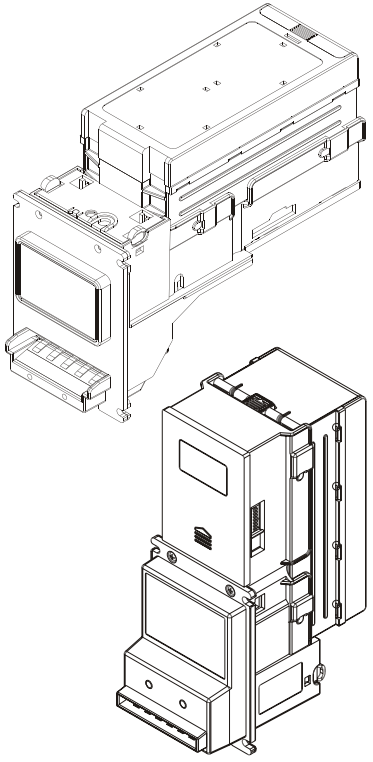
Bill Validator

A7 & V7 Series
Installation Guide

- 4 - Way Acceptance
- Low Maintenance
- Easy Installation
- Re - Programmable Flash ROM
- Auto Self -Adjusting Sensor System



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Vol. 7.0 Part Number : H4459F

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(1) A7/V7 Bill Validator Specifications

Acceptance Rate

96% or greater

Bill insertion

4-way Acceptance

Acceptance Speed

Approx. 3 seconds, Pulse Interface
(including bill stacking)

Interfaces

S.T. D. Pulse
M.D.B. (Multi-Drop Bus)
NISR
ICT Protocol

Bill box Capacity

Approx.100 bills (80~120) *3MB-SBX10002*
200 bills (200~300) *3MB-SBX05005*
400 bills (350~450) *3MB-SBX06005*
800 bills (750~850) *3MB-SBX09006*

Weight

Approx. 2kg (shipping)

Power Sources

12V DC, 3Amp
24V AC, 2Amp
34V DC (24V~45V),1.5Amp
117V AC, 0.2Amp

Power Consumption

Max 50 watts

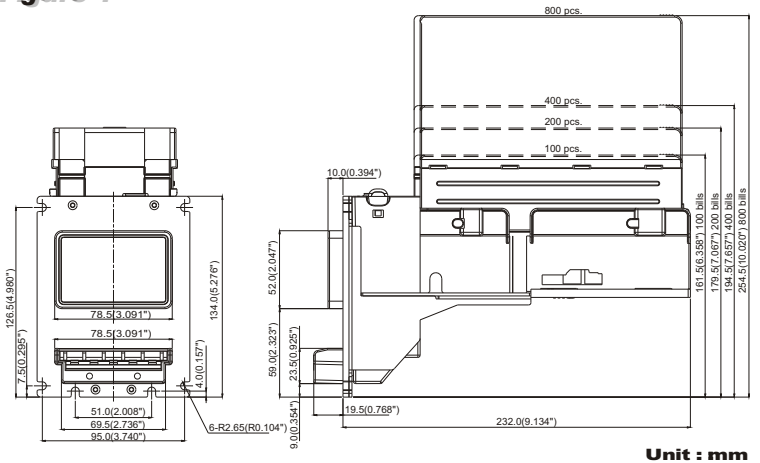
Environment Range

Operating Temperature 0°C~55°C
Storage Temperature -30°C~70°C
Humidity：30%~85% RH (no condensation)

(2) Bill Validator Dimensions

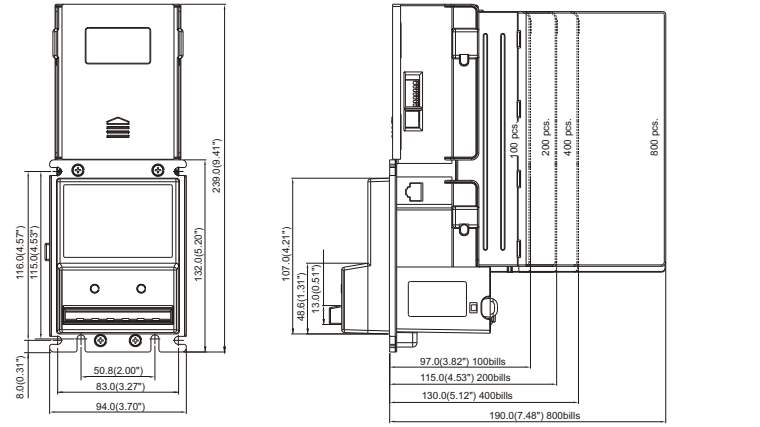
1. Horizontal (Figure 1) see page 3.
2. Vertical (Figure 2) see page 3.

