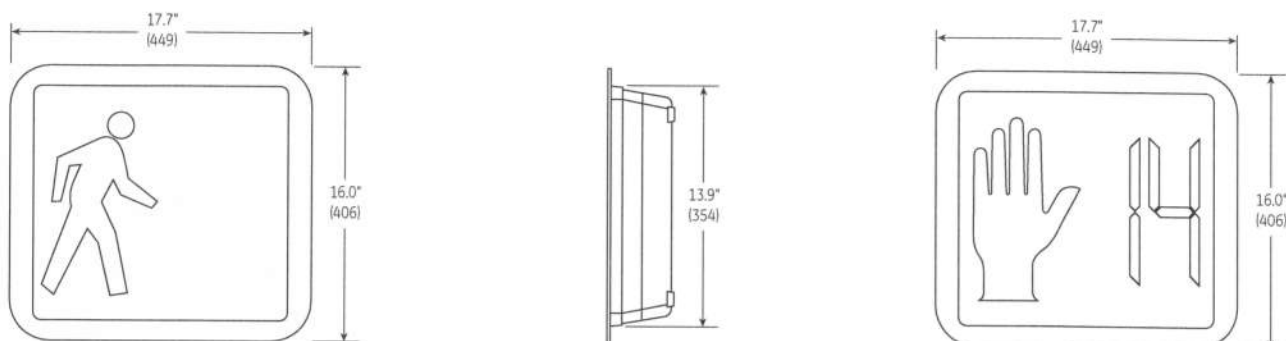


The Greatest Signals Stand the Test of Time.™

GTX™ City LED Countdown Pedestrian Signals

- 16 x 18 inch module

Mechanical Outline Dimensions in inches. (mm) indicates metric equivalent



Design Compliance

Test type	Compliance
Luminous intensity, Uniformity & Viewing Angles	ITE PTCSI LED Signal Modules version of August 2010
Chromaticity	ITE PTCSI LED Signal Modules version of August 2010
Moisture Resistance	MIL-STD-810F Procedure 1, Rain & Blowing Rain
Mechanical Vibration	MIL-STD-883 Test Method 2007
Electronic Noise	FCC Title 47 Sec 15 Sub. B ¹
Transient Voltage Protection	Sec. 2.1.6 NEMA TS 2-2003 Sec. 2.1.8 NEMA TS 2-2003
Controller Compatibility	NEMA TS-2-2003
Transient Suppression	Sec. 8.2 IEC 1000-4-5 & Sec. 6.1.2 ANSI/IEEE C62.41.2 - 2002, 3KV, 2 Ω Sec. 8.0 IEC 1000-4-12 & Sec. 6.1.1 ANSI/IEEE C62.41.2 - 2002, 6KV, 30 Ω
Wiring	NFPA 70, National Electric Code
Digits	MUTCD 2014, Section 4E.07, Countdown Numbers Minimum 9" Height & 7" Width

¹ Class A

Operating Specifications

Parameter	Rating
Operating Temperature Range*	-40 to +74°C (-40 to +165°F)
Operating Voltage Range	80 to 135 V (60Hz AC)
Power Factor (PF)	> 90 %
Total Harmonic Distortion (THD)	< 20 %
Voltage Turn-Off (VTO)	35 V
Start-up Time	< 75msec
Lens & Shell Material	UV Stabilized Polycarbonate
Wiring	16 AWG, Color Coded with Strain Relief
LED Color	Hand: Portland Orange Person: Lunar White Countdown: Portland Orange
Conflict Default Condition	Hand only

* Performed in compliance with ITE test method described in the technical notes

Product Information

Model Number	Dimensions		Symbol		AC Voltage Nominal	Power (W)			Minimum Luminous Intensity Cd/m²	
	Dimensions	Layout	Hand	Person		Hand	Person	Countdown	Hand/Digit	Person
PS7-CFF1-VLA	16 x 18 in	Overlay Countdown	Full	Full	120V - 60Hz	6	6	8	1400	2200

¹ Class A.

Test Condition : T_a = 25°C. All values are design or typical values when measured under laboratory conditions.

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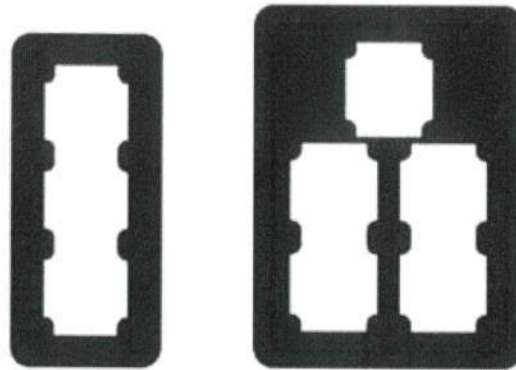
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TRAF289 (Rev 12/06/18)



VACUUM FORMED PLASTIC BACKPLATE

Backplates are fabricated from .125" Black ABS Plastic with a 5" border. Front Side has hair cell finish with a smooth finish on the back. One piece construction designed to withstand wind up to 100 MPH. Furnished with all necessary hardware to attach to signal head.



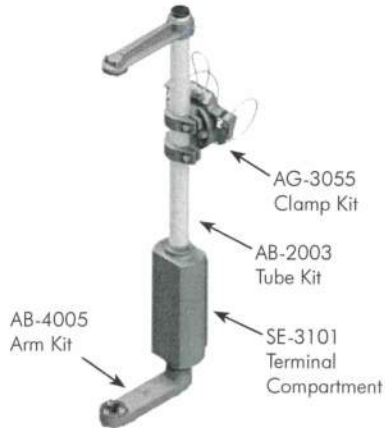
Catalog Number	Number of Signal Sections	Signal Size (Configuration)
BP481PO	1	12"
BP483PO	3	12" – 12" – 12"
BP484PO	4	12" – 12" – 12" – 12"
BP485PO	5	12" – 12" – 12" – 12" – 12"
BP485DHPO	5	12" – 12" – 12" – 12" – 12" "Doghouse Configuration"

Terminal Compartment Assemblies

Pelco's in-line Astro-Brac terminal compartment assemblies satisfy the need of a terminal compartment without sacrificing all-axis adjustability. Available in cable or band mount.



Astro-Brac Galaxy Assy, 1-Way Terminal Compartment Cable Mount



Signal Section	Cable Length	Cable	Coating
AG-0620 -			
3=3 Sec 4=4 Sec 5=5 Sec	See Note	Blank=Galv SS=Stainless	PNC=Process No Color P _ =Paint

Note:
Cable Length: 62", 84", 96", 110", 120", 132", 144", 220", or 280".



Astro-Brac Stellar Assy, 1-Way Terminal Compartment Cable Mount

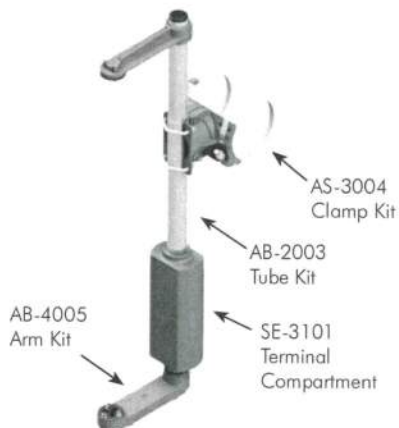


Signal Section	Cable Length	Cable	Coating
AS-0620 -			
3=3 Sec 4=4 Sec 5=5 Sec	See Note	Blank=Galv SS=Stainless	PNC=Process No Color P _ =Paint

Note:
Cable Length: 62", 84", 96", 110", 120", 132", 144", 220", or 280".



Astro-Brac Stellar Assy, 1-Way Terminal Compartment Band Mount



Signal Section	Band Length	Clamp Screw	Coating
AS-0112 -			
3=3 Sec 4=4 Sec 5=5 Sec	See Note	Blank=Galv SS=Stainless	PNC=Process No Color P _ =Paint

Note:
Band Length: 29", 36", 42", 48", 56", 72", 84", 96", or 114".



- Note: 1. All assemblies are supplied standard with stainless steel slotted washer and fasteners.
2. See Reference Section for clamp kit pole diameters.
3. See Reference Section for available paint colors.



Side of Pole Assembly



Description

Eagle's Side-of-Pole assemblies are designed to mount traffic and pedestrian signals on the side of traffic signal poles with an upper and lower arm.

Item Number

UKS1452

Warranty

Eagle warrants to buyer that goods and services sold for use (except when used for personal purposes) here under will be free from defects in material and workmanship which appear within one (1) year of the date of shipment to the original buyer, provided that buyer notifies seller in writing of the the defects covered by this warranty within thirty (30) days of their first appearance. Seller's maximum obligation is to repair or replace goods which are proved to be defective. All warranty work is performed at factory.

UKS1452AB		
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	M60615	NEOPRENE WASHER
2	PDM0544303	POLY BANDING BRACKET
3	PDM0545903	POLY ORNAMENT CAP
4	PDM0546003	POLY LOCK NIPPLE

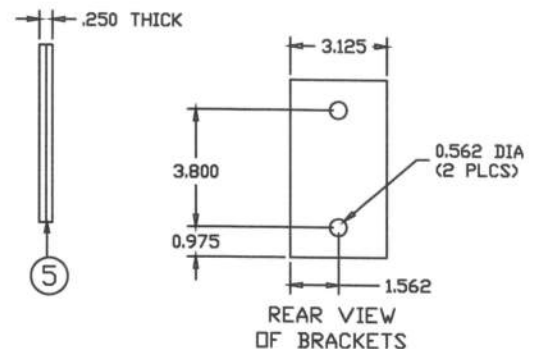
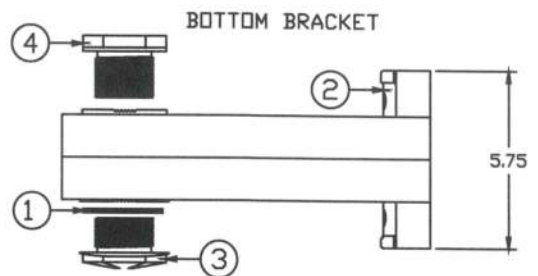
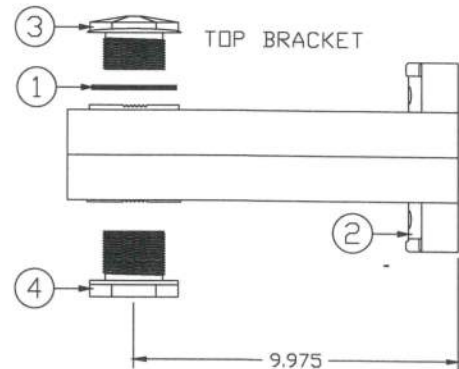
UKS1452AG		
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	M60615	NEOPRENE WASHER
2	PDM0544301	POLY BANDING BRACKET
3	PDM0545901	POLY ORNAMENT CAP
4	PDM0546003	POLY LOCK NIPPLE

UKS1452AY		
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	M60615	NEOPRENE WASHER
2	PDM0544302	POLY BANDING BRACKET
3	PDM0545902	POLY ORNAMENT CAP
4	PDM0546003	POLY LOCK NIPPLE

UKS1452ABCH		
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	M60615	NEOPRENE WASHER
2	PDM0544303	POLY BANDING BRACKET
3	PDM0545903	POLY ORNAMENT CAP
4	PDM0546003	POLY LOCK NIPPLE
5	PDM445	POLY SHIM

UKS1452AG		
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	M60615	NEOPRENE WASHER
2	PDM0544302	POLY BANDING BRACKET
3	PDM0545902	POLY ORNAMENT CAP
4	PDM0546003	POLY LOCK NIPPLE
5	PDM445	POLY SHIM

Black Finish

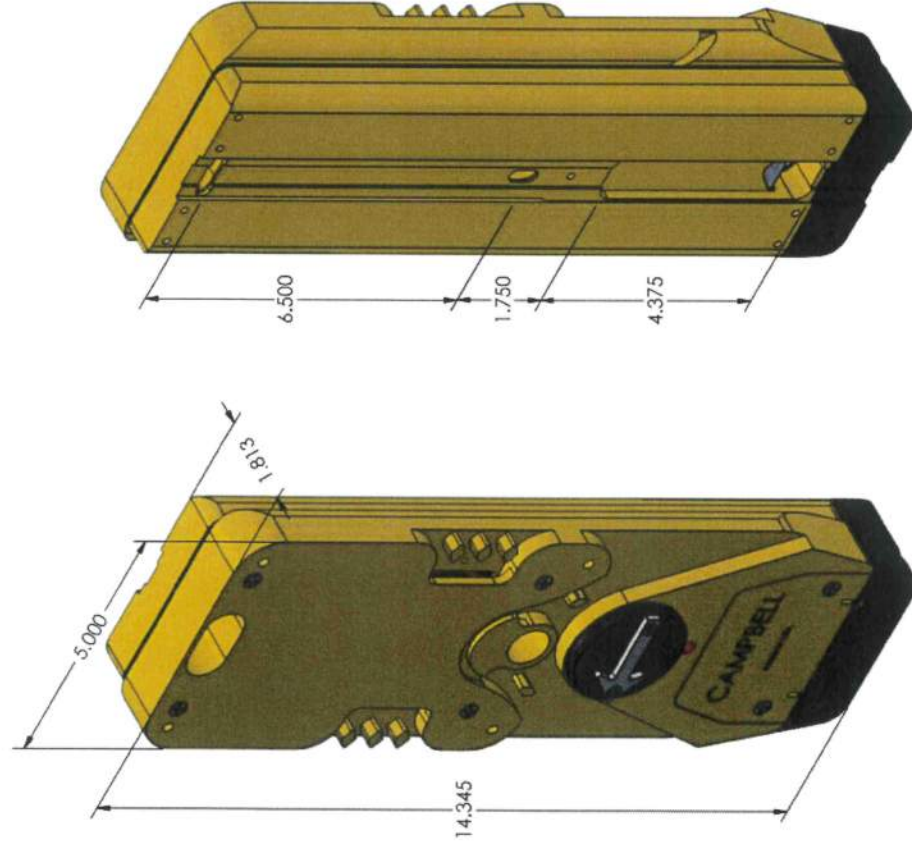


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Guardian Bluetooth® 4-Wire APS



The Guardian APS 4-Wire Push Button Station comes with a Bluetooth® option, and is ready to install out of the box. A four conductor cable connects the Signal Power Interface (SPI) in the pedestrian signal head to the pedestrian station. The housing, machined from solid 6061 T6 AL and stainless steel materials, is virtually vandal proof. The ADA compliant push button is designed to withstand severe impact. The Guardian provides essential information and audible indications required by the MUTCD and TAC making the intersection accessible for all pedestrians. All sounds emanate from the front and side of the station where the pedestrian is positioned to enter into the crosswalk. A face plate and sign, in a variety of sizes with security mounting hardware, make it the most robust APS station on the market.

Key Features

- PedConnex™ and PedConnex™ BT are factory supplied downloadable software for USB and Bluetooth® interface allowing station configuration and customization
- PedConnex™ BT and the optional Bluetooth® module operate with Android, and iOS apps are password protected.
- Out of the box and on to the pole pre-programmed and customized for plug and play installation at the intersection.
- Quick button set-up and recovery for replacement / knockdown
- Fail safe default reverts to standard push button operation in flash.
- Agency or factory generated audible indication files are easily uploaded to PedConnex™ and transferred via Bluetooth or USB connectivity
- Quite Signal Technology (QST™) includes firmware settings for time of day functionality combined with port baffles that provide sound directionality – not 360° uncontrolled broadcasting
- Intersection phase sound sync
- Beaconing functionality is designed into the Guardian.
- External speaker option available at the time of order
- Off Mode function operates as a latching PPB with Dee Dah acknowledgement.
- Configuration profiles provide consistency for residential, business, and heavy traffic installations.



Operating Specifications

Parameter	Rating
Operating Temperature Range	-34°C to +74°C -30 °F to +165°F
Operating Force	3.0 Maximum
MTFB	1,200,000 hrs. (136 years)
Switch Operating Life	Greater than 100 Million Operations
Maximum Volume	100 dB @ 1 meter

Station Size	5" x 7.75"	9" x 12"	9" x 15"
PN#	501-0801	501-0801/511	501-0801/512

Guardian Bluetooth® Module	501-0650
----------------------------	----------

Please specify Part Number and following attributes:

1. Color	2. Screw Type	3. Arrow type
Textured Black	Standard Phillips	Field Selectable (FS)
Federal Yellow	Pinned Torx (T)	Double Arrow DA
Gloss Black	Allen Head (Allen)	No Arrow (NA)
Unpainted/ Natural		
Other (specify)*		

Design Compliance

Test Type	Compliance
Functionality	MUTCD 2009 - 4 E
Temperature and Humidity	NEMA TS2
Transient Voltage Protection	NEMA TS2
Transient Suppression	IEC 61000-4-4, IEC 61000-4-5
Electronic Noise	FCC Title 47, Part 15 Class B
Mechanical Shock and Vibration	NEMA TS2
Guardian PBS enclosure	NEMA 250 – Type 4X
Electrical Reliability	NEMA TS4
Bluetooth® Specification	Bluetooth® SIG member

All certifications performed by Certified Independent Testing Laboratories.

4. Sign Legend



Sign Films Available

Engineering Grade
Diamond Grade
Decals EG & DG
Braille 2

Notes:

1. Applicable sections only of referenced standards
2. All specifications are subject to change without notice
3. All Specification are Typical unless otherwise specified



Telescoping Extension Bracket

Overview

The Telescoping Extension Bracket provides the installer adjustability of a pedestrian pushbutton to be conveniently located near each end of the crosswalk for easy activation. Loosening the two set screws on each of the outer extension tubes allows for the bracket allows the pushbuttons to be moved out as much as 24", great for bringing older crosswalk setbacks into compliance with current MUTCD and ADA guidelines. The Telescoping Extension Bracket (GMB) also allows for mounting two pedestrian stations on smaller diameter poles.

Mounting Options

The Telescoping Extension Bracket can be banded or bolted to the pole. The mounting holes on the pole mount bracket are slotted allowing for the use of existing holes. The mounting adapter plate is designed to allow all Campbell Company pedestrian stations to be quickly and easily installed. The design provides service wires to be routed through the lower tube. Each pole mount bracket is equipped with a threaded chase nipple that protects the lead in wires from sharp edges as well as providing drip protection. The brackets come with adjustable rubber buttons that snug securely to any diameter pole.

Summary of purpose:

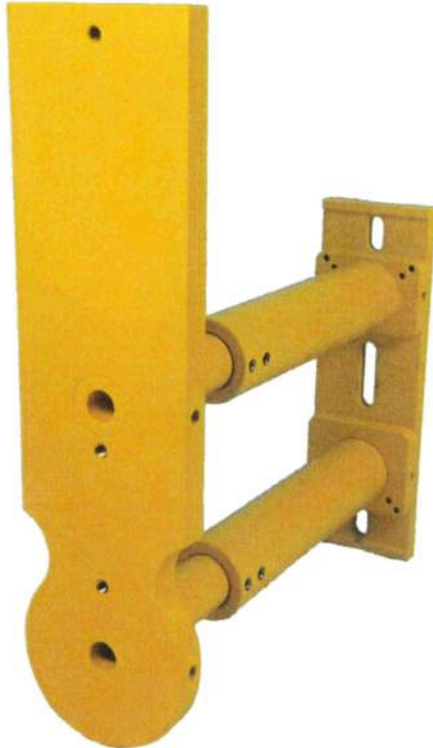
Extend the pedestrian station closer to the landing.

Allow two stations to be mounted on one pole.

Provide a 90 degree installation (requires a 90 degree adapter)

Materials

The extension bracket plates and extension tubes are machined from 6061 T6 Al. All mounting hardware is stainless steel. MPS Extension Brackets are powder coated.



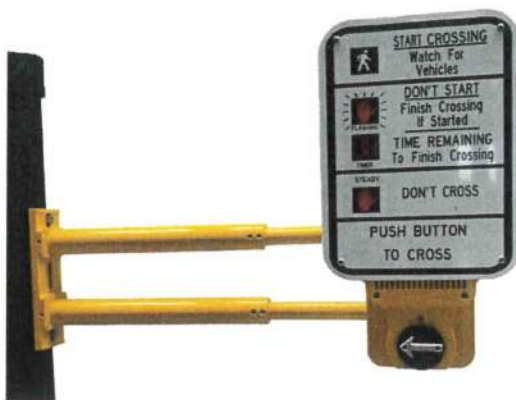
FEATURES

- Adjustable length
- Sleek Profile
- Vandal/ Weather Proof
- Service from Back



Verisys
Registrars®
ISO 9001:2008
Certified

 Made in the USA



POWDER COATED COLORS

- Yellow (Y)
- Textured Black (B)
- Green (G)
- Clear Coat Natural (N)

90 degree adapter

Geometry

5030240S	Telescoping Ext Brkt 4-7"
5030240M	Telescoping Ext Brkt 7-13"
5030240L	Telescoping Ext Brkt 13-24"

5030241S	GW Telescoping Ext Brkt 4-7"
5030241M	GW Telescoping Ext Brkt 7-13"
5030241L	GW Telescoping Ext Brkt 13-24"

Installation

ABOUT

Campbell Company is the leading American manufacturer of pedestrian signal safety products, accessible pedestrian signals (APS) pedestrian push buttons, signs, and hardware.

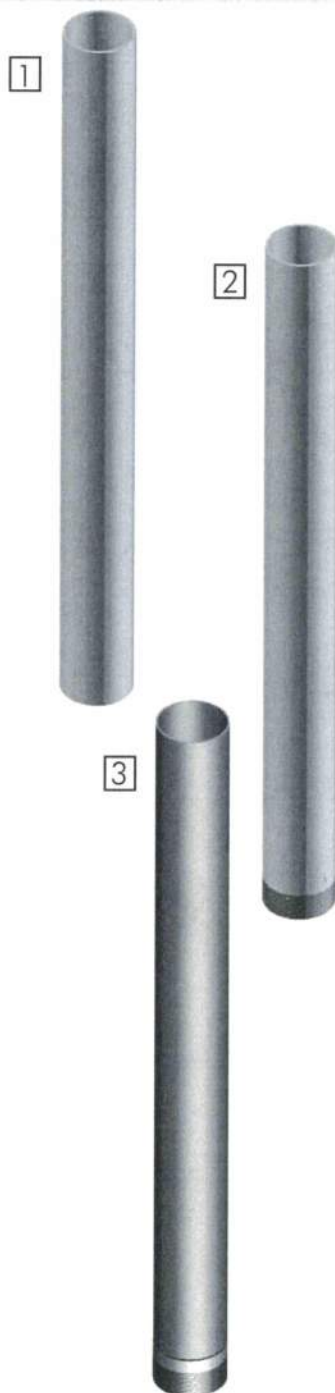
ADDITIONAL INFORMATION

More information can be found at:
www.pedsafety.com

- Screw in the threaded chase nipple
- Pull wires through the lower tube into the button cup
- Attach pole base to the pole: band or bolt
- Attach the Pedestrian station to the extension bracket face plate
- Attach traffic controller cabin field wires to the back of the push button and secure PPB to button cup

Pedestal Poles

Pelco offers aluminum, iron, and plastic bases in various sizes as well as poles in aluminum and steel. Pelco's cast aluminum square base is FHWA certified and meets or exceeds AASHTO break-away requirements. Plastic replacement doors offer an economical way to deter vandalism.