▶ ***Figure 1***



Unit : mm
( ) : in

▶ ***Figure 2***



Unit : mm
( ) : in

(3) LED Display

The two LED lights located at the front of the unit will show the operational status of the bill validator. The LED lights will flash ON and OFF (in 500ms intervals) when the unit is ready to accept bills. The LED lights will be OFF if the unit is disabled or out of service, in which case the unit will not accept any bills.

The bill validator can only accept one bill at a time. The LED lights will be OFF and will not accept another bill while a bill is being validated in the unit. The LED lights will start to flash normally when the bill validator is ready to accept the next bill.

(4) LED Status

FLASHES	STATUS
1	bill jammed
2	disabled from system
3	sensor problem
4	reserved
5	bill box is removed
6	bill box is full of money
LED ON	POWER ON
LED OFF	POWER OFF

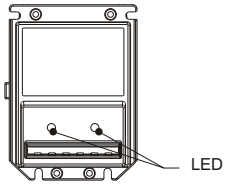
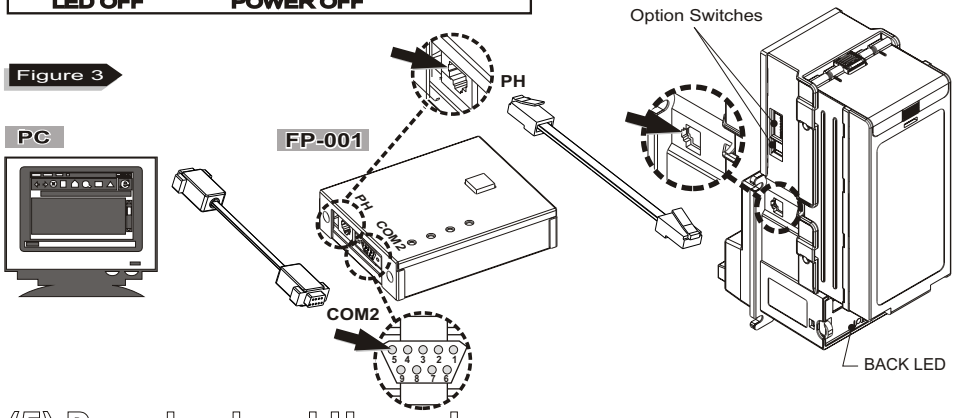


Figure 3



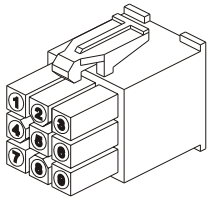
(5) Download and Upgrade

In addition to the 30-pin connector, there is also an 8-pin RJ-45 connector on the side of the bill validator designed for the purpose of downloading programs and updating validation software. The connector will be kept open under normal operation of the bill validator. It will only be used when a new software or program need to be downloaded into the flash ROM.(Figure 3)

(6) 6-1
A7 Pin-out Assignments (S.T.D. Pulse for 12V DC)

For the *12V DC* version of the A7 bill validator, the harness(*part no. WEL-M007*, see page.18 for pin-out information) has a dual-in-line 30-pin peripheral connector at one end and a 9-pin mating connector at the other end. Connect the 30-pin connector to the side of the bill validator and the 9-pin mating connector to the 12V DC power harness (*part no.CU-961-1*, see page.13 for pin-out information).

◈ **9-pin mating connector pin-out assignments:**



Pin 1 INHIBIT +	**Pin 6 Reserved**
Pin 2 INHIBIT -	**Pin 7 CREDIT_RELAY(N.O.)**
Pin 3 Reserved	**Pin 8 CREDIT_RELAY(Common)**
Pin 4 Reserved	**Pin 9 GND (Power)**
Pin 5 12V DC (Power)	

◈ **Dual-in-line 30-pin peripheral connector (A7, 12V DC) pin-out assignments:**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Pin 1 - CREDIT_RELAY(Common)	Pin 16 - CREDIT_RELAY(N.O.)
Pin 2 - 12VDC (Power)	Pin 17 - Reserved
Pin 3 - ENABLE -	Pin 18 - ENABLE +
Pin 4 - Reserved	Pin 19 - KEY
Pin 5 - INHIBIT +	Pin 20 - INHIBIT -
Pin 6 - KEY	Pin 21 - Reserved
Pin 7 - Reserved	Pin 22 - Reserved
Pin 8 - Reserved	Pin 23 - Reserved
Pin 9 - Reserved	Pin 24 - Reserved
Pin 10 - GND (Power)	Pin 25 - Reserved
Pin 11 - Reserved	Pin 26 - Reserved
Pin 12 - Reserved	Pin 27 - Reserved
Pin 13 - Reserved	Pin 28 - Reserved
Pin 14 - Reserved	Pin 29 - Reserved
Pin 15 - Reserved	Pin 30 - Reserved

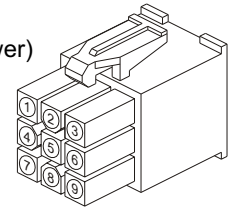
◈ CAUTION: Turn off the power before connecting or disconnecting the bill validator.