1. Pedestal Pole, 4" Sch 40, Spun Alum No Threads

PB-5101 - Length - Coating

PNC=Process No Color
P__=Paint

2. Pedestal Pole, 4"- 8 NPT Sch 40, Spun Alum w/ Pelican ID

PB-5100 - Length - Coating

PNC=Process No Color
P__=Paint

4' and 8'

Pedestal Pole, 4"- 8 NPT Sch 80, Spun Alum

PB-5102 - Length - Coating

PNC=Process No Color
P__=Paint

Pedestal Pole, 4"- 8 NPT Sch 40, Steel

PB-5201 - Length - Coating

P__=Paint

Pedestal Pole, 4"- 8 NPT Sch 40, Galv Steel

PB-5200 - Length - GLV - Coating

Blank=Galvanized Only
P__=Paint over Galvanized

3. Pedestal Pole, Welded, 4"- 8 NPT w/ 2-3/4" Nipple Length, Steel

PB-5218 - Length - Coating

GLV=Galvanized
P__=Paint

Pedestal Pole, Welded, 4"- 8 NPT w/ 5-1/2" Nipple Length, Steel

PB-5219 - Length - Coating

GLV=Galvanized
P__=Paint

Note: 1. Standard poles are typically sold in 1 foot increments. For other lengths contact sales.
2. See Reference Section for available paint colors.

Square Pedestal Bases Aluminum

Pelco offers aluminum, iron, and plastic bases in various sizes as well as poles in aluminum and steel. Pelco's cast aluminum square base is FHWA certified and meets or exceeds AASHTO break-away requirements. Plastic replacement doors offer an economical way to deter vandalism.

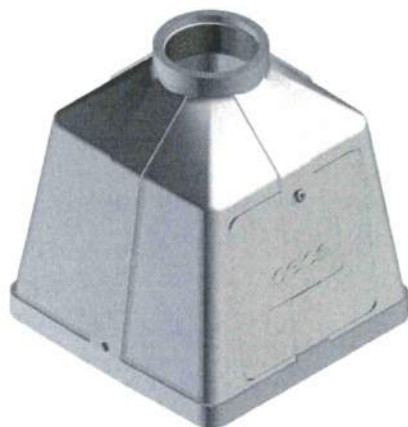


Square Base Assembly, Alum w/ Alum Door

Door	Set Screws in Collar	Grounding Lug	Coating
PB-5334 - ☐	- ☐	- ☐	- ☐
NL=No Logo Blank=Pelco Logo	1S=1 Hex Bolt 3S=3 Set Screws Blank=None	GL=Grounding Lug Blank=None	PNC=Process No Color P__=Paint

Square Base Assembly, Alum w/ Plastic Door

Door	Set Screws in Collar	Grounding Lug	Coating
PB-5335 - ☐	- ☐	- ☐	- PNC
NL=No Logo Blank=Pelco Logo	1S=1 Hex Bolt 3S=3 Set Screws Blank=None	GL=Grounding Lug Blank=None	

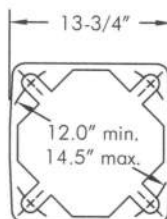
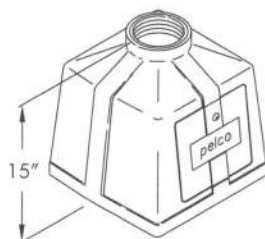


Square Base Assembly, Alum Heat Treated w/ Alum Door

Door	Set Screws in Collar	Grounding Lug	Coating
PB-5336 - ☐	- ☐	- ☐	- ☐
NL=No Logo Blank=Pelco Logo	1S=1 Hex Bolt 3S=3 Set Screws Blank=None	GL=Grounding Lug Blank=None	PNC=Process No Color P__=Paint

Square Base Assembly, Alum Heat Treated w/ Plastic Door

Door	Set Screws in Collar	Grounding Lug	Coating
PB-5337 - ☐	- ☐	- ☐	- PNC
NL=No Logo Blank=Pelco Logo	1S=1 Hex Bolt 3S=3 Set Screws Blank=None	GL=Grounding Lug Blank=None	



- Note: 1. AASHTO Certified Square Aluminum Base: All Aluminum square bases above are available with AASHTO Certifications and FHWA approval. Please specify by adding the Certification Part No. C-1001 in addition to the base part number.
2. All assemblies are supplied standard with stainless fasteners.
3. See Reference Section for available paint colors.

Collars & Adapters

Pole and base collar assemblies, for both square and octagonal bases, are available in highwind areas to add strength and help prevent loosening of connection.



Pole & Base Collar Assembly, Alum Square Base

PB-5325 -

Coating



PNC=Process No Color

P__=Paint



Pole & Base Collar Assembly, Alum Octagonal Base

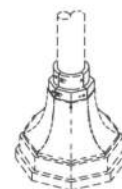
PB-5326 -

Coating



PNC=Process No Color

P__=Paint



Pedestal Adapter, 4" (4-1/2" OD Pole), Alum 6-1/2" Bolt Circle

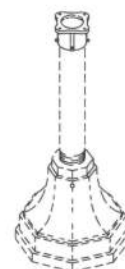
SE-3104 -

Coating



PNC=Process No Color

P__=Paint



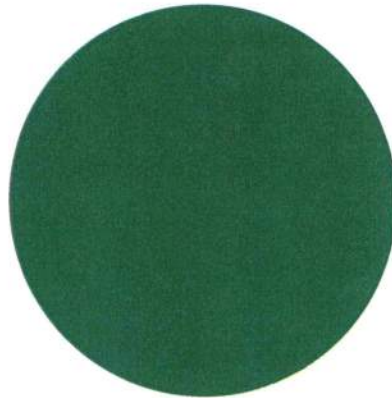
- Note: 1. All assemblies are supplied standard with stainless steel fasteners.
2. Specify options when ordering.
3. See Reference Section for available paint colors.

24"x30"

High Intensity Prismatic Sheeting

30" x 36" 080 Aluminum

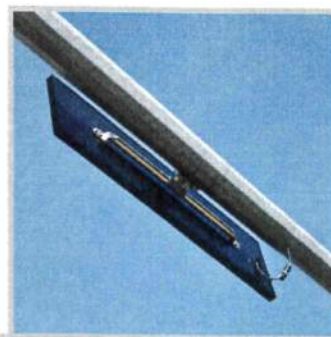
**LEFT TURN
YIELD
ON GREEN**



R10-12

Astro Sign-Brac Formed Tubes Cable Mount

Pelco manufactures a variety of sign brackets in rigid and free-swinging mounts for both flat and internally illuminated signs. Most sign-bracs are available with a cable, band, or tenon mount clamp kit.



AG-3055
Clamp Kit



AB-0507
Sign Brac w/ Hdwr

Astro Sign-Brac, Galaxy Cable Mount, Formed Tube

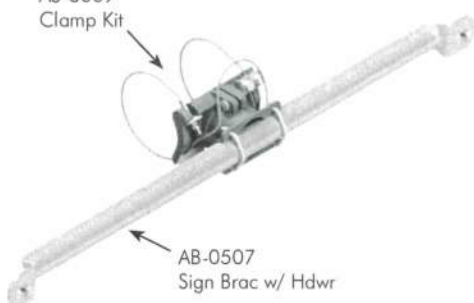
AG-0142 - - - -

*See Chart See Note Blank=Galv PNC=Process No Color
SS=Stainless P__=Paint

Note:

Cable Length: 62", 84", 96", 110", 120", 132", 144", 220", or 280".

AS-3009
Clamp Kit



AB-0507
Sign Brac w/ Hdwr

Astro Sign-Brac, Stellar Cable Mount, Formed Tube

AS-0142 - - - -

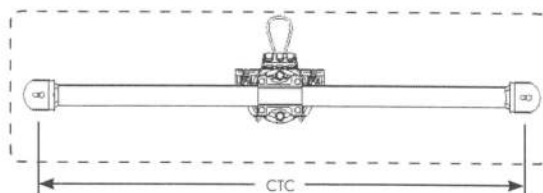
*See Chart See Note Blank=Galv PNC=Process No Color
SS=Stainless P__=Paint

Note:

Cable Length: 62", 84", 96", 110", 120", 132", 144", 220", or 280".

Max CTC:	9"	12"	15"	18"	24"	30"	36"	42"	48"	60"
Sign Length:	15"	18"	21"	24"	30"	36"	42"	48"	54"	66"

24"x30"



Notes:

90 mph wind zone maximum: 1.6 sq-ft

1. Capacity listed is only for applications with the clamp kit mounted in the center of the sign.
2. Signs must be properly engineered for specific application.
3. For higher wind zones and multiple brackets use assemblies shown on T6-1 & T6-2.

Note: 1. All assemblies are supplied standard with stainless fasteners. Stainless upgrade shall include stainless steel cable.
2. See Reference Section for clamp kit pole diameters.
3. See Reference Section for available paint colors.



.125 Aluminum - High Intensity Prismatic Sheeting

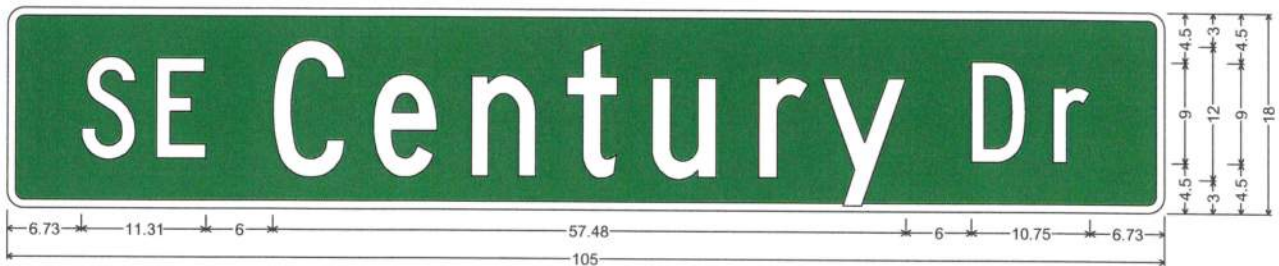
SG 6-8-21

KS-GADES-SE BAILEY RD-9418-10518

NAN



1.50" Radius, 0.75" Border, White on, Green;
"SE", C; "Bailey", C; "Rd", C;

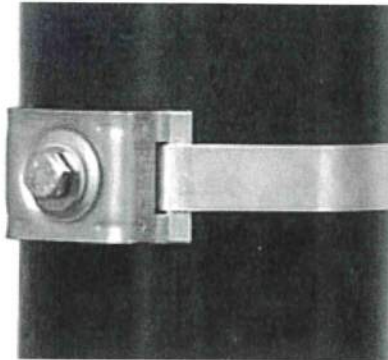


1.50" Radius, 0.75" Border, White on, Green;
"SE", C; "Century", C; "Dr", C;

Single Bolt Flared Leg Brack-It

Reinforced rib design provides additional strength to resist effects of stress, wind and vibration.

[\(back to index\)](#)



**Single Bolt Flared Leg Brack-It
D02189**

Reinforced rib design provides additional strength to resist effects of stress, wind and vibration.

- 200/300 Stainless Steel
- Industry standard for all round poles greater than 3" diameter
- Includes a 5/16-18 x 3/4" stainless steel hex head bolt with stainless steel and polypropylene washer, no nuts required
- 3/4" wide band slot will allow a single or a double wrap of [BAND-IT® band](#)
- Brack-it assembly can be reused
- Used to mount traffic signs, security devices, and enclosures
- Withstands stress and wind vibration with specialty designed reinforcement ribs
- Fully threaded to solidly anchor attachment bolts
- Applied with [BAND-IT® Band and Buckles](#), [BAND-FAST®](#), [VALU-STRAP™](#), [VALU-STRAP Plus™](#), or [ULTRA-LOK® Systems](#).

Part No.	Description	Thickness		Package Quantity	Package Weight	
		In	(mm)		Lbs	Kg
D02189	Single bolt flared leg SS Brack-It with SS bolt, washer and fiber washer. 3/4 " slot	0.070	1.78	50 / Box	7.0	3.2
D02299	Single bolt flared leg SS Brack-It only. 3/4" slot	0.070	1.78	50 / Box	5.5	7.5

Information

[How do I choose the right hardware for mounting signs?](#)

SIEMENS
Ingenuity for life

m60 Linux Series Controllers

Advanced Traffic Controllers for ATC and NEMA

The Siemens m60 Linux Series controllers comply with industry's latest standards, with variants compatible for ATC (Advanced Traffic Controller) and NEMA (National Electrical Manufacturers Association) standards.

Built on the proven m50 hardware architecture and combined with state-of-the-art SEPAC traffic controller software, the m60 controllers are Linux-based, with a number of functions to meet the needs of traffic agencies of all sizes.

The m60 series controllers provide multiple Ethernet, USB and other interfaces to facilitate backwards

compatibility. The field devices also enable easy hosting of third-party applications, exceeding industry standards by providing usability features that include the new Siemens Multiview Display concept of real-time active status, context-sensitive HELP screens and user-programmable favorite buttons.



Providing EPAC6138M62 ATC

Ensure meets type 3608 M 60 ATC
upgrade compatible, including
software, NTCIP Rev 4.57

usa.siemens.com/intelligenttraffic

General features

- Linux operating system
- Operates in both TS-2 Type 1 and 2 cabinets
- 64MB DRAM, 512MB FLASH, 2MB SRAM
- Five RJ-45 Ethernet connectors
- 4 Port USB hubs
- Active TFT backlit LCD display
- Siemens Multiview Display technology designed for the everyday user in mind
- m50 USB upgrade package available
- Compatible with SEPAC traffic controller software

ATC variant

- Exceeds ATC 5.2 standard compliance
- Modular ATC communications hub
- m60 ATC upgrade package available

NEMA variant

- Exceeds NEMA TS-2 requirements
- m60 NEMA upgrade package available

Central Processor Unit (CPU)

- Open architecture platform with standard Linux operating system
- MPC 8270 266MHz processor
- 512MB FLASH, 64MB DRAM and 2MB SRAM
- TOD Clock with automatic daylight savings time adjustment
- Power supply will power the SRAM during power failures
 - Supports SEPAC controller software
 - SD memory card
 - Operating System: Linux 2.6.39

Keyboard and Display

- Siemens Multiview Display with dual view screens
 - 5 1/8 inch active TFT display
 - Easily removable display and keypad
 - Easily identifiable, discrete HELP button
 - Real-time context sensitive HELP screens
 - User programmable function buttons F1 to F5



- Removable LED backlit LCD with 16 lines of 40 characters with adjustable contrast
- Emulation of terminal per Joint NEMA/AASHTO/ITE Standard
- Key quantity and function per Joint NEMA/AASHTO/ITE Standard

m60 Communications Module

- 10 Base-T Ethernet with built-in switch and 4 front panel RJ-45 connectors
 - ENET1 and ENET2 network switches
 - 5 10/100 TCP/IP ports
- 4 USB 2.0 Ports and a Datakey Port
- Dedicated GPS - SP8 Port (9pin EIA-574)
- Unique MAC address assigned by the Institute of Electrical and Electronic Engineers (IEEE)

Controller Housing

- 7 slots with card guides for standard size Versa Modules
- 2 slots with card guides for standard Joint NEMA/AASHTO. ITE ATC modems (optional) or ATC Communication Module or USB Plate
- Polycarbonate construction (excluding back panel), rear mounting tabs and aluminum power supply mounting plate for electrical grounding
- Carrying handle

EL712, Size P Cabinet NEMA Size 6



EAGLE[®]
Traffic Control Systems

Description

The Eagle Size P Cabinet protects electronic components including controllers and other equipment. It features an aluminum enclosure for protection from all forms of outdoor natural elements including rain, sleet, and snow, as well as seepage and splash.

Optional Configurations

- Outward-rotating door handle.
- Double-flanged door frame to provide a better splash shield.
- Continuously welded enclosure for maximum protection from contaminants.
- Unique lock/keying combinations.
- Custom finish per customer requirements.
- Lifting ears.



Eagle EL712 Cabinet

Eagle Traffic Control Systems continues our 80+ year history of providing excellence in the ever evolving traffic industry. All of Eagle's products are developed with the highest standards of engineering and manufacturing. Eagle maintains a superior level of integrity in interactions with all of our business partners and customers. We also take tremendous pride in being model corporate citizens.

Eagle Traffic Control Systems is a division of:

mobotrex[™]
MOBILITY & TRAFFIC EXPERTS
MANUFACTURING

MoboTrex.com

109 W. 55th Street • Davenport, IA • 52806
301 W. Howard Lane, Suite 200 • Austin, TX • 78753

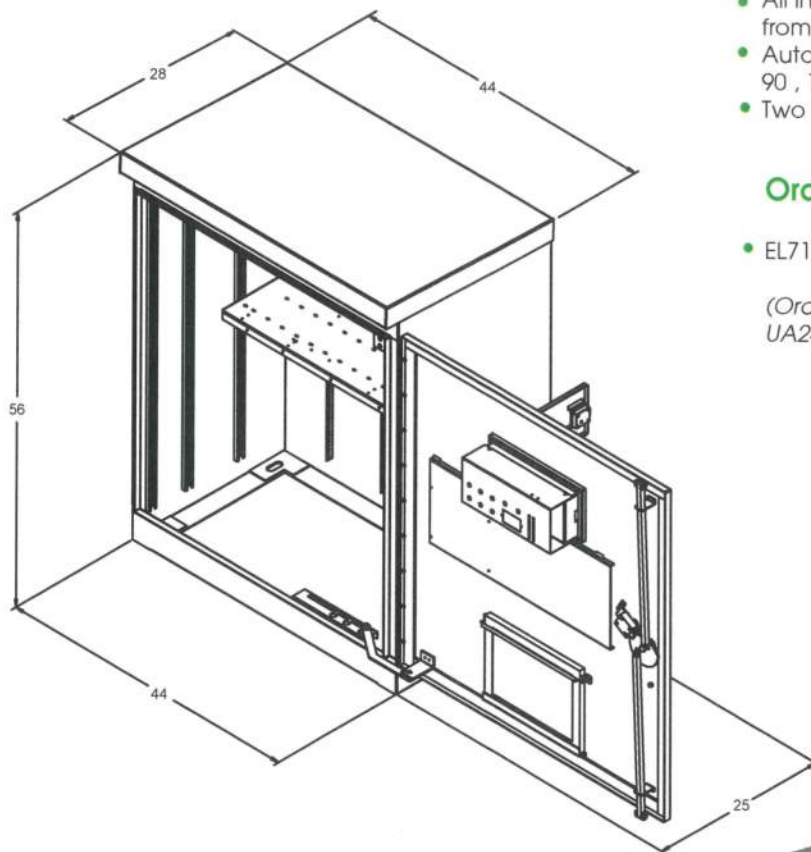
EL712, Size P Cabinet NEMA Size 6



EAGLE[®]
Traffic Control Systems

Standard Door Specifications

- Provided with three-point locking mechanism with nylon rollers at the top and bottom.
- 3/4"-diameter stainless steel inward turning handle with provisions for padlocking.
- Main door lock - industrial standard pin tumbler lock with #2 key.
- Louvered inlet with filter to prevent dirt from entering with air flow.
- Closed cell PVC door gasket with polyester film to prevent sticking.
- Heavy gauge stainless steel continuous hinge utilizing a 1/4"-diameter stainless steel hinge pin for door support, carriage bolted in place for ease of door removal.
- A 2"-deep fabricated switch compartment is included with a standard police lock and a stainless steel continuous hinge with a 1/8"-diameter hinge pin riveted in place. Compartment is mounted flush to the door.



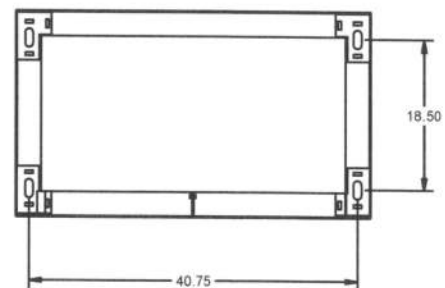
Standard Enclosure Specifications

- Completely fabricated from .125"-thick type 5052-H32 mill-finished aluminum utilizing intermittently welded construction, subsequently weatherproofed with silicone sealant.
- Internal attaching components include six (6) adjustable "C" mounting channels (3 per side), and three (3) slotted rails on rear wall for attaching equipment panels.
- The door opening is double-flanged on top to prevent water drops when the door is open. The opening also includes a mount for two door-operated switches.
- Thermoconvection air ventilation system utilized with provisions for mounting fan for forced-air cooling.
- Exhaust outlet openings are provided under the roof over-hang.
- All internal and external hardware is fabricated from non-corrosive material.
- Automatic door stop to hold main door open at 90, 120 and 135.
- Two (2) shelves included.

Ordering Information

- EL712- Base Mount

(Order 1 (set of 4) anchor bolts, UA242, if required)



Eagle Traffic Control Systems is a division of:

mobotrex[™]
MOBILITY & TRAFFIC EXPERTS
MANUFACTURING

SSM-LE Series

SSM-6LE AND SSM-12LE SERIES

ENHANCED NEMA SIGNAL MONITOR



SSM-6LE

SSM-12LE

EDI continues to set the industry standard and provide traffic signal professionals with reliable, high quality mission critical component products that improve the performance and lifecycle of traffic control systems.

Providing the signal technician with powerful monitoring and trouble-shooting tools helps ensure that cabinet malfunctions are detected, diagnosed, and repaired with confidence. The Full Intersection LCD display and event log recording capabilities present the signal technician with detailed and accurate information regarding cabinet operation. True RMS voltage sensing makes the SSM-LE series the most reliable signal monitor available at any cost.

Model Options:

SSM-6LE	6 channel capability with EIA-232 Port
SSM-6LEip	6 channel capability with Ethernet Port
SSM-12LE	12 channel capability with EIA-232 Port
SSM-12LEip	12 channel capability with Ethernet Port

SSM-12LE is acceptable. City to review use of LEip.

SSM-LE ENHANCED FEATURES

- NEMA TS1 Standard:** The SSM-LE series meets all specifications of NEMA Standard TS-1 1989 R2000, Part 6. Basic fault coverage includes Conflict, Red Fail, CVM, 24V-I and 24V-II.
- Dual Indication Monitoring detects simultaneous active signals on a channel.
 - Clearance Monitoring assures proper sequencing of signals and a minimum yellow clearance interval.
 - AC Line Monitoring responds to low AC Line voltages as well as interruptions.
- Full Intersection & Status Display:** High contrast, large area Liquid Crystal Displays (LCD) show full intersection status with an active Red, Yellow, Green, and Walk indicator for each channel. Separate indicators identify channels involved in the fault.
- Event Logging:** The SSM-LE series maintains a nonvolatile event log recording the complete intersection status as well as previous fault events, AC Line events, configuration changes, monitor resets, cabinet temperature and true RMS voltages for all AC inputs. A real time clock time stamps each log event with time and date.
- Signal Sequence:** The five Signal Sequence History Logs stored in nonvolatile memory graphically display up to 30 seconds of signal status prior to each fault trigger event with 50ms resolution to ease diagnosing of intermittent and transient faults.
- EDI RMS-ENGINE:** A DSP coprocessor converts ac input measurements to True RMS voltages, virtually eliminating false sensing due to changes in frequency, phase, or sine wave distortion.
- Configuration Options:** Front panel options include GY Dual Indication, LEDguard, +24V and CVM Latching, Red Fail Walk Disable, External Watchdog input, CVM Log Disable, and FYA Mode.
- Communications to PC or Remote Traffic Management Center:** An EIA-232 or optional Ethernet port provides access by a local PC or remote TMC running ECcom Windows based software for status, event log review, and archival.
- Flashing Yellow Arrow PPLT:** The SSM-LE series supports MUTCD Flashing Yellow Arrow PPLT operation with two different modes for TS-1 cabinet configurations.
- LEDguard®:** This EDI innovative signal thresholding technique can be used to increase the level of monitoring protection when using LED based signal heads.

EBERLE DESIGN INC.

3510 East Atlanta Avenue
Phoenix, AZ 85040 USA
www.EDIttraffic.com

Tel (480) 968-6407
Fax (602) 437-1996





SHA-1250 and SHA-1250-BASE-A (Sold Separately)

Edco SHA-1250

120 VAC — 1 Phase — Modular

The Edco SHA-1250 is an upgraded version of the Edco SHA-1210. The Edco SHA-1250 also incorporates two LEDs for failure indication in a modular package (Utilizes 12 pin Beau connector). The hardwire terminal base (Edco SHA-1250-BASE-A, ordered separately) accommodates all wiring and the protection module is designed for easy replacement. The footprint of the Edco SHA-1250-BASE-A is the same as the Edco ACP-340 and Edco SHA-1210. This makes retrofitting older cabinets easy because internal wire lengths do not have to be adjusted.

The Edco SHA-1250 offers remote sensing circuitry output that is a dry relay contact closure suitable to interface with a modem or computer port for polling remotely. With this feature, a central computer could detect a failed Edco SHA-1250 at the intersection.

The Edco SHA-1250 provides excellent noise suppression over a large frequency range. Typical noise attenuation is 10 dB @ 10 KHz, 50 dB @ 100 KHz and 90 dB @ 1 MHz.

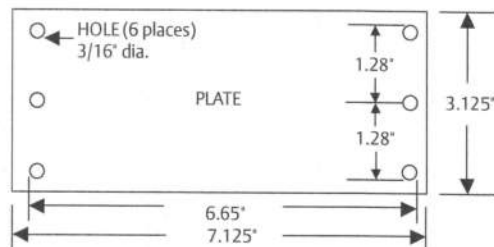
Features

- Plug-in module
- LED indication
- Filtering
- Remote-sensing circuitry
- 5 year warranty

General Technical Specifications

Part Number	Edco SHA-1250
Operating Voltage	120 VAC
Clamping Voltage	340 VAC
Operating Current	15A
Peak Surge Current	26 kA/Mode, 32.5 kA/Phase, 45.5 kA/Total
Operating Frequency	47-63 Hz
EMI Attenuation	50 dB typ
SPD Technology	MOVs w/L-C Filter
Modes of Protection	L-N, L-G, N-G
Status Indication	Power On & MOVs functional
Connection Type	1/4-20 SS Stud Base, Plug-in Module Operating
Operating Temperature	-40°C to +85°C
Dimensions (Inches, Module +Base)	3.5H x 3.125W x 7.125L
Weight (Module + Base)	1 lb 11.5 oz
Certifications	ISO 9001:2000

Mounting



Caution:

1. This product could become excessively hot and rupture in the rare event of power line conditions or surge that exceed its rated operating specification. Appropriate precautions should be exercised.
2. High voltages are present on electrical termination. Unit should be serviced by qualified personnel only.

21/136 Series - Transfer Relays

DPDT, 30 Amps

The 21 and 136 series flash transfer relays have a proven industry record of reliability. Their rugged design has allowed the products to be plugged in and left, for years of service. Recent changes in lighting techniques from incandescent to LED have prompted us to respond with an optional contact design (Code 33) better suited for the low currents of LED lighting, but equally usable with tungsten lamps.

GENERAL SPECIFICATIONS (@ 25° C)

Contacts:

Contact Configuration
Contact Material
Contact Rating
120 / 240VAC Resistive
28VDC Resistive
Motor 120VAC 1 Phase
Motor 240VAC 3 Phase
120VAC Tungsten
Contact Resistance, Initial

21 Series

DPDT
Silver Alloy
30 Amp
20 Amp
1 1/2Hp
2Hp
20 Amp
100 milliohms max @ 6VDC

136 Series

DPDT
Silver Alloy
30 Amp
20 Amp
1/4Hp
-
20 Amp
100 milliohms max @ 6VDC



Coil:

Coils Available
Nominal Coil Power
Input Voltage Tolerance - AC
Input Voltage Tolerance - DC
Drop-out voltage
Duty

AC and DC
2.4VA
75% to 110% of nominal
70% to 110% of nominal
10% of nominal
Continuous

AC
6VA
85% to 110% of nominal
75% to 110% of nominal
10% of nominal
Continuous

The 21 series coil is rectified which provides chatter free operation in brownout conditions down to 85VAC and will not overheat up to 130VAC. Rectified coils also provide less power consumption and less heating

Timing:

Operate Time (max)
Release Time (max)

20 mS
20 mS

20 mS
20 mS

Dielectric Strength:

Across Open Contacts
Between mutually insulated point
Insulation resistance

500Vrms
1500Vrms
1,000 Mohms min @ 500VDC

500Vrms
1500Vrms
1,000 Mohms min @ 500VDC

The 136 Series is a straight AC operated coil with a copper shading ring instead of a rectified coil.

Temperature:

Operating
Storage

-34 to 74°C (-30 to 165°F)
-40 to 105°C (-40 to 221°F)

-34 to 74°C (-30 to 165°F)
-40 to 105°C (-40 to 221°F)

Life Expectancy:

Electrical (full load)
Mechanical (no load)

200,000
5,000,000

100,000
5,000,000

Miscellaneous:

Mounting Position
Enclosure
Weight

Any
Clear Polycarbonate
7.2oz (205 grams)

Any
Clear Polycarbonate
8.1oz (230 grams)

Mating Socket

SK-TRF8-BFW-1

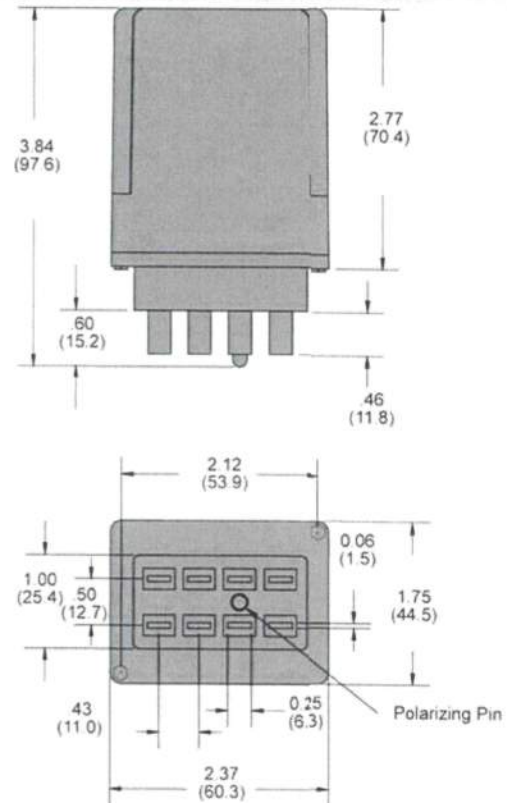
SK-TRF8-BFW-1

General Purpose Relays

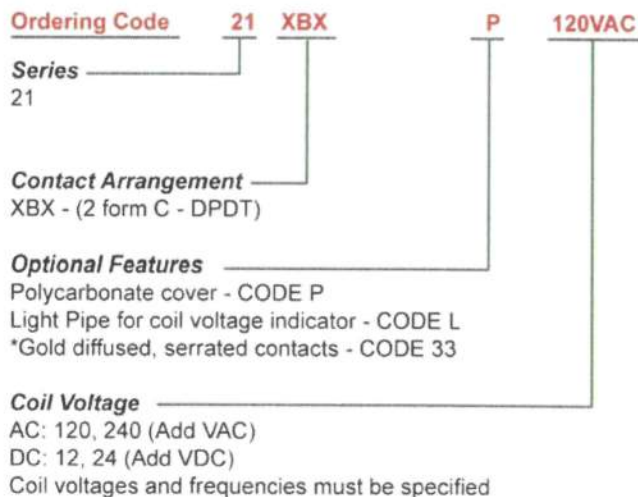
Wire Diagram



Max Outline Dimensions
Dimensions Shown in inches & (millimeters)



Newly Available



*Ideal for LED lamp applications

21 Legacy Part Number Chart

NEMA Approved Part numbers	Alternate Part Number & Voltage
21ACPX-2	21XBXP-120VAC
21ACPX-8	21XBXP-240VAC

May also order

Part numbers/Midtex Type	Voltage
136-62T3A1	120VAC

Coils Available	AC and DC
Nominal Coil Power	2.4VA
Input Voltage Tolerance AC	75% to 110% of nominal
Input Voltage Tolerance DC	70% to 110% of nominal
Drop Out Voltage	10% of nominal
Duty	Continuous

Model 510 Load Switch



Model 810 Flasher



The commitment to quality and reliability found in EDI Signal Monitors continues with the Model 510 solid state Load Switch and Model 810 solid state Flasher.

The heavy duty extruded aluminum heat sink chassis of the Model 510 / 810 is designed to allow the triac device to operate with the full load current at high temperature (+74°C) without exceeding the manufacturer "Maximum Allowable Case Temperature" triac device specification. This helps ensure long life and reliable operation from the triac device. It can be shown that device reliability is logarithmically related to device operating temperature.

Model 510 Operational Features

- ✓ Meets NEMA TS1-1994 & NEMA TS2-2003 requirements.
- ✓ 10 Amp RMS Maximum Load Current over full NEMA temperature range of -34°C to +74°C
- ✓ Operating Voltage Range: 60 to 135 VAC
- ✓ Zero crossing: Less than 5 degrees of zero voltage point
- ✓ Isolation greater than 2000 volts
- ✓ Off state leakage less than 10 mA peak
- ✓ Maximum input current less than 20 mA
- ✓ Peak Inverse Voltage: 600V
- ✓ One cycle surge: 250 A peak.
- ✓ Noise rejection is greater than $\pm 300V$ peak
- ✓ Three electrically independent circuits
- ✓ Dimensions: L = 8.025" x H = 4.170" x W = 1.475"

Model 810 Operational Features

- ✓ Meets NEMA TS1-1994 & NEMA TS2-2003 requirements.
- ✓ 15 Amp RMS per circuit Maximum Load Current over full NEMA temperature range of -34°C to +74°C
- ✓ Operating Voltage Range: 60 to 135 VAC
- ✓ Zero crossing: Less than 5 degrees of zero voltage point
- ✓ Isolation greater than 2000 volts
- ✓ 56 Flashes/Minute, Dual Circuit
- ✓ Maximum input current less than 20 mA
- ✓ Peak Inverse Voltage: 600V
- ✓ One cycle surge: 250 A peak.
- ✓ Noise rejection is greater than $\pm 300V$ peak
- ✓ Three electrically independent circuits
- ✓ Dimensions: L = 8.025" x H = 4.170" x W = 1.475"

EBERLE DESIGN INC.

3819 East La Salle Street
Phoenix, AZ 85040 USA
www.EDIttraffic.com

Tel (480) 968-6407
Fax (602) 437-1996





Plans called specifically for Vantage Edge 2 or approved equal. City to review use of Next system.



Vantage Next® Camera

State-of-the-art video detection that delivers superior performance on a scalable platform



Includes SmartCycle® and PedTrax™
Provides automated bicycle and pedestrian counts



Single CAT5 sensor cable for ease of installation



Captures traffic data including turning movement counts

State-of-the-art video detection system

Vantage Next® is Iteris' next generation video detection system that capitalizes on the latest technology. Vantage Next uses a powerful processor that enables future functional growth while maintaining proven Iteris video detection performance and reliability. The architecture supports expanding ITS applications and easily integrates with existing and future technologies.

Today's traffic engineers and planners need real-time data to ensure maximum efficiency and effectiveness of traffic

management solutions. Vantage Next captures all the data necessary to allow the local traffic controller to manage the intersection remotely while delivering network-wide data back to the traffic management center.

Simple to install and set up

Vantage Next improves the lifecycle cost by simplifying the cabling between the camera and the traffic cabinet and within the cabinet itself. No special tools are required for installation. Exceptional vehicle detection through advanced algorithm design.

iteris®

Benefits

- Low lifecycle cost
- Easy to install, configure, and maintain
- CAT5 cable connections
- Simple and convenient access
- Flexible and scalable
- Automatic traffic counting
- FOV set up from the ground



Vantage Next Viewer

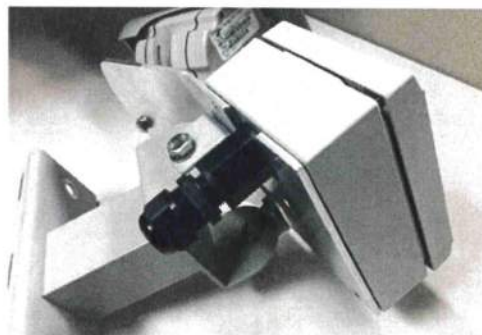
Specifications

Imager	Focal Length 5.4o tele to 50.7o wide	Weight	4.8 Pounds (2.2kg)
	Dynamic Range >100dB	Environment	
	1.0 Lux Minimum Illumination	Temperature	-35°F to +165°F (-34°C to +74°C)
	3D-DNR Noise Reduction	Humidity	0% to 95% non-condensing
Lens	12x Optical Zoom	Vibration	0.5G, 3 axes, 5-30Hz
Heater	Indium Tin Oxide	Shock	10G in all 3 axes
Connections	Terminal Block	Ingress Protection	IP 67
	RJ-45	Regulatory	NEMA TS-2
Electrical	48VDC 5W(Typical) 10W(Max)		FCC part 15, Class A
Physical	16" (406mm) D x 6.25" (159mm) W x 7" (178mm) H	Warranty	3 years limited warranty
	Excluding Mounting Bracket		

Windows is a registered trademark of Microsoft.
iOS is a registered trademark of Apple.



Vantage Next Setup Tool



Optional RJ45 bulkhead connection



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Vantage Next® Shelf-Mount Platform

The next generation of an
integrated detection system



Integrated multi-feature control cabinet
system for simple installation



Sending high-resolution streaming video
to a traffic management center



No processors required; fast and
easy cabinet installation

State-of-the-art platform

Vantage Next® is Iteris' next generation video detection platform that capitalizes on the latest technology. Vantage Next uses a powerful processor that enables future functional growth while maintaining proven Iteris video detection performance and reliability. The architecture supports expanding ITS applications and easily integrates with existing and future technologies.

Easy setup and Configuration

With a user-friendly configuration software and fewer components, the Vantage Next platform sets the bar for simple installation and ease of use.

iteris®

Benefits

- Easy to install, configure and maintain
- CAT5 cable connections
- Simple and convenient access
- Flexible and scalable

Surge Panels and Extenders



Specifications

NEMA SHELF MOUNT CCU

Power	48VDC @ 120W
External Power Supply	DIN Rail 110-240VAC
Dimensions	4" L x 10.5" D x 10.5" H (102mm L x 267mm D x 267mm H)
Weight	6lbs (2.72kgs)
Configurations	TS2; 2 cam or 4 cam, no video processors required
Communications	Ethernet
	USB Type A (x2)
	Wi-Fi
	SDLC communications

GENERAL

Op. Tempature	-35°F to +165°F (-34°C to +74°C)
Humidity	0% to 95% non-condensing
Vibration	0.5G, 3 axes, 5-30Hz
Shock	10G in all 3 axes
Regulatory	NEMA TS-2 compliant
	FCC part 15, Class A
Warranty	3 years limited warranty

Vantage Next Viewer and Next Setup Tool



Windows is a registered trademark of Microsoft.
iOS is a registered trademark of Apple.



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DIAMETER
D"

T" THREAD LENGTH

G" GALV LENGTH

2 x D" RADIUS

H"

TENSILE PROPERTIES

ELONGATION-8"-18% MIN. or
ELONGATION-2"-21% MIN.

REDUCTION AREA -30% MIN. (1/2" to 2")
REDUCTION AREA -22% MIN. (>2" to 2 1/2")
REDUCTION AREA -20% MIN. (>2 1/2" to 3")

THREADS ARE ROLLED OR CUT.

ASTM F-436



AISC Certified
Bridge and Highway Metal
Component Manufacturer
as required by Illinois DOT

J. H. Botts, LLC
P O Box 128
253 East Bruce Street
Joliet, IL 60434-0128

[illegible]

1/8/2015

ATTACHED VALMONT DRAWING NUMBER(S): DB00947 REV. A				
ITEM NUMBER	QUANTITY	DRAWING (PAGE)	STRUCTURE DESIGNATION	FINISH NOTE
1	1	DB00947 REV. A	LEES-CL-B-40-15' (30' MH) -GV-HH-LAB	(A)
2	1	DB00947 REV. A	LEES-CL-B-45-10' (30' MH) -GV-HH-LAB	(A)
3	1	DB00947 REV. A	LEES-CL-B-36-10' (30' MH) -GV-HH-LAB	(A)
4	1	DB00947 REV. A	LEES-CL-B-32-10' (30' MH) -GV-HH-LAB	(A)

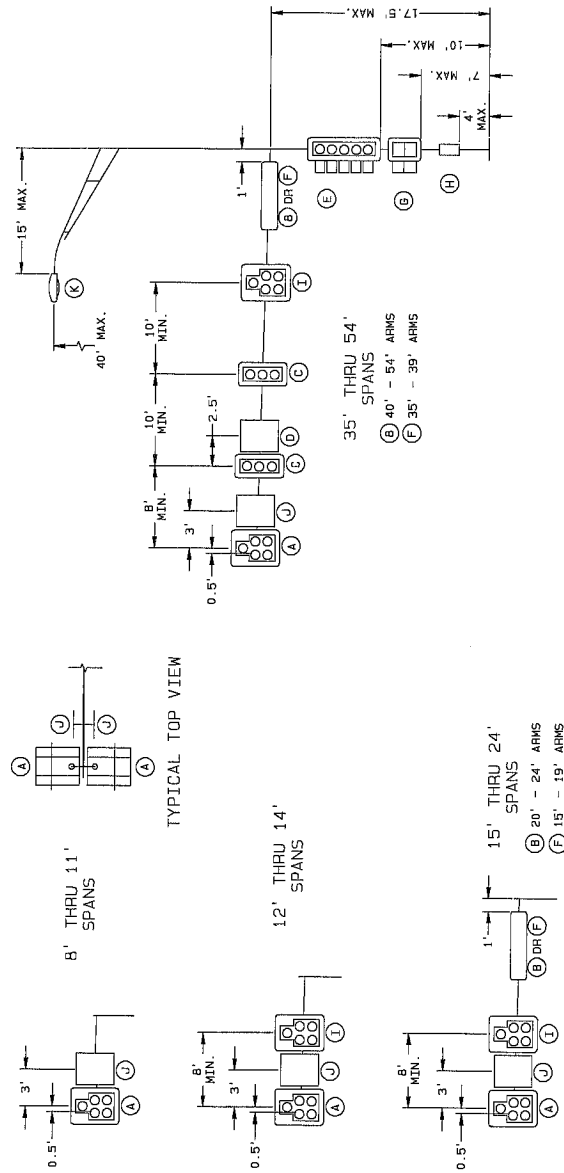
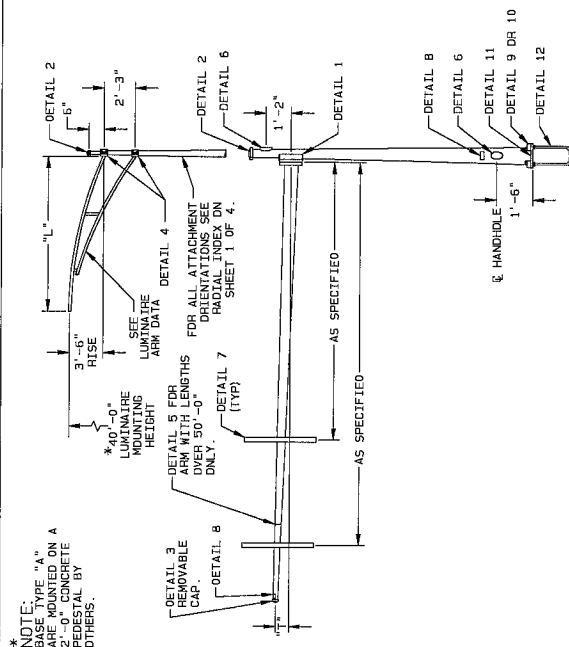
FINISH NOTE - (A)

SYSTEM: GALVANIZED (GV)
 BASE COAT: HOT-DIP GALVANIZED TO
 MEET A123
 PRIME COAT: NONE
 FINISH COAT: NONE
 COLOR: NONE
 SPEC: F-1

NOTE:

POLE SHAFT WILL BE CUT 10'-0" FROM SMALL
 END OF SHAFT TO ACCOMMODATE FOR THE
 SPECIAL 30'-0" MOUNTING HEIGHT

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS ENGINEERING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.		valmont Valley, NE 68064 (402) 359-2201		ORDER NUMBER: 515877-P1 PAGE NUMBER: 1 OF 5 DRAWING NUMBER: M0515877P1
SOLD TO: GATES SALES COMPANY INC. 800 N. TRAILER ELECTRIC P.O. # 0059470 AGENCY: POWER EQUIPMENT SALES COMPANY, INC.		JOB: MIDDLE SCHOOL 4 BAILEY & CENTURY LEE'S SUMMIT, MISSOURI TITLE: TRAFFIC SIGNAL STRUCTURES		
AT7 05/29/21 DRAWN BY-DATE		AT7 05/29/21 CHECK BY-DATE		
REV:		DESCRIPTION:		

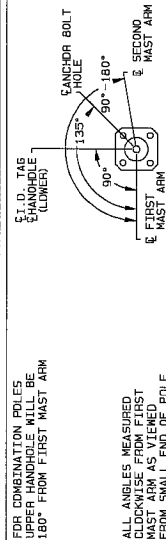


DESIGN CRITERIA:
1994 AASHTO STANDARD SPECIFICATIONS FOR
STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS,
LUMINAIRES AND TRAFFIC SIGNALS. WITH
THE EXCEPTION OF WIND VELOCITY OF 90 MPH
ISO-TACH, AND 1.33 OF ALLOWABLE STRESS
FACTOR FOR GROUP II AND III LOADS.