(6) 6-2
A7 Pin-out Assignments (S.T.D Pulse for 117V AC)

For the 117V AC version of the A7 bill validator, connect the 30-pin peripheral connector on one end of the harness (***part no. WEL-M008***, see page.19 for pin-out information) to the side of the unit and the 9-pin mating connector to the 117V AC power harness (***part no. WEL-M010 and WEL-M012***, see page.20, 21 for pin-out information).

◈ 9-pin mating connector pin-out assignments:

Pin 1 NEUTRAL INHIBIT
Pin 2 NEUTRAL ENABLE
Pin 3 HOT ENABLE
Pin 4 117VAC HOT (Power)
Pin 5 **Earth - Ground**
Pin 6 117VAC NEUTRAL(Power)
Pin 7 CREDIT_RELAY(N.O.)
Pin 8 CREDIT_RELAY (Common)
Pin 9 Reserved



IMPORTANT: On 117V AC units, the Earth Ground must be located inside the machine.

◈ Dual-in-line 30-pin peripheral connector (A7, 117V AC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Pin 1 - CREDIT_ RELAY(Common)
Pin 2 - Reserved
Pin 3 - NEUTRAL ENABLE
Pin 4 - 117VAC NEUTRAL(Power)
Pin 5 - NEUTRAL INHIBIT
Pin 6 - KEY
Pin 7 - Reserved
Pin 8 - Reserved
Pin 9 - Reserved
Pin 10 - Reserved
Pin 11 - Reserved
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - Reserved
Pin 15 - Reserved
Pin 16 - CREDIT_RELAY(N.O.)
Pin 17 - Reserved
Pin 18 - HOT ENABLE
Pin 19 - KEY
Pin 20 - 117VAC HOT(Power)
Pin 21 - EARTH GROUND
Pin 22 - Reserved
Pin 23 - Reserved
Pin 24 - Reserved
Pin 25 - Reserved
Pin 26 - Reserved
Pin 27 - Reserved
Pin 28 - Reserved
Pin 29 - Reserved
Pin 30 - Reserved

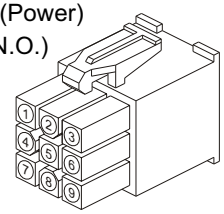
◈ **CAUTION:** Turn off the power before connecting or disconnecting the bill validator.

(6) 6-3
A7 Pin-out Assignments (NISR for 117V AC)

For the 117V AC version of the A7 bill validator with NISR interface, the harness (***part no. WEL-M013***, see page.22 for pin-out information) has a dual-in-line 30-pin peripheral connector that connects to the side of the B.A , a 9-pin mating connector for connecting to the 117V AC power harness , and a 18-pin interface connector see next page for pin-out information to connect to the controller.

◈ 9-pin mating connector pin-out assignments:

Pin 1 Reserved
Pin 2 Reserved
Pin 3 Reserved
Pin 4 117VAC HOT (Power)
Pin 5 Reserved
Pin 6 117VAC NEUTRAL(Power)
Pin 7 CREDIT_RELAY (N.O.)
Pin 8 CREDIT_RELAY (Common)
Pin 9 Reserved



◈ Dual-in-line 30-pin peripheral connector (A7, 117V AC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Pin 1 - CREDIT_RELAY (Common)
Pin 2 - Reserved
Pin 3 - Reserved
Pin 4 - 117V AC NEUTRAL (Power)
Pin 5 - Reserved
Pin 6 - Reserved
Pin 7 - Reserved
Pin 8 - /INTERRUPT
Pin 9 - Reserved
Pin 10 - GND
Pin 11 - /DATA
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - Reserved
Pin 15 - Reserved
Pin 16 - CREDIT_RELAY (N.O.)
Pin 17 - Reserved
Pin 18 - Reserved
Pin 19 - Reserved
Pin 20 - 117V AC HOT (Power)
Pin 21 - Reserved
Pin 22 - /OUT_OF_SERVICE
Pin 23 - Reserved
Pin 24 - /ACCEPT_ENABLE
Pin 25 - Reserved
Pin 26 - /SEND
Pin 27 - Reserved
Pin 28 - Reserved
Pin 29 - Reserved
Pin 30 - Reserved

◈ **CAUTION:** Turn off the power before connecting or disconnecting the bill validator.