FOR THIS INFORMATION		SEE PAGE	TABLE
SINGLE MAST ARM TRAFFIC POLE STRUCTURE DATA		4	1
SINGLE MAST ARM WITH LUMINAIRE ARM TRAFFIC POLE STRUCTURE DATA		4	2
DOUBLE MAST ARM WITH LUMINAIRE ARM TRAFFIC POLE STRUCTURE DATA		4	3
DOUBLE MAST ARM TRAFFIC POLE STRUCTURE DATA		4	4
MATERIAL DATA		4	5
SIGNAL MAST ARM DATA		4	6
ELEVATIONS		4	7
LUMINAIRE ARM DATA		4	8
DESIGN DETAILS		2 & 3	—

GENERAL NOTES:

1. ALL WELDS SHALL BE MECHANICALLY CLEANED BEFORE GALVANIZING.
2. GALVANIZED MATERIAL SHALL BE HANDLED ON A MANNER TO AVOID DAMAGE TO THE SURFACES. ANY GALVANIZED MATERIAL ON WHICH THE SPECTER COATING HAS BEEN BRUISED OR BROKEN WILL BE REJECTED OR MAY WITH APPROVAL OF THE ENGINEER BE REPAIRED IN ACCORDANCE WITH SECT. 712.14 OF MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.



DEVICE	DESCRIPTION	PROD. AREA (FT ²)	WEIGHT (LBS)
(A) SIGNAL	DUAL-12"-5 SEC W/BACKPLATE (BACK TO BACK)	12.0	200
(B) SIGN	STREET NAME 120" x 18"	15.00	25
(C) SIGNAL	12"-3 SEC W/BACKPLATE	8.00	60
(D) SIGN	REGULATORY 24" x 30"	5.00	27
(E) SIGNAL	DUAL-12"-5 SEC W/BACKPLATE	24.00	200
(F) SIGN	STREET NAME 96" x 16"	10.7	18
	STREET NAME 96" x 18"	12.0	20
	STREET NAME 96" x 28"	18.7	31
(G) SIGNAL	DUAL-2 SEC-PEDESTRIAN	12.00	80
(H) SIGN	REGULATORY 9" x 18"	2.20	4
(I) SIGNAL	12"-5 SEC W/BACKPLATE	12.00	100
(J) SIGN	DUAL-REGULATORY 24" x 30" (BACK TO BACK)	5.00	54
(K) LUMINAIRE	150 WATT LUMINAIRE	1.00	30

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TITLE CITY OF LEE'S SUMMIT, MO.

TRAFFIC SIGNAL STRUCTURES

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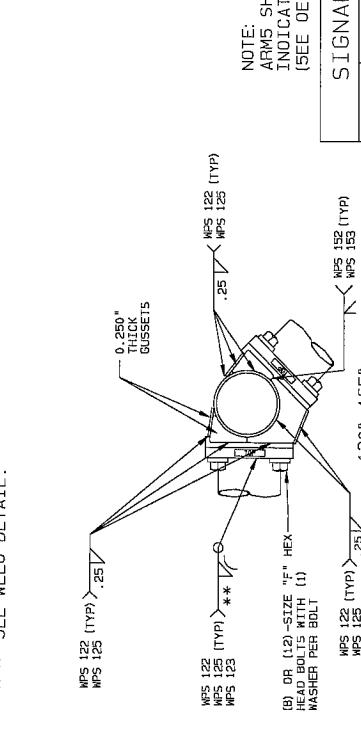
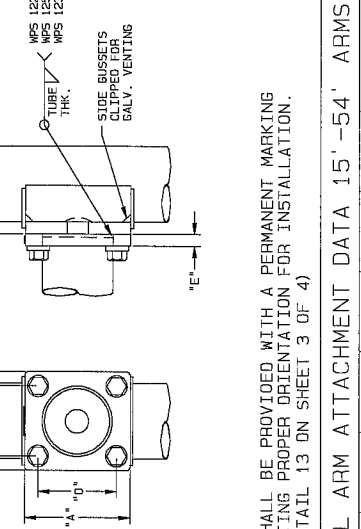
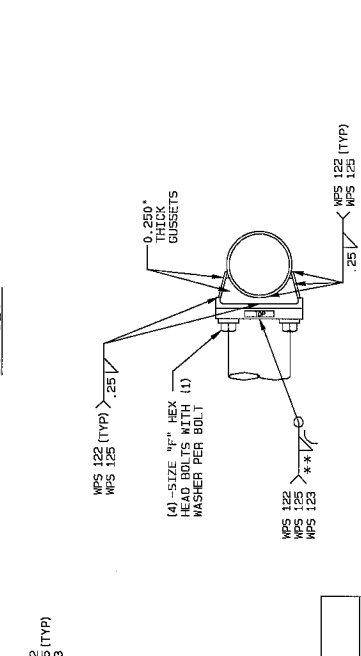
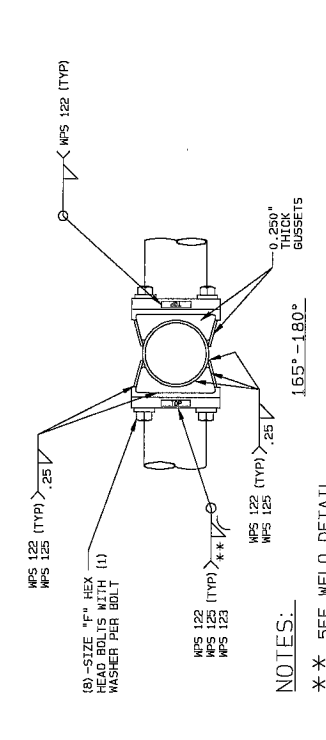
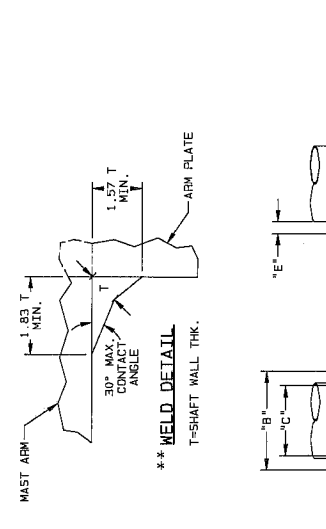
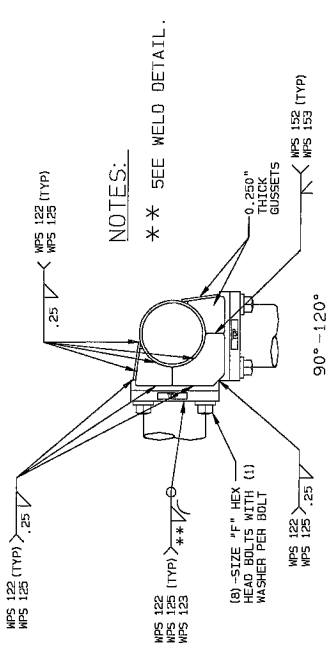
VALMONT INDUSTRIES, INC. RESERVES
THE RIGHT TO INSTALL VARIOUS,
ENGINEER APPROVED, MATERIAL HANGING
ACCOMMODATIONS TO FACILITATE THE
MANUFACTURING PROCESS.

valmont 

Valley, NE 68064
(402) 359-2201

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NOTE: ARMS SHALL BE PROVIDED WITH A PERMANENT MARKING INDICATING PROPER ORIENTATION FOR INSTALLATION. (SEE DETAIL 13 ON SHEET 3 OF 4)

SIGNAL ARM ATTACHMENT DATA 15'-54' ARMS									
POLE GAUGE OR THK.	"A"	"B"	"C"	"D"	"E"	"F"			
10.00"	7	11.75"	5.75"	8.25"	1.00"	1.00" X 2.25"			
11.00"	7	12.50"	10.00"	6.25"	8.75"	1.25" X 2.75"			
12.00"	7	12.75"	11.00"	7.25"	9.00"	1.25" X 2.75"			
12.50"	5	13.00"	11.50"	7.75"	9.25"	1.25" X 2.75"			
12.50"	3	14.00"	12.50"	8.75"	10.25"	1.25" X 3.25"			
13.00"	5	15.50"	14.00"	10.25"	11.75"	1.25" X 3.25"			
13.00"	3	15.75"	14.25"	9.75"	11.25"	1.50" X 3.50"			
14.00"	0.25"	16.75"	15.25"	10.75"	12.25"	1.50" X 4.00"			
14.50"	0.25"	17.00"	15.50"	11.00"	12.50"	1.50" X 4.00"			
15.00"	0.25"	17.25"	15.75"	11.25"	12.75"	1.50" X 4.00"			
16.00"	0.25"	17.50"	16.00"	11.50"	13.00"	1.50" X 4.25"			
17.00"	0.25"	17.75"	16.25"	11.75"	13.25"	1.50" X 4.25"			
18.00"	0.25"	18.50"	17.00"	12.50"	14.00"	1.50" X 4.25"			
DETAIL 1							SIGNAL ARM ATTACHMENT		

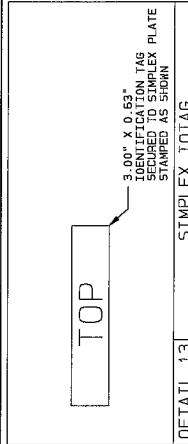
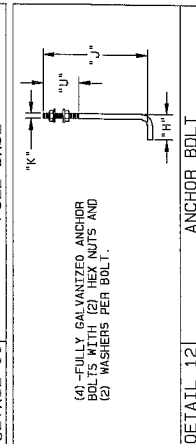
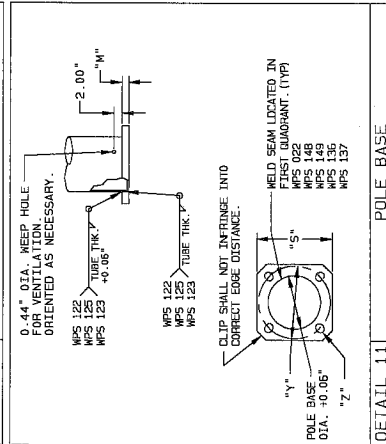
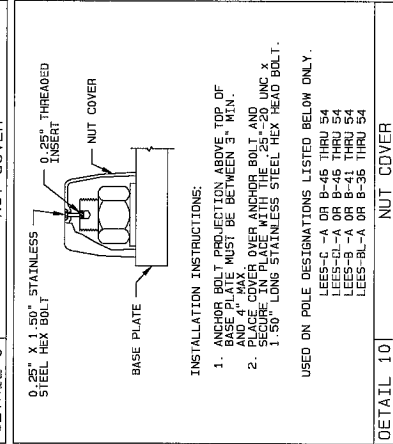
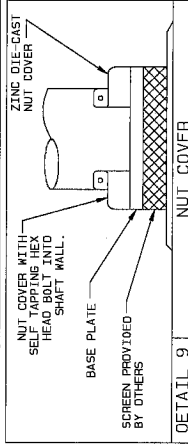
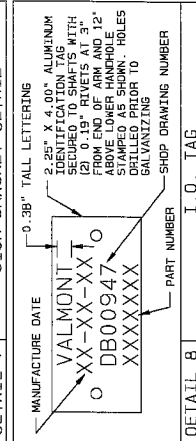
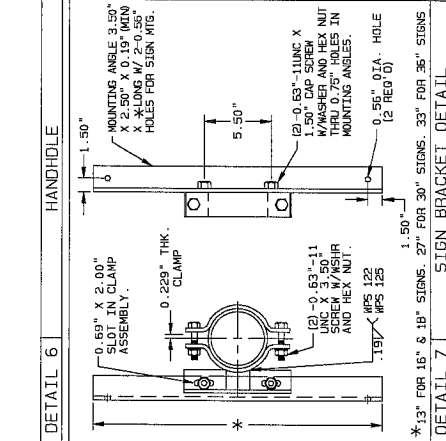
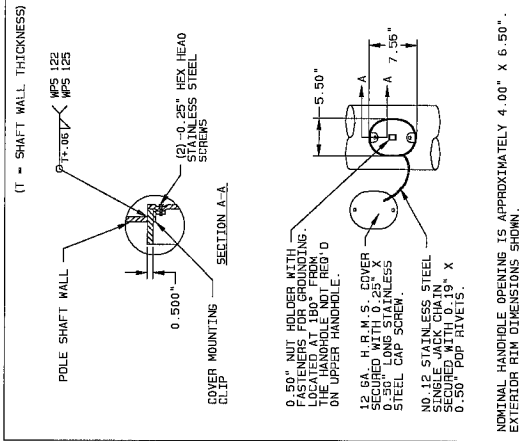
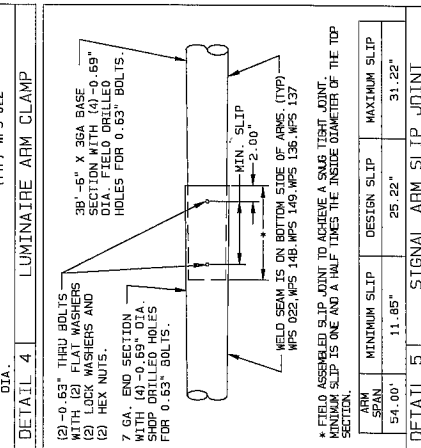
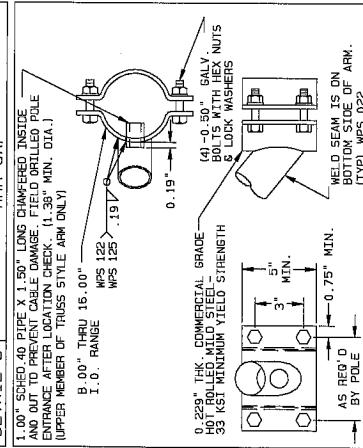
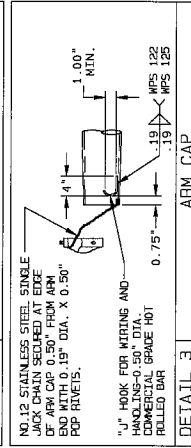
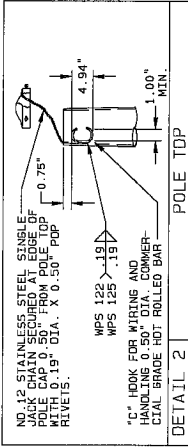


TABLE 1: SINGLE MAST ARM TRAFFIC STRUCTURE DATA													
DESIGNATION KEY		POLE TUBE			POLE BASE			ANCHOR BOLT					
POLE SERIES	BASE TYPE	SIGNAL ARM SPAN (FT)	GAUGE DIA. (IN)	LENGTH (FT)	SQUARE THICK (IN)	BOLT CIRCLE "S" (IN)	THK. "M" (IN)	HOLE DIA. (IN)	LENGTH (IN)	HOOK "J" (IN)	THREAD "U" (IN)		
LEES	C	A OR B	8 THRU 14	10.00	7	14.00	13.50	1.50	1.75	1.50	73.00	6.00	7.50
LEES	C	A OR B	15 THRU 19	12.00	7	17.00	16.00	1.25	1.75	1.50	73.00	6.00	7.50
LEES	C	A OR B	20 THRU 24	12.00	7	17.00	16.00	1.25	1.75	1.50	73.00	6.00	7.50
LEES	C	A OR B	25 THRU 29	13.00	5	16.00	17.00	1.50	2.00	1.75	86.00	6.00	8.00
LEES	C	A OR B	30 THRU 32	13.00	5	16.00	17.00	1.50	2.00	1.75	86.00	6.00	8.00
LEES	C	A OR B	33 THRU 34	13.00	5	16.00	17.00	1.50	2.00	1.75	86.00	6.00	8.00
LEES	C	A OR B	35 THRU 36	13.00	3	16.50	17.50	1.50	2.00	1.75	86.00	6.00	8.00
LEES	C	A OR B	37 THRU 39	14.00	0.250	19.00	19.00	1.50	2.00	1.75	86.00	6.00	8.00
LEES	C	A OR B	40 THRU 41	14.00	0.250	19.00	19.00	1.50	2.00	1.75	86.00	6.00	8.00
LEES	C	A OR B	42 THRU 45	14.50	0.250	20.00	20.00	1.75	2.00	1.75	86.00	6.00	8.00
LEES	C	A OR B	46 THRU 50	15.00	0.250	22.00	22.00	1.75	2.25	2.00	115.00	6.00	8.50
LEES	C	A OR B	51 THRU 54	16.00	0.250	22.00	22.00	1.75	2.25	2.00	115.00	6.00	8.50

TABLE 2: SINGLE MAST ARM WITH LUMINAIRE ARM TRAFFIC STRUCTURE DATA														
DESIGNATION KEY		POLE TUBE			POLE BASE			ANCHOR BOLT						
POLE SERIES	BASE TYPE	SIGNAL ARM SPAN (FT)	LUMINAIRE ARM SPAN (FT)	GAUGE DIA. (IN)	LENGTH (FT)	SQUARE THICK (IN)	BOLT CIRCLE "S" (IN)	THK. "M" (IN)	HOLE DIA. (IN)	LENGTH (IN)	HOOK "J" (IN)	THREAD "U" (IN)		
LEES	CL	A OR B	8 THRU 14	6 THRU 15	11.00	7	16.00	15.00	1.25	1.75	1.50	73.00	6.00	7.50
LEES	CL	A OR B	15 THRU 19	6 THRU 15	12.50	5	17.50	16.50	1.25	1.75	1.50	73.00	6.00	7.50
LEES	CL	A OR B	20 THRU 24	6 THRU 15	13.00	5	18.00	17.00	1.30	1.75	1.50	73.00	6.00	7.50
LEES	CL	A OR B	25 THRU 29	6 THRU 15	13.00	3	16.50	17.50	1.50	2.00	1.75	86.00	6.00	8.00
LEES	CL	A OR B	30 THRU 32	6 THRU 15	13.00	3	16.50	17.50	1.50	2.00	1.75	86.00	6.00	8.00
LEES	CL	A OR B	33 THRU 34	6 THRU 15	13.00	3	16.50	17.50	1.50	2.00	1.75	86.00	6.00	8.00
LEES	CL	A OR B	35 THRU 36	6 THRU 15	14.00	0.250	19.00	19.00	1.50	2.00	1.75	86.00	6.00	8.00
LEES	CL	A OR B	37 THRU 39	6 THRU 15	14.00	0.250	19.00	19.00	1.50	2.00	1.75	86.00	6.00	8.00
LEES	CL	A OR B	40 THRU 41	6 THRU 15	14.50	0.250	20.00	20.00	1.75	2.25	2.00	115.00	6.00	8.50
LEES	CL	A OR B	42 THRU 45	6 THRU 15	15.00	0.250	20.00	20.00	1.75	2.25	2.00	115.00	6.00	8.50
LEES	CL	A OR B	46 THRU 50	6 THRU 15	16.00	0.250	22.00	22.00	1.75	2.25	2.00	115.00	6.00	8.50
LEES	CL	A OR B	51 THRU 54	6 THRU 15	17.00	0.250	23.00	23.00	1.75	2.25	2.00	115.00	6.00	8.50

TABLE 3: DOUBLE MAST ARM WITH LUMINAIRE ARM TRAFFIC STRUCTURE DATA											
DESIGNATION KEY		POLE TUBE			POLE BASE			ANCHOR BOLT			
POLE SERIES	BASE TYPE	SIGNAL ARM SPAN (FT)	LUMINAIRE ARM SPAN (FT)	ORIENTATION ANGLE	SECOND SIGNAL ARM SPAN (FT)	FIRST SIGNAL ARM SPAN (FT)	BASE TYPE	POLE TYPE	POLE SERIES	POLE TYPE	POLE SERIES
LEES	BL	A OR B	14 MAX.	90 THRU 180	14 MAX.	19 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	19 MAX.	90 THRU 180	19 MAX.	24 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	24 MAX.	90 THRU 180	24 MAX.	29 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	29 MAX.	90 THRU 180	29 MAX.	34 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	34 MAX.	90 THRU 180	34 MAX.	39 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	39 MAX.	90 THRU 180	39 MAX.	44 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	44 MAX.	90 THRU 180	44 MAX.	49 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	49 MAX.	90 THRU 180	49 MAX.	54 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	54 MAX.	90 THRU 180	54 MAX.	59 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	59 MAX.	90 THRU 180	59 MAX.	64 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	64 MAX.	90 THRU 180	64 MAX.	69 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	69 MAX.	90 THRU 180	69 MAX.	74 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	74 MAX.	90 THRU 180	74 MAX.	79 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	79 MAX.	90 THRU 180	79 MAX.	84 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	84 MAX.	90 THRU 180	84 MAX.	89 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	89 MAX.	90 THRU 180	89 MAX.	94 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	94 MAX.	90 THRU 180	94 MAX.	99 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	99 MAX.	90 THRU 180	99 MAX.	104 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	104 MAX.	90 THRU 180	104 MAX.	109 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	109 MAX.	90 THRU 180	109 MAX.	114 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	114 MAX.	90 THRU 180	114 MAX.	119 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	119 MAX.	90 THRU 180	119 MAX.	124 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	124 MAX.	90 THRU 180	124 MAX.	129 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	129 MAX.	90 THRU 180	129 MAX.	134 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	134 MAX.	90 THRU 180	134 MAX.	139 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	139 MAX.	90 THRU 180	139 MAX.	144 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	144 MAX.	90 THRU 180	144 MAX.	149 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	149 MAX.	90 THRU 180	149 MAX.	154 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	154 MAX.	90 THRU 180	154 MAX.	159 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	159 MAX.	90 THRU 180	159 MAX.	164 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	164 MAX.	90 THRU 180	164 MAX.	169 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	169 MAX.	90 THRU 180	169 MAX.	174 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	174 MAX.	90 THRU 180	174 MAX.	179 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	179 MAX.	90 THRU 180	179 MAX.	184 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	184 MAX.	90 THRU 180	184 MAX.	189 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	189 MAX.	90 THRU 180	189 MAX.	194 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	194 MAX.	90 THRU 180	194 MAX.	199 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	199 MAX.	90 THRU 180	199 MAX.	204 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	204 MAX.	90 THRU 180	204 MAX.	209 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	209 MAX.	90 THRU 180	209 MAX.	214 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	214 MAX.	90 THRU 180	214 MAX.	219 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	219 MAX.	90 THRU 180	219 MAX.	224 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	224 MAX.	90 THRU 180	224 MAX.	229 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	229 MAX.	90 THRU 180	229 MAX.	234 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	234 MAX.	90 THRU 180	234 MAX.	239 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	239 MAX.	90 THRU 180	239 MAX.	244 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	244 MAX.	90 THRU 180	244 MAX.	249 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	249 MAX.	90 THRU 180	249 MAX.	254 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	254 MAX.	90 THRU 180	254 MAX.	259 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	259 MAX.	90 THRU 180	259 MAX.	264 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	264 MAX.	90 THRU 180	264 MAX.	269 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	269 MAX.	90 THRU 180	269 MAX.	274 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	274 MAX.	90 THRU 180	274 MAX.	279 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	279 MAX.	90 THRU 180	279 MAX.	284 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	284 MAX.	90 THRU 180	284 MAX.	289 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	289 MAX.	90 THRU 180	289 MAX.	294 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	294 MAX.	90 THRU 180	294 MAX.	299 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	299 MAX.	90 THRU 180	299 MAX.	304 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	304 MAX.	90 THRU 180	304 MAX.	309 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	309 MAX.	90 THRU 180	309 MAX.	314 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	314 MAX.	90 THRU 180	314 MAX.	319 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	319 MAX.	90 THRU 180	319 MAX.	324 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	324 MAX.	90 THRU 180	324 MAX.	329 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	329 MAX.	90 THRU 180	329 MAX.	334 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	334 MAX.	90 THRU 180	334 MAX.	339 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	339 MAX.	90 THRU 180	339 MAX.	344 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	344 MAX.	90 THRU 180	344 MAX.	349 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	349 MAX.	90 THRU 180	349 MAX.	354 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	354 MAX.	90 THRU 180	354 MAX.	359 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	359 MAX.	90 THRU 180	359 MAX.	364 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	364 MAX.	90 THRU 180	364 MAX.	369 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	369 MAX.	90 THRU 180	369 MAX.	374 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	374 MAX.	90 THRU 180	374 MAX.	379 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	379 MAX.	90 THRU 180	379 MAX.	384 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	384 MAX.	90 THRU 180	384 MAX.	389 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	389 MAX.	90 THRU 180	389 MAX.	394 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	394 MAX.	90 THRU 180	394 MAX.	399 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	399 MAX.	90 THRU 180	399 MAX.	404 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	404 MAX.	90 THRU 180	404 MAX.	409 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL	A OR B	409 MAX.	90 THRU 180	409 MAX.	414 MAX.	BL	A OR B	LEES	BL	A OR B
LEES	BL										

- = on MoDOT's APL and/or
no exceptions noted.