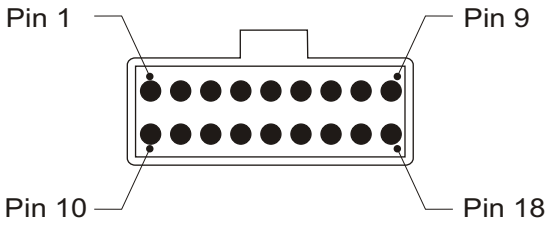
NISR CONNECTOR

INTERFACE CONNECTOR :

◈ 18-pin mating connector pin-out assignments:

Pin 1	/ $ 1 CRETID	Pin 10	/OUT-OF-SERVICE
Pin 2	INTERRUPT	Pin 11	/DEBUG DATA
Pin 3	/ $ 5 CRETID	Pin 12	/ACCEPT ENABLE
Pin 4	GROUND	Pin 13	/$ 2 CRETID
Pin 5	/DATA	Pin 14	/SEND
Pin 6	ESCROW . High .	Pin 15	$ 1 ENABLE , Low
Pin 7	$ 5 ENABLE , High	Pin 16	$ 2 ENABLE , Low
Pin 8	$ 2 ENABLE , High	Pin 17	$ 5 ENABLE , Low
Pin 9	$ 1 ENABLE , High	Pin 18	ESCROW , Low

NISR PIN LOCATIONS

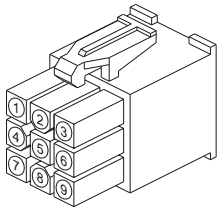


(7) 7-1
V7 Pin-out Assignments (S.T.D. Pulse for 12V DC)

For the ***12V DC*** version of the V7 bill validator, the harness (***part no. WEL-V701***, see page.14 for pin-out information) has a dual-in-line 30-pin peripheral connector at one end and a 9-pin mating connector at the other end. Connect the 30-pin connector to the side of the bill validator and the 9-pin mating connector to the 12V DC power harness (***part no.CU-961-1***, see page.13 for pin-out information).

◈ 9-pin mating connector pin-out assignments:

Pin 1	INHIBIT +	Pin 6	Reserved
Pin 2	INHIBIT -	Pin 7	CREDIT_RELAY(N.O.)
Pin 3	Reserved	Pin 8	CREDIT_RELAY (Common)
Pin 4	Reserved		
Pin 5	12V DC (Power)	Pin 9	GND (Power)



◈ Dual-in-line 30-pin peripheral connector (V7, 12V DC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

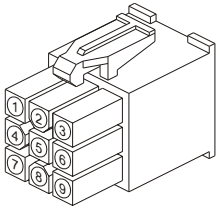
Pin 1 - CREDIT_RELAY(Common)	Pin 16 - Reserved
Pin 2 - CREDIT_RELAY(N.O.)	Pin 17 - Reserved
Pin 3 - 12VDC (Power)	Pin 18 - INHIBIT -
Pin 4 - INHIBIT +	Pin 19 - Reserved
Pin 5 - KEY	Pin 20 - GND (Power)
Pin 6 - Reserved	Pin 21 - KEY
Pin 7 - Reserved	Pin 22 - Reserved
Pin 8 - Reserved	Pin 23 - Reserved
Pin 9 - Reserved	Pin 24 - Reserved
Pin 10 - Reserved	Pin 25 - Reserved
Pin 11 - Reserved	Pin 26 - Reserved
Pin 12 - Reserved	Pin 27 - Reserved
Pin 13 - Reserved	Pin 28 - Reserved
Pin 14 - Reserved	Pin 29 - Reserved
Pin 15 - Reserved	Pin 30 - Reserved

◈ **CAUTION:** Turn off the power before connecting or disconnecting the bill validator.

(7) 7-2
V7 Pin-out Assignments (S.T.D Pulse for 24V AC)

For the 24V AC version of the V7 bill validator, the harness (***part no.WEL-V703***, see page.16 for pin-out information) has a dual-in-line 30-pin peripheral connector at one end and a 9-pin mating connector at the other end. Connect the 30-pin connector to the side of the bill validator and the 9-pin mating connector to the 24V AC power harness (***part no.WEL-V702***, see page.15 for pin-out information).