E = Exceptions Noted, see
cut sheet for comments.

X = MoDOT to review.

**TEAGUE ELECTRIC
CITY OF LEE'S SUMMIT
BAILEY & RANSON
MIDDLE SCHOOL #4
JOB # S-MCCO-002**

	DESCRIPTION	MANUFACTURER	PART #
-	Vehicle Signals	Mobotrex (Eagle)	SA Series
-	LED Lens	GE Current	VLA Series
-	LED Arrow Lens	GE Current	VLA Series
X	Mast Arm Bracket	Pelco Products	AG-0620 Series
X	Side-of-Pole Bracket	Pelco Products	SE-3148-PNC
-	Backplates	Neodesha Plastics	BP Series
-	R10-27a Sign	Gades Sales	30" x 36"
X	Sign Bracket	Peleo Products	AG-0142-30-62-PNC
E	Street Name Signs	Newman Signs	18" x 66"
X	Sign Clips	Band-It	D021
E	Aluminum Pedestal	Pelco Products	PB-5102 & PB-5336
E	Controller	Siemens	EPAC6138M62 ATC
-	Controller Cabinet	Mobotrex (Eagle)	EL712 (P)
X	Terminal Facility	Mobotrex (Eagle)	TF5012
-	Conflict Monitor	Eberle Design	MMU2-16LEIP
X	Arrestor	ASCO	SHA-1250
-	Flash Transfer Relay	Struthers-Dunn	21ACPX-2/21ACPXD-5
X	Bus Interface Unit	Eberle Design	BIU700
-	Loadswitch & Flasher	Eberle Design	510 & 810
X	Video Detection System	Iteris	Vantage Edge2
X	Mast Arm Pole Anchor Bolts	JH Botts	1-1/2" & 2"
-	Mast Arm & Pole	Valmont	DB00408 Rev H

SA Polycarbonate Vehicle Traffic Signal



EAGLE[®]
Traffic Control Systems

Description

The standard signal is composed of three polycarbonate LED-ready body sections containing the door and visor. The basic construction design provides minimum weight but maximum rigidity and strength. The housing, door and visor are injection molded of ultraviolet stabilized, pre-colored opaque polycarbonate. It meets or exceeds ITE specifications.

Features

Housing – One piece unit with serrations in 5° increments at each end. Each housing has provisions for mounting two terminal blocks and attaching backplates. Housings may be fastened together to make multi-section signals. The 8" and 12" housings can be intermixed to form combination signals.

Door – One piece polycarbonate unit equipped with stainless steel hinge pins. Stainless steel thumbscrews are used to hold the door against the housing.

Visor – The removable twist-on visor is secured to the door with stainless steel hardware. Cap, tunnel, and full circle visors are available.

Positive Positioning – Positive positioning and locking is achieved through the use of serrated brackets, mast arm, or span wire fittings.

Terminal Block – All terminal blocks are composed of a sturdy polycarbonate weather resistant casing and stainless steel hardware. Terminal block is standardly installed in the yellow section of signal (second from top).

Hardware – Stainless steel material inside and outside.

Providing 12" Housings
All Black Finish
Tunnel Visors



Eagle Traffic Control Systems continues our 80+ year history of providing excellence in the ever evolving traffic industry. All of Eagle's products are developed with the highest standards of engineering and manufacturing. Eagle maintains a superior level of integrity in interactions with all of our business partners and customers. We also take tremendous pride in being model corporate citizens.

Eagle Traffic Control Systems is a division of:

mobotrex[™]
MOBILITY & TRAFFIC EXPERTS
MANUFACTURING

MoboTrex.com

109 W. 55th Street • Davenport, IA • 52806
301 W. Howard Lane, Suite 200 • Austin, TX • 78753



GTX™ City

VLA Model

LED Signal Modules

8 and 12 inch
Incandescent look (120V)



Robust Features

- Optimal thermal management for longer life.
- Provides performance under extreme field temperature conditions.

Innovative Design

- Low profile module permits efficient installation into existing traffic housings.
- Power consumption levels allow compatibility with most controllers.
- Mask compatible to fit your unique signaling needs.*

Outstanding Performance

- High-brightness central light source and custom optical lensing distribute light uniformly and efficiently.
- Rigorously tested for long life design and low maintenance costs.
- Excellent color uniformity.

Meets Rigorous Certification & Testing Standards

- Intertek ETL Verified compliant.
- Compliant with ITE VTCSH LED Circular Signal Supplement dated June 27th 2005.
- CSA approved version available.

* Sold separately. Refer to masks datasheet TRAF208.

GE current
a Daintree company

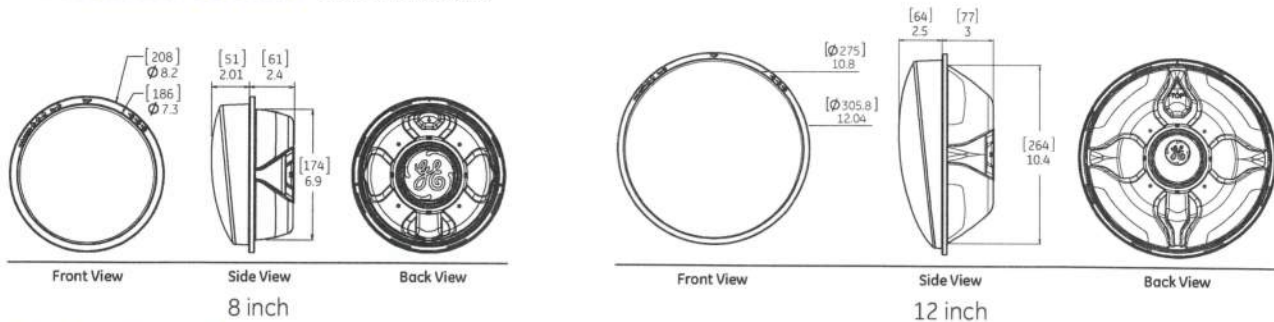


The Greatest Signals Stand the Test of Time.™

GTX™ City LED Signal Modules

• 8 and 12 inch

Mechanical Outline Dimensions in inches [mm]



Design Compliance

Test type	Compliance
Luminous Intensity	ITE VTCSH-LED Circular Signal Supplement -June 2005
Chromaticity	ITE VTCSH-LED Circular -June 2005
Moisture Resistance	Blown Wind Rain MIL-STD-810F method 506.4
Mechanical Vibration	MIL-STD-883 Method 2007
Electronic Noise	FCC Title 47 Sub. B Sec 15 ¹
Transient Voltage Protection	Sec. 2.1.6 NEMA TS2-2003, 300V, 2500W Sec. 2.1.6 NEMA TS2-2003, 600V, 10μF Sec. 2.1.8 NEMA TS2-2003, 1kV, 2Ω
Controller Compatibility	ITE VTCSH-LED Circular Signal Supplement -June 2005
Wiring	NFPA 70, National Electric Code
Transient Suppression	Sec. 8.2 IEC 61000-4-5 & Sec. 6.1.2 ANSI/IEEE C62.41.2 - 2002, 3KV, 2 Ω Sec. 8.0 IEC 61000-4-12 & Sec. 6.1.1 ANSI/IEEE C62.41.2 - 2002, 6KV, 30 Ω

Operating Specifications

Parameter	Rating
Operating Temperature Range*	-40 to +74°C (-40 to +165°F)
Operating Voltage Range	80 to 135 V (60Hz AC)
Power Factor (PF)	> 90%
Total Harmonic Distortion (THD)	< 20%
Minimum Voltage Turn-Off (VTO)	35 V
Turn-On / Turn-Off Time	< 75 ms
Lens & Shell Material	UV Stabilized Polycarbonate
Wiring	8in lamp: 40in, 20 AWG, Color Coded with Strain Relief ** 12in lamp: 40in, 20 AWG, Color Coded with Strain Relief **

* Operating Temperature Range per ITE 2005, Section 3.3.2

** For CSA approved version : 40in, 18AWG, Color Coded with Strain Relief

Product Information

Model Number	Front Shell	Size (in)	AC Voltage Nominal	Power (W) Nominal	Wavelength (nm) nominal	Maintained Intensity (Cd) Minimum ²
DR4-RTFB-VLA	Tinted	8	120V - 60Hz	6.4	628	165
DR4-RCFB-VLA	Clear	8	120V - 60Hz	10.9	588	410
DR4-YZFB-VLA	Tinted	8	120V - 60Hz	7.9	589	410
DR4-YTFB-VLA	Tinted	8	120V - 60Hz	7.3	499	215
DR4-YCFB-VLA	Clear	8	120V - 60Hz	6.7	625	365
DR4-GTFB-VLA	Tinted	12	120V - 60Hz	10.9	588	910
DR4-GCFB-VLA	Clear	12	120V - 60Hz	9.9	589	910
DR6-RTFB-VLA	Tinted	12	120V - 60Hz	9.5	501	475
DR6-RCFB-VLA	Clear	12	120V - 60Hz			
DR6-YZFB-VLA	Tinted	12	120V - 60Hz			
DR6-YTFB-VLA	Tinted	12	120V - 60Hz			
DR6-YCFB-VLA	Clear	12	120V - 60Hz			
DR6-GTFB-VLA	Tinted	12	120V - 60Hz			
DR6-GCFB-VLA	Clear	12	120V - 60Hz			

Standard product equipped with universal connectors (insulated spade-quick disconnect).

All colors available in tinted or clear lens.

¹ Class A

² Measured at vertical angle of -2.5° and at horizontal angle of 0°.

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current
powered by GE

GTX™ City VLA Model LED Arrow Signals

12 inch
Incandescent look (120V)

Excellent Appearance & Visibility

- Efficient optical design allows omnidirectional arrow placement with maximum light output
- Excellent color uniformity creates an incandescent look for easy readability
- New or retrofit use

Outstanding Reliability & Robust Operation

- High efficiency and high-brightness LED light source
- Failed state impedance protection detects the loss of LED load
- Optimized thermal management for longer life
- Provides performance under extreme field temperature conditions

Meets Rigorous Certification & Testing Standards

- Intertek ETL Verified compliant
- DOE compliant
- CSA approved model available
- Using MIL-STD-810F and MIL-STD-883 for environmental robustness, passed reliability and qualification testing, including high temperature, high humidity cycling
- Compliant with ITE VTC SH LED Vehicle Arrow Traffic Signal Supplement dated July 1, 2007



The Greatest Signals Stand the Test of Time.™

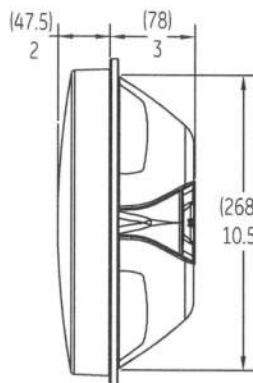
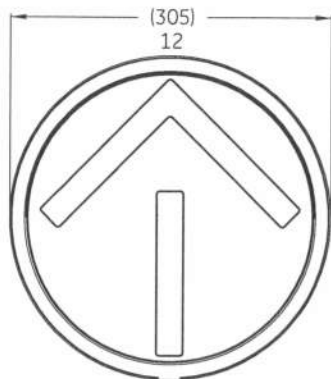


GTX™ City LED Arrow Signal Modules

- 12 inch module

Mechanical Outline

Dimensions in inches. (mm) indicates metric equivalent



Operating Specifications

Parameter	Rating
Operating Temperature Range*	-40 to +74°C (-40 to +165°F)
Operating Voltage Range	80 to 135 V (60Hz AC)
Power Factor (PF)	> 90 %
Total Harmonic Distortion (THD)	< 20 %
Voltage Turn-Off (VTO)	35 V
Turn-On / Turn-Off Time	< 75msec
Lens & Shell Material	UV Stabilized Polycarbonate
Wiring	40in, 20 AWG, Color Coded with Strain Relief

* Operating Temperature Range per ITE 2005 section 3.3.2

Design Compliance

Test type	Compliance
Luminous Intensity	ITE VTCCH-LED Vehicle Arrow Traffic Signal Supplement, July 2007
Chromaticity	ITE VTCCH-LED Vehicle Arrow Traffic Signal Supplement, July 2007
Moisture Resistance	NEMA STD 250 Type 4 - 1991 Blown Wind Rain MIL-STD-810F method 506.4
Mechanical Vibration	MIL-STD-883 Method 2007
Electronic Noise	FCC Title 47 Sub. B Sec.15 ¹
Transient Voltage Protection	Sec. 2.1.6 NEMA TS2-2003, 300V, 2500W Sec. 2.1.6 NEMA TS2-2003, 600V, 10μF Sec. 2.1.8 NEMA TS2-2003
Controller Compatibility	ITE VTCCH-LED Vehicle Arrow Traffic Signal Supplement, July 2007
Wiring	NFPA 70, National Electric Code
Transient Suppression	Sec. 8.2 IEC 1000-4-5 & Sec. 6.1.2 ANSI/IEEE C62.41.2 - 2002, 3KV, 2Ω Sec. 8.0 IEC 1000-4-12 & Sec. 6.1.1 ANSI/IEEE C62.41.2 - 2002, 6KV, 30Ω

Product Information

Model Number	Size (in)	AC Voltage Nominal	Power (W) Nominal	Wavelength (nm) Dominant	Maintained Intensity (Cd) Minimum
DR6-RTAAN-VLA	12	120V - 60Hz	6.5	625	59
DR6-RCAAN-VLA	12	120V - 60Hz	6.5	625	59
DR6-YTAAN-VLA	12	120V - 60Hz	6.5	589	146
DR6-YCAAN-VLA	12	120V - 60Hz	6.5	589	146
DR6-GTAAN-VLA	12	120V - 60Hz	6.5	500	76
DR6-GCAAN-VLA	12	120V - 60Hz	6.5	500	76

All lamps available in tinted or clear lens.

¹ Class A

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TRAF327 (Rev 11/09/16)

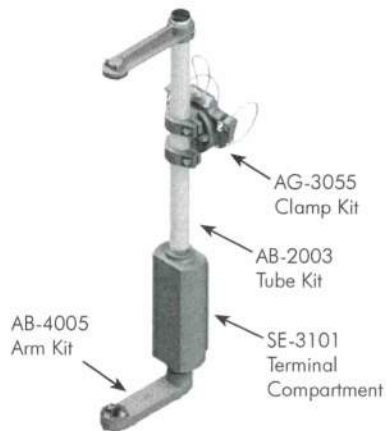
Call us today! 1-888-MY-GE-LED
Visit www.currentbyge.com/tetra

Terminal Compartment Assemblies

Pelco's in-line Astro-Brac terminal compartment assemblies satisfy the need of a terminal compartment without sacrificing all-axis adjustability. Available in cable or band mount.



Astro-Brac Galaxy Assy, 1-Way Terminal Compartment Cable Mount



Signal Section	Cable Length	Cable	Coating
AG-0620 -			
3=3 Sec	See Note	Blank=Galv	PNC=Process No Color
4=4 Sec		SS=Stainless	P_ =Paint
5=5 Sec			

Note:
Cable Length: 62", 84", 96", 110", 120", 132", 144", 220", or 280".



Astro-Brac Stellar Assy, 1-Way Terminal Compartment Cable Mount

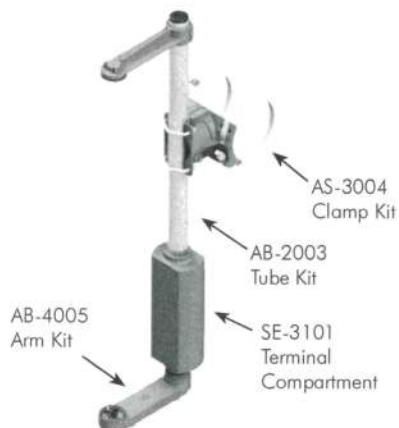


Signal Section	Cable Length	Cable	Coating
AS-0620 -			
3=3 Sec	See Note	Blank=Galv	PNC=Process No Color
4=4 Sec		SS=Stainless	P_ =Paint
5=5 Sec			

Note:
Cable Length: 62", 84", 96", 110", 120", 132", 144", 220", or 280".



Astro-Brac Stellar Assy, 1-Way Terminal Compartment Band Mount



Signal Section	Band Length	Clamp Screw	Coating
AS-0112 -			
3=3 Sec	See Note	Blank=Galv	PNC=Process No Color
4=4 Sec		SS=Stainless	P_ =Paint
5=5 Sec			

Note:
Band Length: 29", 36", 42", 48", 56", 72", 84", 96", or 114".



- Note: 1. All assemblies are supplied standard with stainless steel slotted washer and fasteners.
2. See Reference Section for clamp kit pole diameters.
3. See Reference Section for available paint colors.



Aluminum 1-Way Side-of-Pole with Cast Nipples

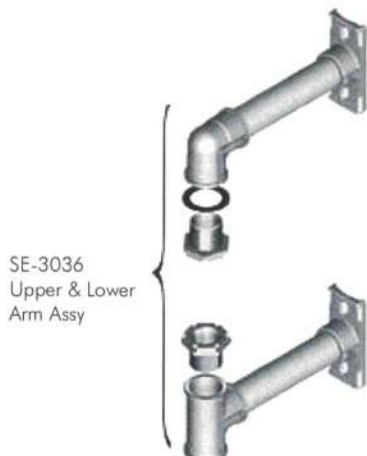
Pelco's Side-of-Pole assemblies are designed to mount traffic and pedestrian signals on the side of traffic signal poles with an upper and lower arm. Available in aluminum or iron, and 1-1/2" NPS, tri-bolt, or tri-stud, and a vast array of hubs to accommodate both 1-way or 2-way signal configurations.



1-Way Upper & Lower Arm Assy, 10" Nipples

SE-3036 - Coating
 PNC=Process No Color
 P__=Paint

Note:
See Components Section for choice of hub plates.



1-Way Upper & Lower Arm Assy, 10" Nipples, Universal Hub Plates

SE-3215 - Coating
 PNC=Process No Color
 P__=Paint



1-Way Upper & Lower Arm Assy, 10" Nipples, Large Pole Hub Plates

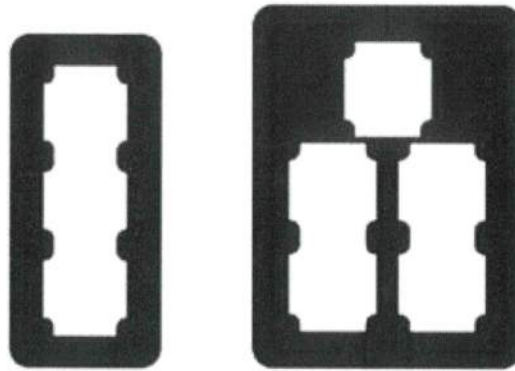
SE-3148 - Coating
 PNC=Process No Color
 P__=Paint

Note: 1. All assemblies are supplied standard with stainless steel fasteners.
 2. See Reference Section for available paint colors.



VACUUM FORMED PLASTIC BACKPLATE

Backplates are fabricated from .125" Black ABS Plastic with a 5" border. Front Side has hair cell finish with a smooth finish on the back. One piece construction designed to withstand wind up to 100 MPH. Furnished with all necessary hardware to attach to signal head.

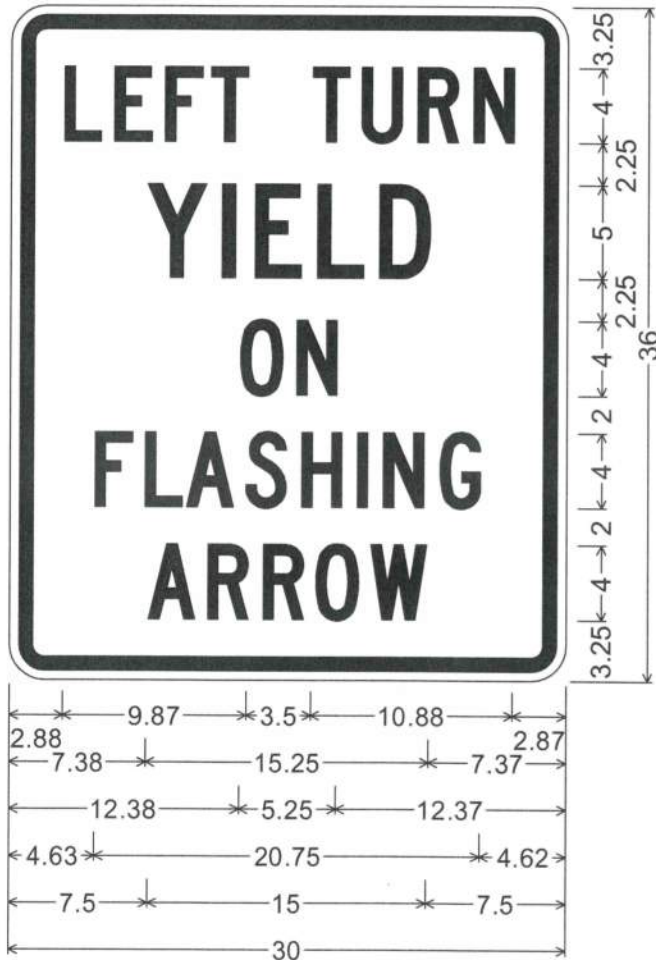


Catalog Number	Number of Signal Sections	Signal Size (Configuration)
BP481PO	1	12"
BP483PO	3	12" – 12" – 12"
BP484PO	4	12" – 12" – 12" – 12"
BP485PO	5	12" – 12" – 12" – 12" – 12"
BP485DHPO	5	12" – 12" – 12" – 12" – 12" "Doghouse Configuration"

.080 Aluminum - High Intensity Prismatic Sheeting

SG 6-8-21

KS-GADES-LEFT TURN YIELD ON FLASHING ARROW-3036
NAN



1.88" Radius, 0.75" Border, 0.50" Indent, Black on, White;

"LEFT", C specified length;

"TURN", C specified length;

"YIELD", C specified length;

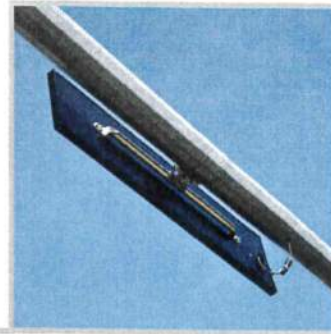
"ON", C specified length;

"FLASHING", C specified length;

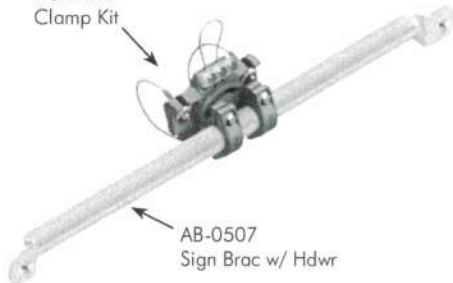
"ARROW", C specified length;

Astro Sign-Brac Formed Tubes Cable Mount

Pelco manufactures a variety of sign brackets in rigid and free-swinging mounts for both flat and internally illuminated signs. Most sign-bracs are available with a cable, band, or tenon mount clamp kit.



AG-3055
Clamp Kit



AB-0507
Sign Brac w/ Hdwr

Astro Sign-Brac, Galaxy Cable Mount, Formed Tube

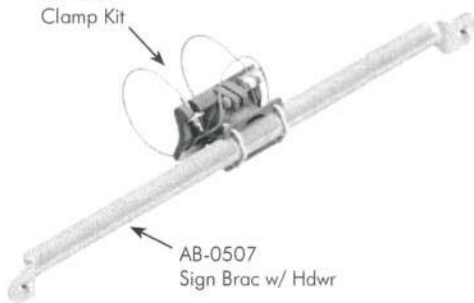
AG-0142 - - - -

*See Chart See Note Blank=Galv PNC=Process No Color
SS=Stainless P__=Paint

Note:

Cable Length: 62", 84", 96", 110", 120", 132", 144", 220", or 280".

AS-3009
Clamp Kit



AB-0507
Sign Brac w/ Hdwr

Astro Sign-Brac, Stellar Cable Mount, Formed Tube

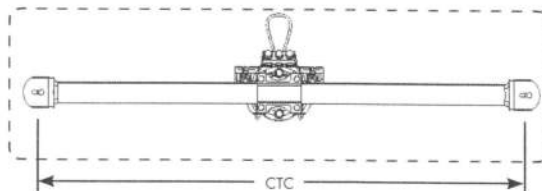
AS-0142 - - - -

*See Chart See Note Blank=Galv PNC=Process No Color
SS=Stainless P__=Paint

Note:

Cable Length: 62", 84", 96", 110", 120", 132", 144", 220", or 280".

Max CTC:	9"	12"	15"	18"	24"	30"	36"	42"	48"	60"
Sign Length:	15"	18"	21"	24"	30"	36"	42"	48"	54"	66"



Notes:

90 mph wind zone maximum: 16 sq-ft

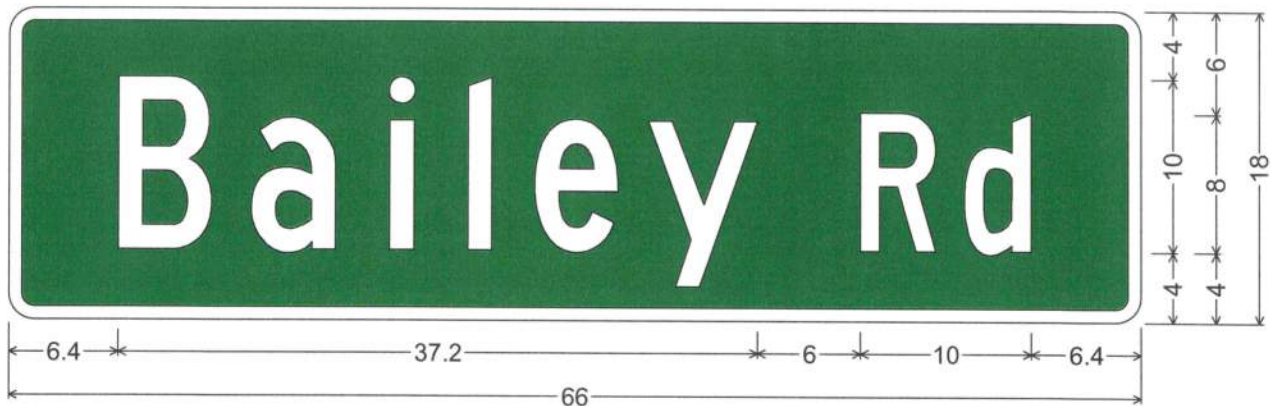
1. Capacity listed is only for applications with the clamp kit mounted in the center of the sign.
2. Signs must be properly engineered for specific application.
3. For higher wind zones and multiple brackets use assemblies shown on T6-1 & T6-2.

Note: 1. All assemblies are supplied standard with stainless fasteners. Stainless upgrade shall include stainless steel cable.
2. See Reference Section for clamp kit pole diameters.
3. See Reference Section for available paint colors.



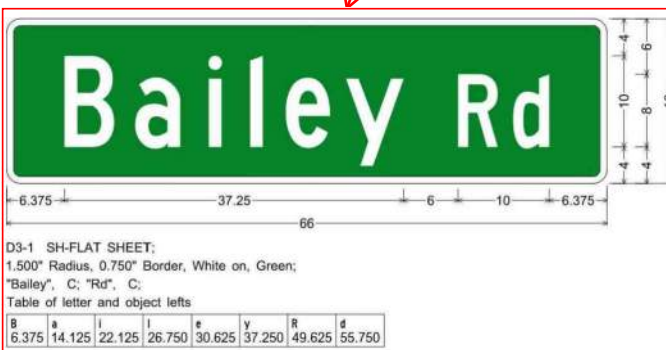
.125 Aluminum - High Intensity Prismatic Sheeting

SG 6-8-21
KS-GADES-BAILEY RD-6618
NAN



1.5" Radius, 0.8" Border, White on, Green;
"Bailey", C; "Rd", C;

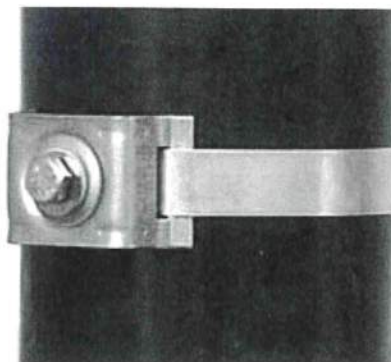
Ensure sign
dimensions match
Sheet 39 of plans
(pasted below)



Single Bolt Flared Leg Brack-It

Reinforced rib design provides additional strength to resist effects of stress, wind and vibration.

[\(back to index\)](#)



**Single Bolt Flared Leg Brack-It
D02189**

Reinforced rib design provides additional strength to resist effects of stress, wind and vibration.

- 200/300 Stainless Steel
- Industry standard for all round poles greater than 3" diameter
- Includes a 5/16-18 x 3/4" stainless steel hex head bolt with stainless steel and polypropylene washer, no nuts required
- 3/4" wide band slot will allow a single or a double wrap of [BAND-IT® band](#)
- Brack-it assembly can be reused
- Used to mount traffic signs, security devices, and enclosures
- Withstands stress and wind vibration with specialty designed reinforcement ribs
- Fully threaded to solidly anchor attachment bolts
- Applied with [BAND-IT® Band and Buckles](#), [BAND-FAST®](#), [VALU-STRAP™](#), [VALU-STRAP Plus™](#), or [ULTRA-LOK® Systems](#).

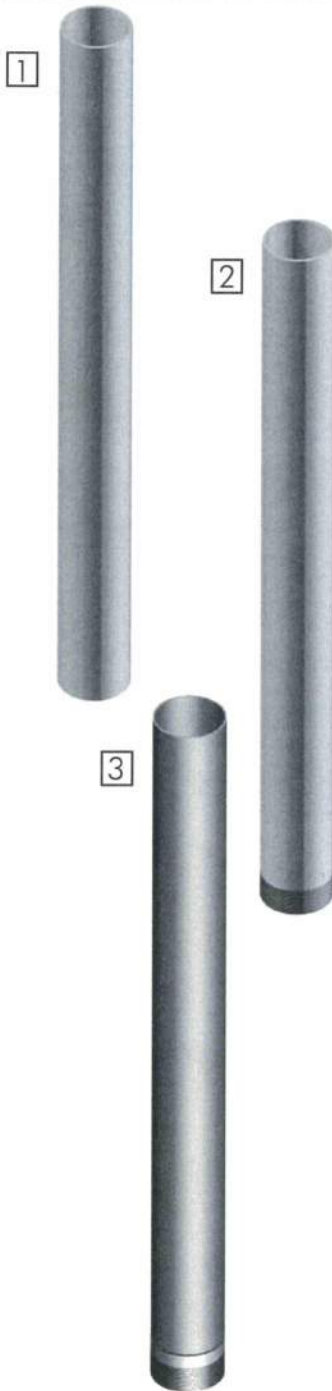
Part No.	Description	Thickness		Package Quantity	Package Weight	
		In	(mm)		Lbs	Kg
D02189	Single bolt flared leg SS Brack-It with SS bolt, washer and fiber washer. 3/4 " slot	0.070	1.78	50 / Box	7.0	3.2
D02299	Single bolt flared leg SS Brack-It only. 3/4" slot	0.070	1.78	50 / Box	5.5	7.5

Information

[How do I choose the right hardware for mounting signs?](#)

Pedestal Poles

Pelco offers aluminum, iron, and plastic bases in various sizes as well as poles in aluminum and steel. Pelco's cast aluminum square base is FHWA certified and meets or exceeds AASHTO break-away requirements. Plastic replacement doors offer an economical way to deter vandalism.



1. Pedestal Pole, 4" Sch 40, Spun Alum No Threads

PB-5101 - Length - Coating

PNC=Process No Color
P__=Paint

2. Pedestal Pole, 4"- 8 NPT Sch 40, Spun Alum w/ Pelican ID

PB-5100 - Length - Coating

PNC=Process No Color
P__=Paint

Pedestal Pole, 4"- 8 NPT Sch 80, Spun Alum

PB-5102 - Length - Coating

PNC=Process No Color
P__=Paint

-Ensure meets Sec 1092.2.2
of MoDOT Standard Specs
including 4.5" O.D.
-15' Length

Pedestal Pole, 4"- 8 NPT Sch 40, Steel

PB-5201 - Length - Coating

P__=Paint

Pedestal Pole, 4"- 8 NPT Sch 40, Galv Steel

PB-5200 - Length - GLV - Coating

Blank=Galvanized Only
P__=Paint over Galvanized

3. Pedestal Pole, Welded, 4"- 8 NPT w/ 2-3/4" Nipple Length, Steel

PB-5218 - Length - Coating

GLV=Galvanized
P__=Paint

Pedestal Pole, Welded, 4"- 8 NPT w/ 5-1/2" Nipple Length, Steel

PB-5219 - Length - Coating

GLV=Galvanized
P__=Paint

Note: 1. Standard poles are typically sold in 1 foot increments. For other lengths contact sales.
2. See Reference Section for available paint colors.

Square Pedestal Bases Aluminum

Pelco offers aluminum, iron, and plastic bases in various sizes as well as poles in aluminum and steel. Pelco's cast aluminum square base is FHWA certified and meets or exceeds AASHTO break-away requirements. Plastic replacement doors offer an economical way to deter vandalism.



Square Base Assembly, Alum w/ Alum Door

Door	Set Screws in Collar	Grounding Lug	Coating
PB-5334 - ☐	- ☐	- ☐	- ☐
NL=No Logo Blank=Pelco Logo	1S=1 Hex Bolt 3S=3 Set Screws Blank=None	GL=Grounding Lug Blank=None	PNC=Process No Color P__=Paint



Square Base Assembly, Alum w/ Plastic Door

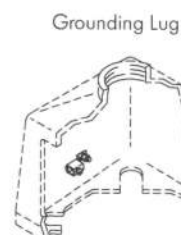
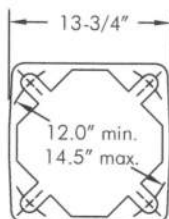
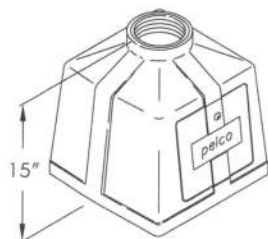
Door	Set Screws in Collar	Grounding Lug	Coating
PB-5335 - ☐	- ☐	- ☐	- PNC
NL=No Logo Blank=Pelco Logo	1S=1 Hex Bolt 3S=3 Set Screws Blank=None	GL=Grounding Lug Blank=None	

Square Base Assembly, Alum Heat Treated w/ Alum Door

Door	Set Screws in Collar	Grounding Lug	Coating
PB-5336 - ☐	- ☐	- ☐	- ☐
NL=No Logo Blank=Pelco Logo	1S=1 Hex Bolt 3S=3 Set Screws Blank=None	GL=Grounding Lug Blank=None	PNC=Process No Color P__=Paint

Square Base Assembly, Alum Heat Treated w/ Plastic Door

Door	Set Screws in Collar	Grounding Lug	Coating
PB-5337 - ☐	- ☐	- ☐	- PNC
NL=No Logo Blank=Pelco Logo	1S=1 Hex Bolt 3S=3 Set Screws Blank=None	GL=Grounding Lug Blank=None	



- Note: 1. AASHTO Certified Square Aluminum Base: All Aluminum square bases above are available with AASHTO Certifications and FHWA approval. Please specify by adding the Certification Part No. C-1001 in addition to the base part number.
2. All assemblies are supplied standard with stainless fasteners.
3. See Reference Section for available paint colors.

SIEMENS
Ingenuity for life

m60 Linux Series Controllers

Advanced Traffic Controllers for ATC and NEMA

The Siemens m60 Linux Series controllers comply with industry's latest standards, with variants compatible for ATC (Advanced Traffic Controller) and NEMA (National Electrical Manufacturers Association) standards.

Built on the proven m50 hardware architecture and combined with state-of-the-art SEPAC traffic controller software, the m60 controllers are Linux-based, with a number of functions to meet the needs of traffic agencies of all sizes.

The m60 series controllers provide multiple Ethernet, USB and other interfaces to facilitate backwards

compatibility. The field devices also enable easy hosting of third-party applications, exceeding industry standards by providing usability features that include the new Siemens Multiview Display concept of real-time active status, context-sensitive HELP screens and user-programmable favorite buttons.



Providing EPAC6138M62 ATC

Sheet 39 of Plans requires
Econolite Cobalt.

usa.siemens.com/intelligenttraffic

General features

- Linux operating system
- Operates in both TS-2 Type 1 and 2 cabinets
- 64MB DRAM, 512MB FLASH, 2MB SRAM
- Five RJ-45 Ethernet connectors
- 4 Port USB hubs
- Active TFT backlit LCD display
- Siemens Multiview Display technology designed for the everyday user in mind
- m50 USB upgrade package available
- Compatible with SEPAC traffic controller software

ATC variant

- Exceeds ATC 5.2 standard compliance
- Modular ATC communications hub
- m60 ATC upgrade package available

NEMA variant

- Exceeds NEMA TS-2 requirements
- m60 NEMA upgrade package available

Central Processor Unit (CPU)

- Open architecture platform with standard Linux operating system
- MPC 8270 266MHz processor
- 512MB FLASH, 64MB DRAM and 2MB SRAM
- TOD Clock with automatic daylight savings time adjustment
- Power supply will power the SRAM during power failures
 - Supports SEPAC controller software
 - SD memory card
 - Operating System: Linux 2.6.39

Keyboard and Display

- Siemens Multiview Display with dual view screens
 - 5 1/8 inch active TFT display
 - Easily removable display and keypad
 - Easily identifiable, discrete HELP button
 - Real-time context sensitive HELP screens
 - User programmable function buttons F1 to F5



- Removable LED backlit LCD with 16 lines of 40 characters with adjustable contrast
- Emulation of terminal per Joint NEMA/AASHTO/ITE Standard
- Key quantity and function per Joint NEMA/AASHTO/ITE Standard

m60 Communications Module

- 10 Base-T Ethernet with built-in switch and 4 front panel RJ-45 connectors
 - ENET1 and ENET2 network switches
 - 5 10/100 TCP/IP ports
- 4 USB 2.0 Ports and a Datakey Port
- Dedicated GPS - SP8 Port (9pin EIA-574)
- Unique MAC address assigned by the Institute of Electrical and Electronic Engineers (IEEE)

Controller Housing

- 7 slots with card guides for standard size Versa Modules
- 2 slots with card guides for standard Joint NEMA/AASHTO. ITE ATC modems (optional) or ATC Communication Module or USB Plate
- Polycarbonate construction (excluding back panel), rear mounting tabs and aluminum power supply mounting plate for electrical grounding
- Carrying handle

EL712, Size P Cabinet NEMA Size 6



EAGLE[®]
Traffic Control Systems

Description

The Eagle Size P Cabinet protects electronic components including controllers and other equipment. It features an aluminum enclosure for protection from all forms of outdoor natural elements including rain, sleet, and snow, as well as seepage and splash.

Optional Configurations

- Outward-rotating door handle.
- Double-flanged door frame to provide a better splash shield.
- Continuously welded enclosure for maximum protection from contaminants.
- Unique lock/keying combinations.
- Custom finish per customer requirements.
- Lifting ears.



Eagle EL712 Cabinet

Eagle Traffic Control Systems continues our 80+ year history of providing excellence in the ever evolving traffic industry. All of Eagle's products are developed with the highest standards of engineering and manufacturing. Eagle maintains a superior level of integrity in interactions with all of our business partners and customers. We also take tremendous pride in being model corporate citizens.

Eagle Traffic Control Systems is a division of:

mobotrex[™]
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MANUFACTURING

MoboTrex.com

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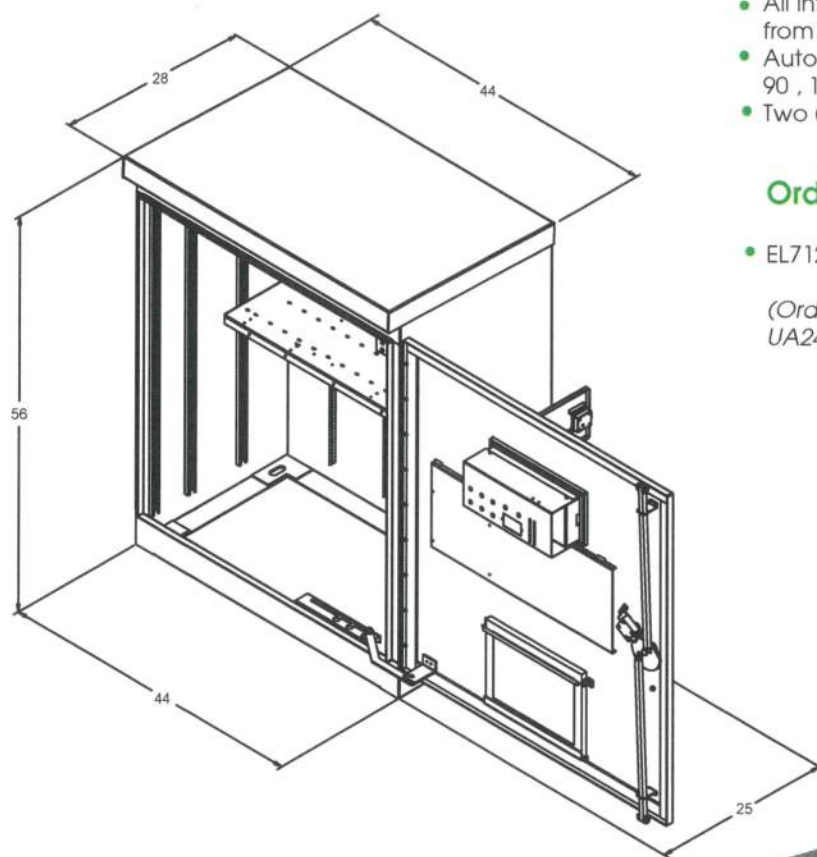
EL712, Size P Cabinet NEMA Size 6



EAGLE[®]
Traffic Control Systems

Standard Door Specifications

- Provided with three-point locking mechanism with nylon rollers at the top and bottom.
- 3/4"-diameter stainless steel inward turning handle with provisions for padlocking.
- Main door lock - industrial standard pin tumbler lock with #2 key.
- Louvered inlet with filter to prevent dirt from entering with air flow.
- Closed cell PVC door gasket with polyester film to prevent sticking.
- Heavy gauge stainless steel continuous hinge utilizing a 1/4"-diameter stainless steel hinge pin for door support, carriage bolted in place for ease of door removal.
- A 2"-deep fabricated switch compartment is included with a standard police lock and a stainless steel continuous hinge with a 1/8"-diameter hinge pin riveted in place. Compartment is mounted flush to the door.