◈ 9-pin mating connector pin-out assignments:



Pin 1 Reserved
Pin 2 INHIBIT +
Pin 3 Reserved
Pin 4 CREDIT_RELAY(N.O.)
Pin 5 CREDIT_RELAY(Common)
INHIBIT -
Pin 6 Reserved
Pin 7 24V AC (RET)
Pin 8 24V AC (HOT)
Pin9 Reserved

◈ Dual-in-line 30-pin peripheral connector (V7, 24V AC) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

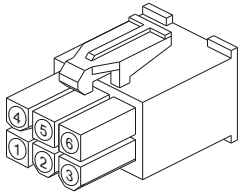
Pin 1 - CREDIT_RELAY(Common)
Pin 2 - CREDIT_RELAY(N.O.)
Pin 3 - Reserved
Pin 4 - INHIBIT +
Pin 5 - Reserved
Pin 6 - Reserved
Pin 7 - Reserved
Pin 8 - Reserved
Pin 9 - Reserved
Pin 10 - Reserved
Pin 11 - Reserved
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - Reserved
Pin 15 - Reserved
Pin 16 - 24V AC(RET)
Pin 17 - Reserved
Pin 18 - INHIBIT -
Pin 19 - Reserved
Pin 20 - Reserved
Pin 21 - Reserved
Pin 22 - Reserved
Pin 23 - 24V AC(HOT)
Pin 24 - Reserved
Pin 25 - Reserved
Pin 26 - Reserved
Pin 27 - Reserved
Pin 28 - Reserved
Pin 29 - Reserved
Pin 30 - Reserved

◈ **CAUTION:** Turn off the power before connecting or disconnecting the bill validator.

(7) 7-3
V7 Pin-out Assignments (M.D.B. System for 34V DC)

For the MDB interface V7 bill validator, connect the 30-pin peripheral connector on one end of the harness (***part no. WEL-M006***, see page.17 for pin-out information) to the side of the unit and the standard 6-pin MDB connector to the power/interface connector.

◈ The standard 6-pin MDB connector pin-out assignments:



Pin 1 - 34 VDC
Pin 2 - 34 VDC Power Return
Pin 3 - N/C
Pin 4 - Master Receive
Pin 5 - Master Transmit
Pin 6 - Communications Common

◈ Dual-in-line 30-pin peripheral connector (V7, MDB) pin-out assignments:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

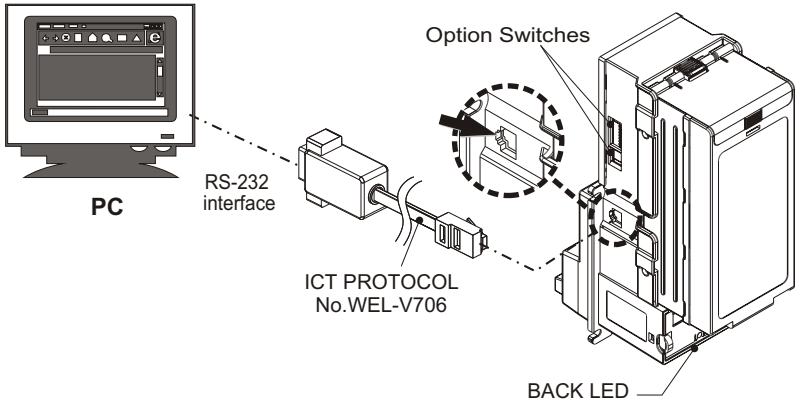
Pin 1 - Reserved
Pin 2 - Reserved.
Pin 3 - Reserved
Pin 4 - Reserved
Pin 5 - KEY
Pin 6 - MDB_MASTER_RXD
Pin 7 - Reserved
Pin 8 - Reserved
Pin 9 - Reserved
Pin 10 - Reserved
Pin 11 - Reserved
Pin 12 - Reserved
Pin 13 - Reserved
Pin 14 - MDB_MASTER_TXD
Pin 15 - Reserved
Pin 16 - 34VDC_RETURN
Pin 17 - Reserved
Pin 18 - Reserved
Pin 19 - Reserved
Pin 20 - Reserved
Pin 21 - KEY
Pin 22 - Reserved
Pin 23 - +34VDC
Pin 24 - Reserved
Pin 25 - Reserved
Pin 26 - Reserved
Pin 27 - Reserved
Pin 28 - MDB_GND
Pin 29 - Reserved
Pin 30 - Reserved

◈ **CAUTION:** Turn off the power before connecting or disconnecting the bill validator.

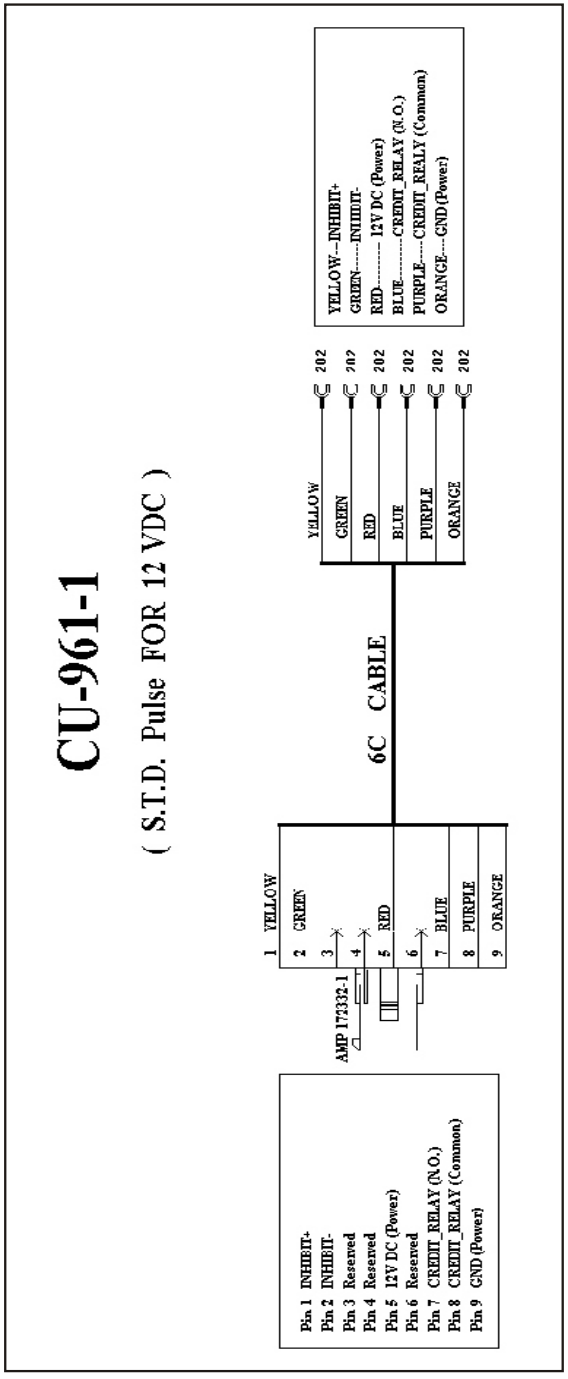
(8) A7 Pin-out Assignments (I.C.T. Protocol)

The cable for ICT Protocol (***part no. WEL-V706***, see page. 25 for pin-out information) connector on one end and a 9-pin PC connector on the other end. To connect, plug the RJ-45 connector into the RJ-45 socket on the side of the BA and connect the 9-pin PC connector to the COM port of a PC (Figure 4).