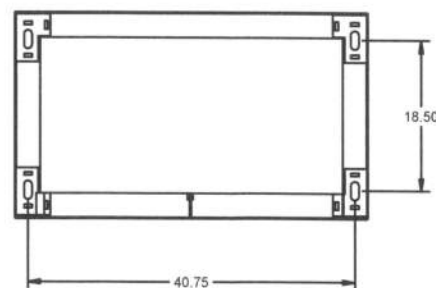
Standard Enclosure Specifications

- Completely fabricated from .125"-thick type 5052-H32 mill-finished aluminum utilizing intermittently welded construction, subsequently weatherproofed with silicone sealant.
- Internal attaching components include six (6) adjustable "C" mounting channels (3 per side), and three (3) slotted rails on rear wall for attaching equipment panels.
- The door opening is double-flanged on top to prevent water drops when the door is open. The opening also includes a mount for two door-operated switches.
- Thermoconvection air ventilation system utilized with provisions for mounting fan for forced-air cooling.
- Exhaust outlet openings are provided under the roof over-hang.
- All internal and external hardware is fabricated from non-corrosive material.
- Automatic door stop to hold main door open at 90, 120 and 135.
- Two (2) shelves included.

Ordering Information

- EL712- Base Mount

(Order 1 (set of 4) anchor bolts,
UA242, if required)



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MANUFACTURING

TF5000 Series Load Bay NEMA TS-2, Type 1



Description

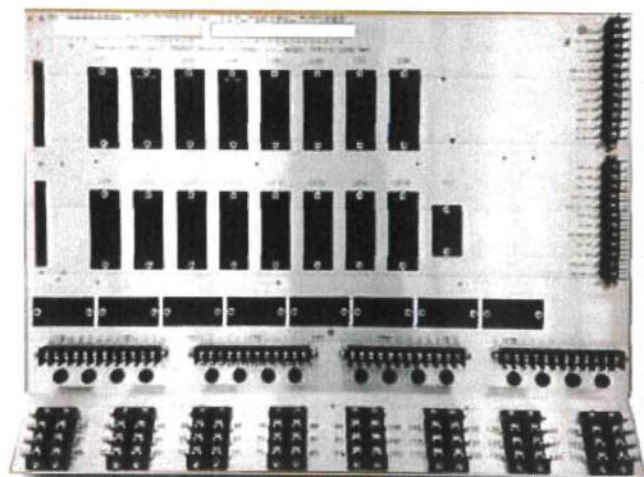
Eagle load bays are available in dedicated four, eight, twelve, and sixteen load switch configurations.

The TF5000 series load bays are hardwired for ease of maintenance and economical modification.

The flash indication colors can be programmed from the front panel, using only a screwdriver.

The load bays will fit into most existing Eagle cabinets and can be installed in less than four (4) hours.

Note: The TF5016 and TF5116 loadbays will only fit in size 6 or larger cabinets.



Eagle TF5115 Load bay

PartNumber	TF5004	TF5008	TF5012/TF5112**	TF5016/TF5116**
Controller	NEMA TS2, Type1	NEMA TS2, Type1	NEMA TS2, Type1	NEMA TS2, Type1
Monitor	MMU	MMU	MMU	MMU
Load Switch Positions	4	8	12	16
Flash Ready Positions	2	4	6	8
NEMA-2 Circuit Flasher	1	1	1	1
Dimensions	18.5"H x 19.25"W	18.5"H x 19.25"W	18.5"H x 19.25"W	18.5"H x 28.25"W

* The TF5112 and TF5116 use 10-32 screw connector field terminal connections.

Eagle Traffic Control Systems continues our 80+ year history of providing excellence in the ever evolving traffic industry. All of Eagle's products are developed with the highest standards of engineering and manufacturing. Eagle maintains a superior level of integrity in interactions with all of our business partners and customers. We also take tremendous pride in being model corporate citizens.

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SSM-12LE is acceptable.
MoDOT to review use of LEip.

Complies With The New
NEMA MMU2 Standard and
MUTCD Requirements



SmartMonitor

MMU2-16LE SERIES

NEMA LCD MALFUNCTION MANAGEMENT UNIT

- **MMU2-16LEip** with Ethernet Port
- **MMU2-16LE** with EIA-232 Port

Whether you're a **NOVICE** or **EXPERT** Signal Technician, wouldn't it be great if you could:

- ☐ Use a built-in SETUP WIZARD to **quickly and accurately configure** the Signal Monitor to the exact requirements of the cabinet and intersection?
- ☐ Use a MENU DRIVEN LCD interface to **view** vital cabinet operational details such as field signal voltages, historical event logs, and monitor configuration data?
- ☐ Use a built-in DIAGNOSTIC WIZARD to **automatically diagnose** cabinet malfunctions and **pinpoint** faulty signals?

If your answer is Yes, the **MMU2-16LE SmartMonitor®** is for YOU!

NEW MMU2-16LE SmartMonitor® ENHANCED FEATURES

NEMA TS2-2003 (R2008) Standard Including Amendment #4:	The MMU2-16LE SmartMonitor® meets all specifications of the NEMA Standard TS2-2003 (R2008) for the MMU2 configuration while maintaining compatibility with NEMA TS1-1989 Assemblies.
NEMA Standard Flashing Yellow Arrow PPLT:	The MMU2-16LE SmartMonitor® supports MUTCD Flashing Yellow Arrow PPLT operation and meets / exceeds the NEMA Standard MMU2 requirements of TS-2 Amendment #4-2012, providing modes for both TS-2 or TS-1 cabinet configurations.
Standardized Communications:	Real-time SDLC communications with the Controller Unit exchanges field input status, Controller Unit output status, fault status, MMU programming, and time and date.
Full Intersection & Status Display:	Two high contrast, large area Liquid Crystal Displays (LCD) continuously show full RYG(W) intersection status. A separate graphic LCD provides a menu driven user interface to status, signal voltages, configuration, event logs, and the Help system.
Event Logging:	A time-stamped nonvolatile event log records the complete intersection status as well as AC Line events, configuration changes, monitor resets, temperature and true RMS voltages.
Setup Wizard:	Use the built-in Setup Wizard to configure the Nema Enhanced settings of the SmartMonitor® by answering a short series of questions regarding intersection design and operation.
Diagnostic Wizard: and Help System	The Diagnostic Wizard <i>automatically pinpoints</i> faulty signals and offers trouble-shooting guidance. The integrated Help System provides context sensitive operational assistance.
TS-1 Type 12 with SDLC Mode:	The MMU2-16LE SmartMonitor® can be configured to operate with the Port 1 SDLC function and Diagnostic Wizard enabled in a TS-1 twelve channel cabinet with no cabinet wiring changes.
Program Card Memory:	Enhanced settings of the MMU2-16LE SmartMonitor® are stored in nonvolatile memory on the EDI Program Card. Moving the Program Card to another MMU2-16LE automatically transfers all settings.
Signal Sequence History Log:	The five Signal Sequence History logs stored in nonvolatile memory graphically display up to 30 seconds of signal status prior to each fault event.
LEDguard®:	This EDI innovative signal threshold technique can be used to increase the level of monitoring protection when using LED based signal heads.
EDI RMS-Engine:	A DSP coprocessor converts AC input measurements to True RMS voltages, virtually eliminating false sensing due to changes in frequency, phase, or sine wave distortion.
ECcom PC Software:	Access to the MMU2-16LE data is provided by the industry standard EDI ECcom Windows based software for status, event log retrieval, configuration, and data archival.

EBERLE DESIGN INC.

3510 East Atlanta Avenue
Phoenix, AZ 85040 USA
www.EDITraffic.com

Tel (480) 968-6407
Fax (602) 437-1996





SHA-1250 and SHA-1250-BASE-A (Sold Separately)

Edco SHA-1250 120 VAC — 1 Phase — Modular

The Edco SHA-1250 is an upgraded version of the Edco SHA-1210. The Edco SHA-1250 also incorporates two LEDs for failure indication in a modular package (Utilizes 12 pin Beau connector). The hardwire terminal base (Edco SHA-1250-BASE-A, ordered separately) accommodates all wiring and the protection module is designed for easy replacement. The footprint of the Edco SHA-1250-BASE-A is the same as the Edco ACP-340 and Edco SHA-1210. This makes retrofitting older cabinets easy because internal wire lengths do not have to be adjusted.

The Edco SHA-1250 offers remote sensing circuitry output that is a dry relay contact closure suitable to interface with a modem or computer port for polling remotely. With this feature, a central computer could detect a failed Edco SHA-1250 at the intersection.

The Edco SHA-1250 provides excellent noise suppression over a large frequency range. Typical noise attenuation is 10 dB @ 10 KHz, 50 dB @ 100 KHz and 90 dB @ 1 MHz.

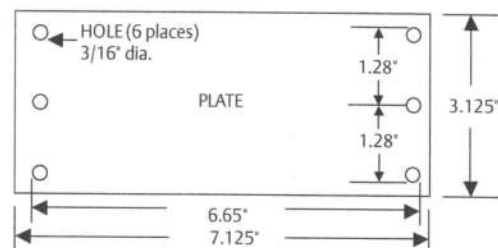
Features

- Plug-in module
- LED indication
- Filtering
- Remote-sensing circuitry
- 5 year warranty

General Technical Specifications

Part Number	Edco SHA-1250
Operating Voltage	120 VAC
Clamping Voltage	340 VAC
Operating Current	15A
Peak Surge Current	26 kA/Mode, 32.5 kA/Phase, 45.5 kA/Total
Operating Frequency	47-63 Hz
EMI Attenuation	50 dB typ
SPD Technology	MOVs w/L-C Filter
Modes of Protection	L-N, L-G, N-G
Status Indication	Power On & MOVs functional
Connection Type	1/4-20 SS Stud Base, Plug-in Module Operating
Operating Temperature	-40°C to +85°C
Dimensions (Inches, Module +Base)	3.5H x 3.125W x 7.125L
Weight (Module + Base)	1 lb 11.5 oz
Certifications	ISO 9001:2000

Mounting



Caution:

1. This product could become excessively hot and rupture in the rare event of power line conditions or surge that exceed its rated operating specification. Appropriate precautions should be exercised.
2. High voltages are present on electrical termination. Unit should be serviced by qualified personnel only.

21/136 Series - Transfer Relays

DPDT, 30 Amps

The 21 and 136 series flash transfer relays have a proven industry record of reliability. Their rugged design has allowed the products to be plugged in and left, for years of service. Recent changes in lighting techniques from incandescent to LED have prompted us to respond with an optional contact design (Code 33) better suited for the low currents of LED lighting, but equally usable with tungsten lamps.

GENERAL SPECIFICATIONS (@ 25° C)

Contacts:

	21 Series	136 Series
Contact Configuration	DPDT	DPDT
Contact Material	Silver Alloy	Silver Alloy
Contact Rating		
120 / 240VAC Resistive	30 Amp	30 Amp
28VDC Resistive	20 Amp	20 Amp
Motor 120VAC 1 Phase	1 1/2Hp	1/4Hp
Motor 240VAC 3 Phase	2Hp	-
120VAC Tungsten	20 Amp	20 Amp
Contact Resistance, Initial	100 milliohms max @ 6VDC	100 milliohms max @ 6VDC

Coil:

Coils Available	AC and DC	AC
Nominal Coil Power	2.4VA	6VA
Input Voltage Tolerance - AC	75% to 110% of nominal	85% to 110% of nominal
Input Voltage Tolerance - DC	70% to 110% of nominal	75% to 110% of nominal
Drop-out voltage	10% of nominal	10% of nominal
Duty	Continuous	Continuous

Timing:

Operate Time (max)	20 mS	20 mS
Release Time (max)	20 mS	20 mS

Dielectric Strength:

Across Open Contacts	500Vrms	500Vrms
Between mutually insulated point	1500Vrms	1500Vrms
Insulation resistance	1,000 Mohms min @ 500VDC	1,000 Mohms min @ 500VDC

Temperature:

Operating	-34 to 74°C (-30 to 165°F)	-34 to 74°C (-30 to 165°F)
Storage	-40 to 105°C (-40 to 221°F)	-40 to 105°C (-40 to 221°F)

Life Expectancy:

Electrical (full load)	200,000	100,000
Mechanical (no load)	5,000,000	5,000,000

Miscellaneous:

Mounting Position	Any	Any
Enclosure	Clear Polycarbonate	Clear Polycarbonate
Weight	7.2oz (205 grams)	8.1oz (230 grams)
Mating Socket	SK-TRF8-BFW-1	SK-TRF8-BFW-1



The 21 series coil is rectified which provides chatter free operation in brownout conditions down to 85VAC and will not overheat up to 130VAC. Rectified coils also provide less power consumption and less heating.

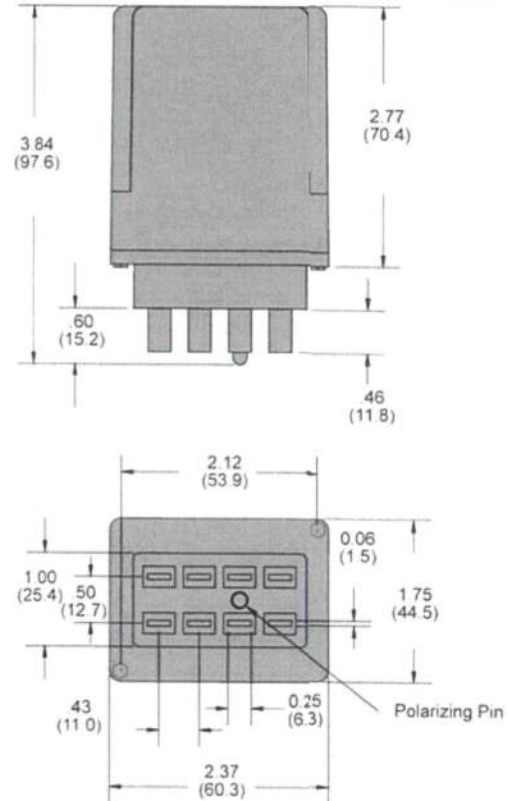
The 136 Series is a straight AC operated coil with a copper shading ring instead of a rectified coil.

General Purpose Relays

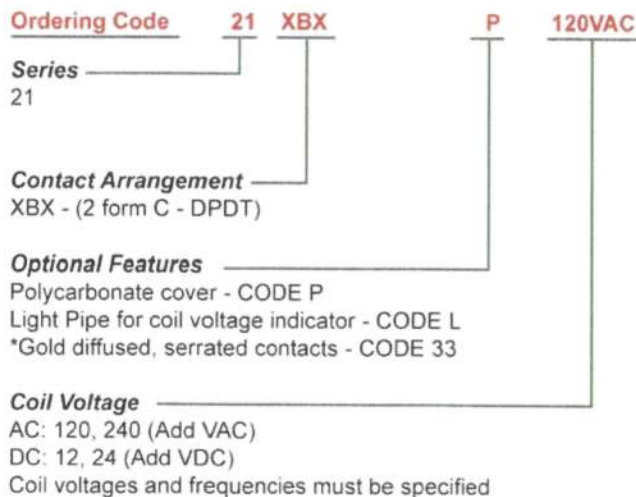
Wire Diagram



Max Outline Dimensions
Dimensions Shown in inches & (millimeters)



Newly Available



*Ideal for LED lamp applications

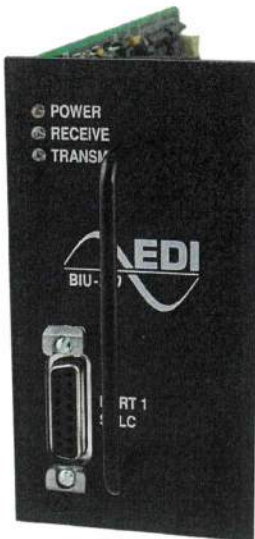
21 Legacy Part Number Chart

NEMA Approved Part numbers	Alternate Part Number & Voltage
21ACPX-2	21XBXP-120VAC
21ACPX-8	21XBXP-240VAC

May also order

Part numbers/Midtex Type	Voltage
136-62T3A1	120VAC

Coils Available	AC and DC
Nominal Coil Power	2.4VA
Input Voltage Tolerance AC	75% to 110% of nominal
Input Voltage Tolerance DC	70% to 110% of nominal
Drop Out Voltage	10% of nominal
Duty	Continuous



BIU-700

NEMA TS-2 BUS INTERFACE UNIT

The BIU-700 Bus Interface Unit (BIU) performs the interface between Port 1 of the Controller Unit and the Loop Detector Racks, Terminals and Facilities, and other devices in a NEMA TS-2 Cabinet Assembly. Its functions include controlling load switch outputs, detector resets, communicating with Inductive Loop Detectors and other devices, and the conditioning and conversion of Terminals and Facilities and Loop Detector call inputs for the Controller Unit.

Each EDI BIU-700 is put through a vigorous three part Total Quality Assurance program and tested under the extreme environmental conditions experienced on the street. It is this commitment to quality and performance that EDI products are known for, providing years of trouble free operation.

BIU-700 OPERATIONAL FEATURES

- Basic Functions:** The BIU-700 Bus Interface Unit meets or exceeds all requirements of the NEMA Standard TS2-2003 for the BIU configuration.
- Display Indicators:** Separate Power, Receive, and Transmit LED indicators display DC power status and SDLC Port 1 status.
- Input / Output Pins:** Signal I/O Configuration:
- ✓ 15 DC Output pins
 - ✓ 24 Programmable Input / Output pins
 - ✓ 8 DC Input pins
 - ✓ 4 Optically isolated input pins
 - ✓ 1 Line Frequency Reference input pin
 - ✓ 4 Address Select input pins
- Output Drivers:** All outputs are rated at 150mA continuous sink current. Each output provides a 500mA typical current limit. Outputs are rated to 50 volts and utilize a voltage clamp for inductive transient protection.
- Isolated Inputs:** Four optically isolated inputs provide isolation for Pedestrian Detector and Remote Interconnect inputs. These inputs are intended for direct connection to 12 Vac from the cabinet power supply for Pedestrian Detector applications. They may also be connected for 'Low True' DC applications when the Opto Common pin is connected to a 24Vdc supply.

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Model 510 Load Switch



Model 810 Flasher



The commitment to quality and reliability found in EDI Signal Monitors continues with the Model 510 solid state Load Switch and Model 810 solid state Flasher.

The heavy duty extruded aluminum heat sink chassis of the Model 510 / 810 is designed to allow the triac device to operate with the full load current at high temperature (+74°C) without exceeding the manufacturer "Maximum Allowable Case Temperature" triac device specification. This helps ensure long life and reliable operation from the triac device. It can be shown that device reliability is logarithmically related to device operating temperature.

Model 510 Operational Features

- ✓ Meets NEMA TS1-1994 & NEMA TS2-2003 requirements.
- ✓ 10 Amp RMS Maximum Load Current over full NEMA temperature range of -34°C to +74°C
- ✓ Operating Voltage Range: 60 to 135 VAC
- ✓ Zero crossing: Less than 5 degrees of zero voltage point
- ✓ Isolation greater than 2000 volts
- ✓ Off state leakage less than 10 mA peak
- ✓ Maximum input current less than 20 mA
- ✓ Peak Inverse Voltage: 600V
- ✓ One cycle surge: 250 A peak.
- ✓ Noise rejection is greater than $\pm 300V$ peak
- ✓ Three electrically independent circuits
- ✓ Dimensions: L = 8.025" x H = 4.170" x W = 1.475"

Model 810 Operational Features

- ✓ Meets NEMA TS1-1994 & NEMA TS2-2003 requirements.
- ✓ 15 Amp RMS per circuit Maximum Load Current over full NEMA temperature range of -34°C to +74°C
- ✓ Operating Voltage Range: 60 to 135 VAC
- ✓ Zero crossing: Less than 5 degrees of zero voltage point
- ✓ Isolation greater than 2000 volts
- ✓ 56 Flashes/Minute, Dual Circuit
- ✓ Maximum input current less than 20 mA
- ✓ Peak Inverse Voltage: 600V
- ✓ One cycle surge: 250 A peak.
- ✓ Noise rejection is greater than $\pm 300V$ peak
- ✓ Three electrically independent circuits
- ✓ Dimensions: L = 8.025" x H = 4.170" x W = 1.475"

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RZ-4 Advanced™ WDR

Advanced video detection
enhanced with wide dynamic
range technology



Specifically designed for vehicle and
bicycle detection applications



Detects vehicles in any lighting and
weather conditions



Cable termination located at the rear of
the camera simplifies cable connection

The industry's most advanced video detection camera

The RZ-4 Advanced WDR (RZ-4A WDR) is Iteris' premium video detection camera. Optimized for traffic video detection, the RZ-4A WDR combines Iteris' best-in-class all-weather performance video detection with Wide Dynamic Range (WDR) technology – using the advanced imager technology to handle extremes in light, dark, and severe glare conditions. In harsh backlit conditions, vehicles can be detected with >100dB of dynamic range; the camera can handle the most complicated scene. The RZ-4A WDR's simple installation, backward compatibility, and the capability to adjust the camera from the cabinet provides an advanced, easy-to-use solution for video vehicle detection.

The RZ-4A WDR detects vehicles in any lighting and weather conditions. In contrast to other CCTV type or thermal imaging cameras, the RZ-4A WDR delivers a video signal that is optimized for processing by the Vantage® video detection systems.

Easy to install and maintain

The RZ-4A WDR camera also has the capability to set up the field of view (FOV) from the bucket truck or from the ground at the cabinet.

iteris®

More Benefits

- Improved color and clarity of the video image, ideal for connection to a Vantage EdgeConnect™
- Quick-Click connectors and adjustable camera mount streamline installation and minimize setup time- no crimping tools required!
- Set up and configure at the camera or from the ground using the Advanced Lens Adjustment Module (sold separately)
- Performs in the most challenging lighting conditions
- Advanced heater enables optimal video detection performance in adverse weather conditions
- Advanced self-cleaning lens ensures lower camera maintenance.