Figure 4

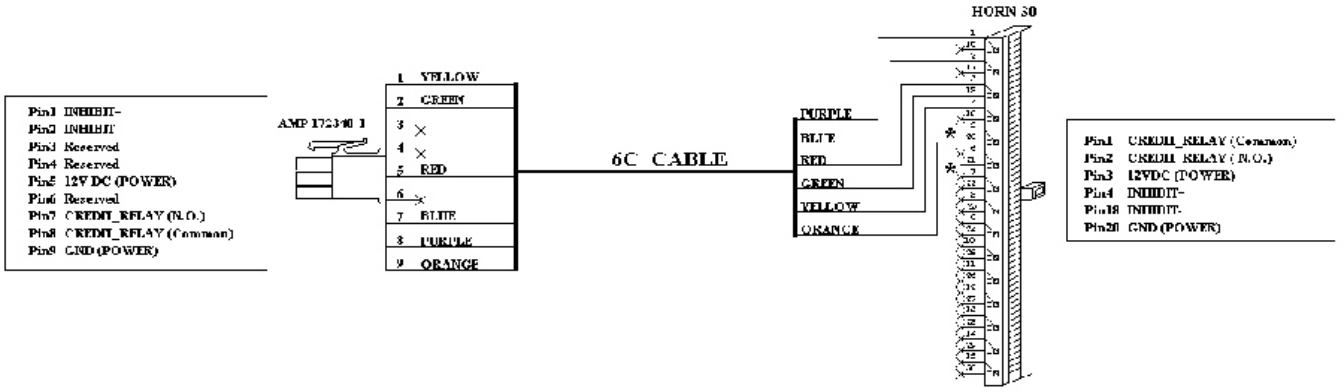


(9) Cable



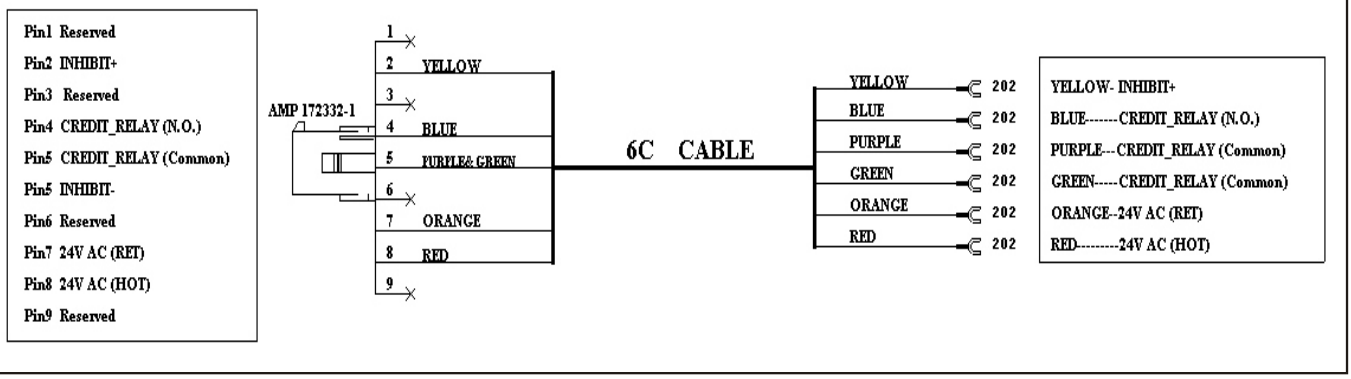
WEL-V701

(S.T.D. Pulse FOR 12 VDC)



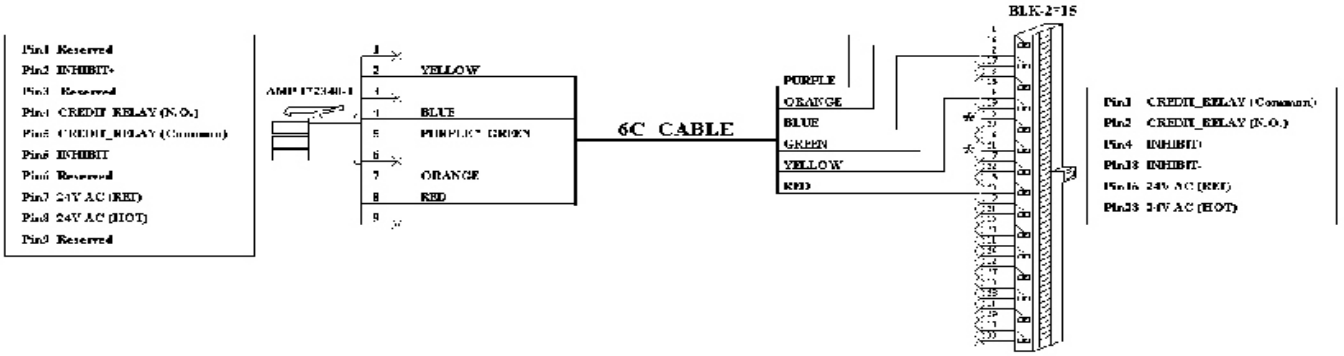
WEL-V702

(S.T.D pulse FOR 24 VAC)



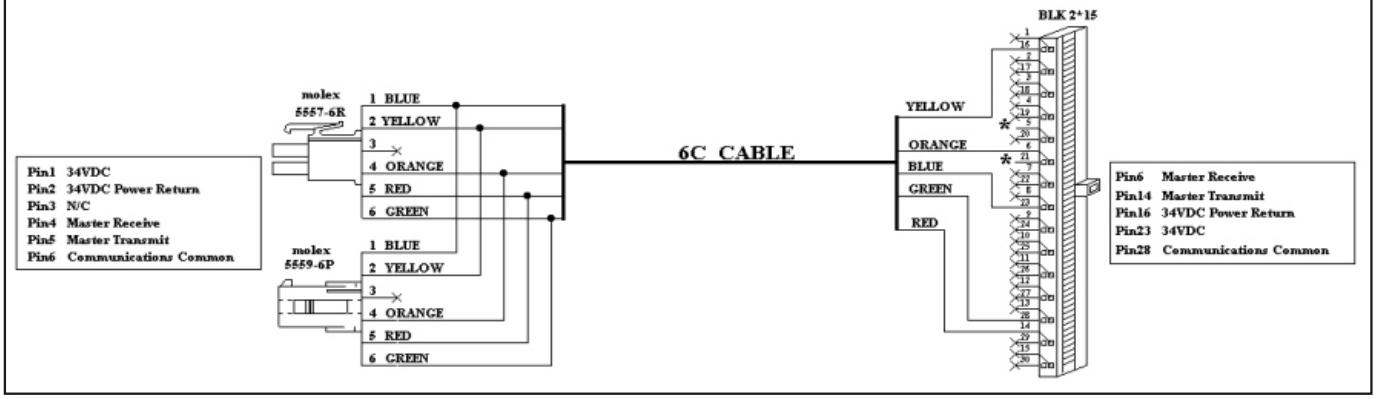
WEL-V703

(S.T.D pulse FOR 24 VAC)