Specifications

Imager	811 x 508 effective pixels
	540 TV lines minimum
	Automatic white balance
	>50 dB S/N ratio
	Dynamic range >100 dB
	.003 lux capable
Lens	3D-DNR Noise Reduction
	Focal length and focus adjustable at the rear of housing for a horizontal field of view ranging from 4.5°tele to 48° wide
	12x zoom
Focus	Adjustable/auto focus
Connections	Terminal block type connection

Physical	
Dimensions	17" (43.2cm) long x 5" (12.7cm) diameter (without mounting bracket)
Weight	5.7 pounds (2.6 Kg), including camera, lens, using, sunshield, and mounting bracket
Environment	
Temperature	-31° F to +165° F (-35° C to +74° C)
Humidity	0% to 100%
Vibration	0.5G, 3 axes, 5-30 Hz
Shock	10G in all 3 axes
Power	
Standard	115/230 VAC (5W typical, 25W max.) 50/60 Hz
Heater	Indium Tin Oxide, proportional power



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Vantage Edge®2

A machine vision processor that delivers superior performance



Includes SmartCycle® and PedTrax™ technology



Simple to use interface reduces training time and improves productivity



Ease of set up and minimal lane closure time reduces manpower cost

State-of-the-art video detection processor

The Vantage Edge®2 processor is a key component in the family of Vantage® video detection solutions. The module combines state-of-the-art technology with sophisticated algorithms to deliver dependable vehicle detection required for today's complex transportation systems. The Edge2 processor features single or dual video inputs to maximize configuration efficiencies for intersection control, highway monitoring, and ramp metering flow control applications.

Maximum flexibility with optional modules

The processor module is complimented by multiple Input/Output and Extension Modules that provide flexible and expandable solutions to meet the needs of larger and more complex intersection configurations.

The Edge2 processor module and its associated expansion modules fit into standard detector racks to simplify installation and set up. All modules are designed as a simple and cost-effective replacement for the inductive loop amplifier module configuration.

iteris®

More Benefits

- "Plug and play" operation enables use of existing detector rack
- Expandable and modular system allows for optimal configuration that helps to reduce cost while preserving room for incremental growth
- Includes PedTrax™ for pedestrian measurement and speed

The Edge2 processor and all of its associated modules can be completely configured by using only a mouse and video monitor, eliminating the need for expensive laptops or PDA devices.

Specifications

Power Consumption	12 or 24 VDC, 7W maximum	Detector I/O	Outputs (open collector +24VDC nominal 50mA)
	• @12VDC - 490mA • @24VDC - 280mA		• 4 on rear edge of module
Video	Input type	Status Indicators	24 detection zones per camera channel
	• NTSC, PAL • 75 Ohm 1 Vpp		4 LEDs indicate output detection state
	1 input channel		4 LEDs indicate video source
	Single BNC connector	Environmental	-35°F to +165°F (-37°C to +74°C)
	2 input channel		0% to 95% humidity non-condensing
	• Dual BNC connector		0.5Gm, 3 axes, 5-30Hz vibration tested
	Output – All models		10G in all 3 axes for shock testing
	• Single BNC connector	Mechanical	7" L x 4.5" H x 2.31" W. (17.78cm x 11.43cm x 5.86cm)
Communication Ports	USB A Mouse		0.8lb (.363Kg)
	USB A Thumbdrive	Warranty	3 years limited warranty
	USB B Comms	Regulatory	NEMA TS-2 Compliant
			FCC part 15, Class A



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Technical drawing of a galvanized steel pipe. The drawing shows a side view of the pipe with a threaded section and a flared end. Key dimensions and labels include:

- DIAMETER**: Indicated at the top left with a dimension line and the label "D".
- T" THREAD LENGTH**: Indicated with a dimension line and the label "T" followed by "THREAD LENGTH".
- G" GALV LENGTH**: Indicated with a dimension line and the label "G" followed by "GALV LENGTH".
- 2 x D" RADIUS**: Indicated at the bottom right with a dimension line and the label "2 x D" followed by "RADIUS".
- H"**: Indicated with a dimension line and the label "H" followed by a double quote.

TENSILE PROPERTIES

ELONGATION-8"-18% MIN. or
ELONGATION-2"-21% MIN.

REDUCTION AREA -30% MIN. (1/2" to 2")
REDUCTION AREA -22% MIN. (>2" to 2 1/2")
REDUCTION AREA -20% MIN. (>2 1/2" to 3")

GALVANIZE:
NUTS:
THREADS:

ASTM-A 153, CLASS C & F329
ASTM A563-Grade as noted, ANSI B18.2.2
UNIFIED NATIONAL COARSE
ANSI B1.1 CLASS 2A
THREADS ARE ROLLED OR CUT.

WASHERS:

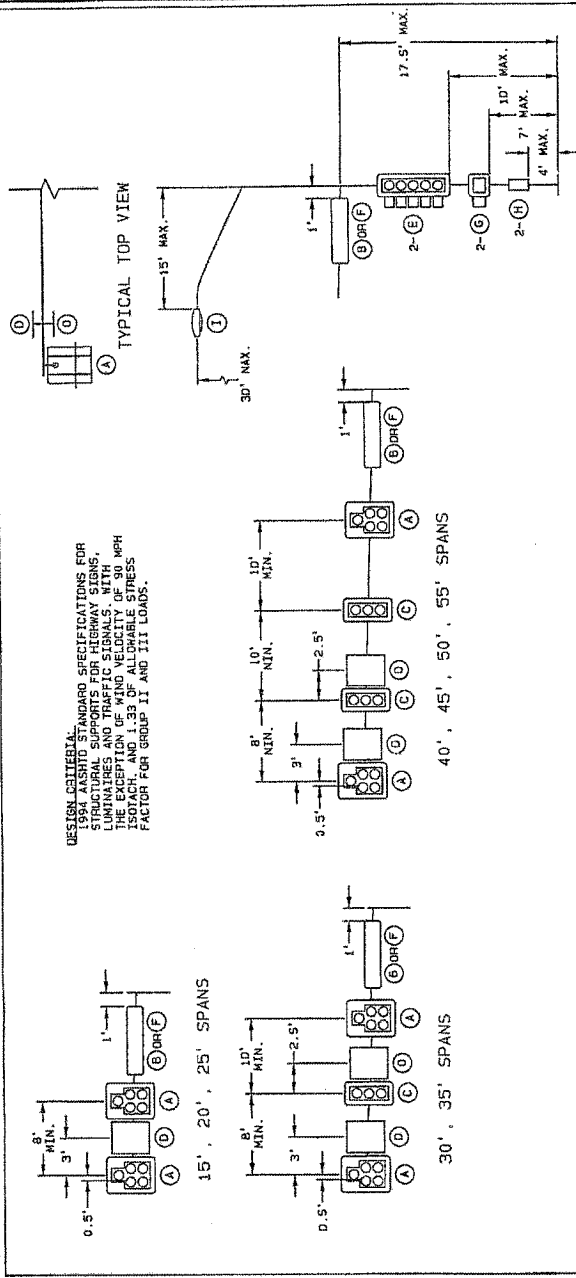
ASTM F-436



**AISC Certified
Bridge and Highway Metal
Component Manufacturer
as required by Illinois DOT**

J. H. Botts, LLC
P O Box 128
253 East Bruce Street
Joliet, IL 60434-0128

[illegible]



DEVICE	DESCRIPTION	PROJ. AREA (SQ. FT.)	WEIGHT (LBS.)
① SIGNAL	12" 5-SECT. OL HEAD W/BACK PLATE	12.00	173
② SIGN	STREET NAME 120" X 18"	15.00	25
③ SIGNAL	12" 3-SECT. OL HEAD W/BACK PLATE	8.00	95
④ SIGN	REGULATORY SIGN 30" X 36"	7.50	19
⑤ SIGNAL	VERTICAL 5-SECT. OL HEAD W/BACK PLATE	12.00	100
⑥ SIGN	STREET NAME 96" X 18"	12.00	20
⑦ SIGNAL	1-SECT. PROESTRIAN HEAD	2.00	15
⑧ SIGN	REGULATORY 9" X 12"	0.80	2
⑨ LUMINAIRE	150 WATT LUMINAIRE	1.00	30
MAX. LOADING INFORMATION			

GENERAL NOTES	
1.	ALL WELDS SHALL BE MECHANICALLY CLEANED BEFORE GALVANIZING.
2.	GALVANIZED MATERIAL SHALL BE HANDLED ON A MANNER TO AVOID DAMAGE TO THE SURFACES. ANY GALVANIZED MATERIAL ON WHICH THE SPECIFIER CONSIDERS GALVANIZING HAS BEEN SELECTED OR GALVANIZED MATERIAL ON THE EXISTING STRUCTURE BEING GALVANIZED SHALL BE REMOVED IN ORDER TO PREVENT THE EFFECTS OF GALVANIC CORROSION. PER MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1981.6 OR 2004 OF MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
3.	SEE DOCUMENTS OF APPROVED WELDING PROCEDURES FOR MISSOURI TRAFFIC STANDARDS.
4.	PER 2004 MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 1080.2 ALL LOW CARBON STEEL BOLTS AND NUTS TO USE GALVANIZED ASTM A307 AND HIGH STRENGTH BOLTS, NUTS AND WASHERS TO USE GALVANIZED ASTM A325.

TYPICAL POST LOADING	
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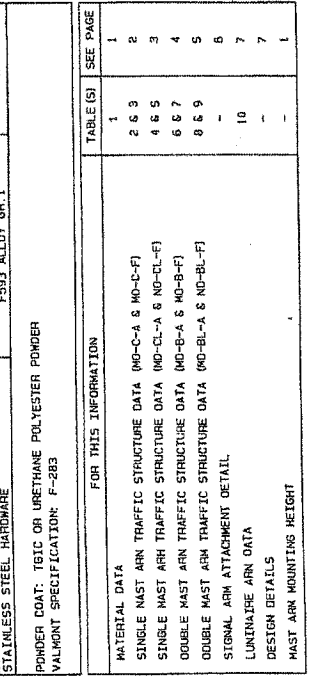


TABLE 4: SINGLE MAST ARM TRAFFIC STRUCTURE DATA (TYPE "A" BASE ARE MOUNTED ON A 2'-0" CONCRETE PEDESTAL BY OTHERS)

DESIGNATION KEY			POLE TUBE DATA			BASE PLATE DATA			ANCHOR BOLT DATA			SIGNAL ARM DATA				ARM ATTACHMENT DATA				LUMINAIRE ARM DATA						
POLE SERIES	POLE TYPE	BASE TYPE	SIGNAL ARM SPAN (FT)	BASE DIA. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	SQUARE OR THK. (IN)	BOLT CIRCLE "X" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	HOOK "H" (IN)	THREAD LENGTH "U" (IN)	FIXED END DIA. (IN)	FREE END DIA. (IN)	GA. OR THK. (IN)	LENGTH (FT)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	PLATE THICKNESS "E" (IN)	GUSSET THICKNESS "F" (IN)	BOLT SIZE "G" (IN)	
M0	CL	A	15	6 THRU 15	12.00	25.00	7	17.00	16.00	1.25	1.75	1.50	73.00	6.00	7.50	7.00	4.90	7	15.00	12.75	11.00	7.25	9.00	1.25	0.250	1.25" X 2.75"
M0	CL	A	16	10	12.00	25.00	7	17.00	16.00	1.25	1.75	1.50	73.00	6.00	7.50	8.00	5.20	7	16.00	12.75	11.00	7.25	9.00	1.25	0.250	1.25" X 2.75"
M0	CL	A	25	6 THRU 15	12.50	25.00	5	17.50	16.50	1.25	1.75	1.50	73.00	6.00	7.50	9.00	5.50	7	25.00	13.00	11.50	7.75	9.25	1.25	0.250	1.25" X 2.75"
M0	CL	A	30	6 THRU 15	13.00	25.00	3	18.00	18.00	1.50	2.00	1.75	88.00	6.00	8.00	10.00	5.80	7	30.00	15.75	14.25	9.75	11.25	1.50	0.250	1.50" X 3.50"
M0	CL	A	35	6 THRU 15	13.00	25.00	3	18.00	18.00	1.50	2.00	1.75	88.00	6.00	8.00	11.00	6.10	7	35.00	15.75	14.25	9.75	11.25	1.50	0.250	1.50" X 3.50"
M0	CL	A	40	6 THRU 15	14.50	25.00	0.250	19.50	19.50	1.50	2.00	1.75	88.00	6.00	8.00	12.50	6.90	5	40.00	17.00	15.50	11.00	12.50	1.75	0.250	1.50" X 3.75"
M0	CL	A	42	15	15.00	25.00	0.250	20.50	20.50	1.50	2.25	2.00	115.00	6.00	8.50	12.50	6.20	5	42.00	17.25	15.75	11.25	12.75	1.75	0.250	1.50" X 3.75"
M0	CL	A	50	6 THRU 15	16.00	25.00	0.250	22.00	22.00	1.75	2.25	2.00	115.00	6.00	8.50	12.50	5.50	3	50.00	17.50	16.00	11.50	13.00	2.00	0.250	1.50" X 4.25"
M0	CL	A	55	6 THRU 15	17.00	25.00	0.250	23.00	23.00	1.75	2.25	2.00	115.00	6.00	8.50	12.00	6.40	7	40.00	SEE DETAIL 1:1				1.50" X 4.25"		

SEE TABLE 10

TABLE 5: SINGLE MAST ARM TRAFFIC STRUCTURE DATA (TYPE "F" BASE ARE GROUND MOUNTED)

DESIGNATION KEY			POLE TUBE DATA			BASE PLATE DATA			ANCHOR BOLT DATA				SIGNAL ARM DATA				ARM ATTACHMENT DATA					LUMINAIRE ARM DATA				
POLE SERIES	POLE TYPE	BASE TYPE	SIGNAL ARM SPAN (FT)	BASE DIA. (IN)	LENGTH (FT)	GAUGE THK. (IN)	SQUARE THK. (IN)	BOLT CIRCLE DIA. (IN)	THK. (IN)	HOLE DIA. (IN)	LENGTH (IN)	HOOK DIA. (IN)	THREAD LENGTH (IN)	FIXED END DIA. (IN)	FREE END DIA. (IN)	GA. THK. (IN)	LENGTH (FT)	"A" DIA. (IN)	"B" DIA. (IN)	"C" DIA. (IN)	"D" DIA. (IN)	PLATE THICKNESS (IN)	GUSSET THICKNESS (IN)	BOLT SIZE (IN)		
M0	CL	F	15	6 THRU 15	12.00	27.00	7	17.00	16.00	1.25	1.75	1.50	73.00	6.00	7.50	7.00	4.90	7	15.00	12.75	11.00	7.25	9.00	1.25	0.250	1.25" X 2.75"
M0	CL	F	20	6 THRU 15	12.00	27.00	7	17.00	16.00	1.25	1.75	1.50	73.00	6.00	7.50	8.00	5.20	7	20.00	12.75	11.00	7.25	9.00	1.25	0.250	1.25" X 2.75"
M0	CL	F	25	6 THRU 15	12.50	27.00	5	17.50	16.50	1.25	1.75	1.50	73.00	6.00	7.50	9.00	5.50	7	25.00	13.00	11.50	7.75	9.25	1.25	0.250	1.25" X 2.75"
M0	CL	F	30	6 THRU 15	13.00	27.00	3	18.00	18.00	1.50	2.00	1.75	88.00	6.00	8.00	10.00	5.80	7	30.00	15.75	14.25	9.75	11.25	1.50	0.250	1.50" X 3.50"
M0	CL	F	35	6 THRU 15	13.00	27.00	3	18.00	18.00	1.50	2.00	1.75	88.00	6.00	8.00	11.00	6.10	7	35.00	15.75	14.25	9.75	11.25	1.50	0.250	1.50" X 3.50"
M0	CL	F	40	6 THRU 15	14.50	27.00	0.250	19.50	19.50	1.50	2.00	1.75	88.00	6.00	8.00	12.50	6.90	5	40.00	17.00	15.50	11.00	12.50	1.75	0.250	1.50" X 3.75"
M0	CL	F	45	6 THRU 15	15.00	27.00	0.250	20.50	20.50	1.50	2.25	2.00	115.00	6.00	8.50	12.50	5.20	5	45.00	17.25	15.75	11.25	12.75	1.75	0.250	1.50" X 3.75"
M0	CL	F	50	6 THRU 15	16.00	27.00	0.250	22.00	22.00	1.75	2.25	2.00	115.00	6.00	8.50	12.50	5.90	3	50.00	17.50	16.00	11.50	13.00	2.00	0.250	1.50" X 4.25"
M0	CL	F	55	6 THRU 15	17.00	27.00	0.250	23.00	23.00	1.75	2.25	2.00	115.00	6.00	8.50	13.74	11.28	0.250	17.58	17.58	SEE DETAIL 1:1				1.50" X 4.25"	

SEE TABLE 10

Qty-1 MO-CL-A-42-15-GV-HH-LAB
Qty-1 MO-CL-A-16-10-GV-HH-LAB



Show Drawing Approved 10/13/13



2-26-13

STATE OF MISSOURI
TRAFFIC SIGNAL STRUCTURES

VALMONT INDUSTRIES, INC. RESERVES
THE RIGHT TO INSTALL VARIOUS
ENGINEERING MATERIALS AND
ADAPTATIONS TO FACILITIES THE
MANUFACTURING PROCESS.

valmont
VALLEY, NE 58064
(402) 399-2201

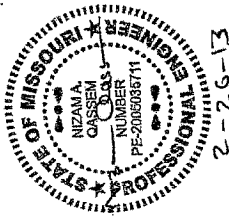
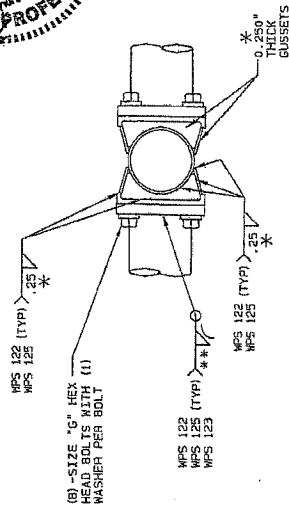
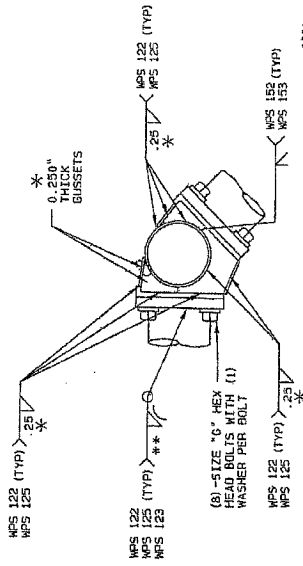
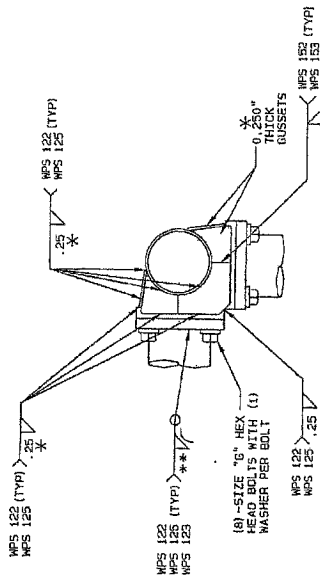
PAGE NUMBER 3 OF 7
Drawing number
DB00408
H

TWIN MAST ARM GUIDELINE:

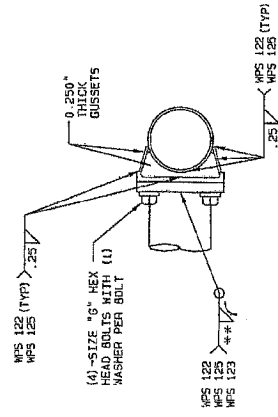
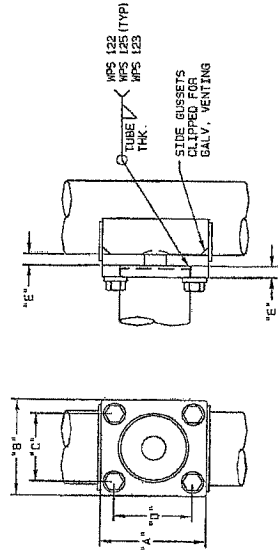
THE GUSSET LAYOUT WILL VARY BASED ON THE POLE DIAMETER AT MAST ARM ATTACHMENT HEIGHT AND THE SIMPLEX SIZE.

NOTES:

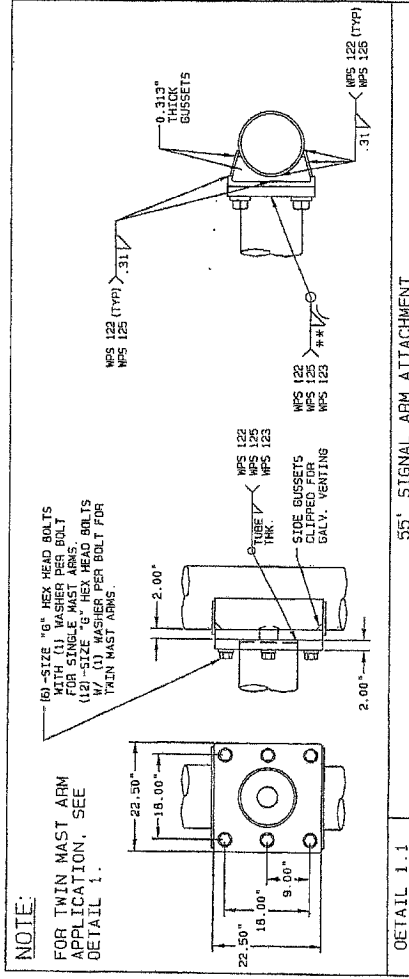
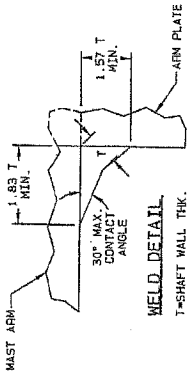
- * 0.313" WELD AND MATERIAL ON POLE GUSSETS FOR 55' MAST ARMS.
- ** SEE WELD DETAIL.



Show Drawing Approved 10/18/13



TYPICAL 4 BOLT APPLICATION
(UP TO 54'-0")



55' SIGNAL ARM ATTACHMENT

DETAIL 1.1

SIGNAL ARM ATTACHMENT

DETAIL 1

STATE OF MISSOURI
TRAFFIC SIGNAL STRUCTURES

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO MAKE ANY CHANGES WITHOUT NOTICE. ENGINEER APPROVED MATERIAL LISTING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.



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FILE NUMBER
DRAWING NUMBER

D800408

H

ARM SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE OR THICK	RISE OR HEIGHT "H"
4	2.38	2.38	0.154*	3'-6"
5	2.38	2.38	0.154*	3'-6"
6	2.38	2.38	0.154*	3'-6"
8	3.93	2.38	11	3'-6"
12	4.17	2.38	11	3'-6"
15	4.60	2.38	11	3'-6"