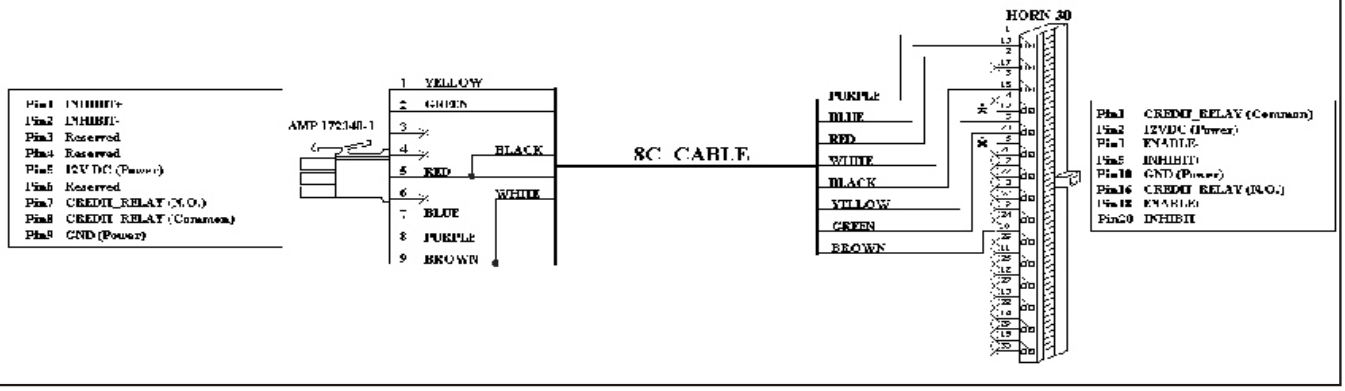
WEL-M006

(M.D.B. System for 34V DC)



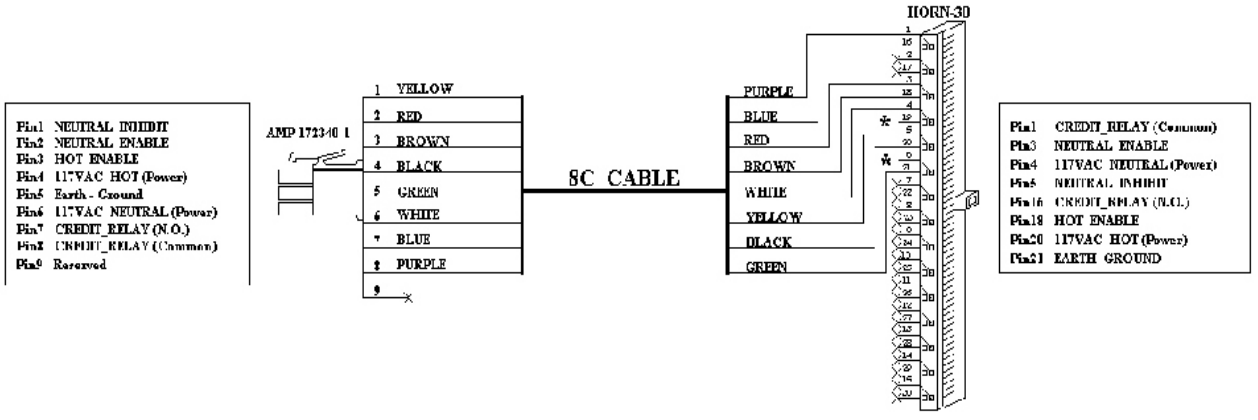
WEL-M007

(S.T.D. Pulse for +12VDC)



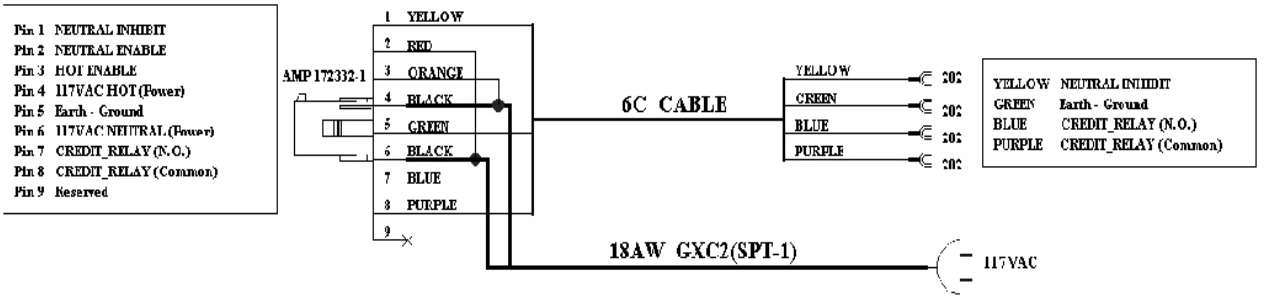
WEL-M008

(S.T.D. Pulse for 117VAC)



WEL-M010

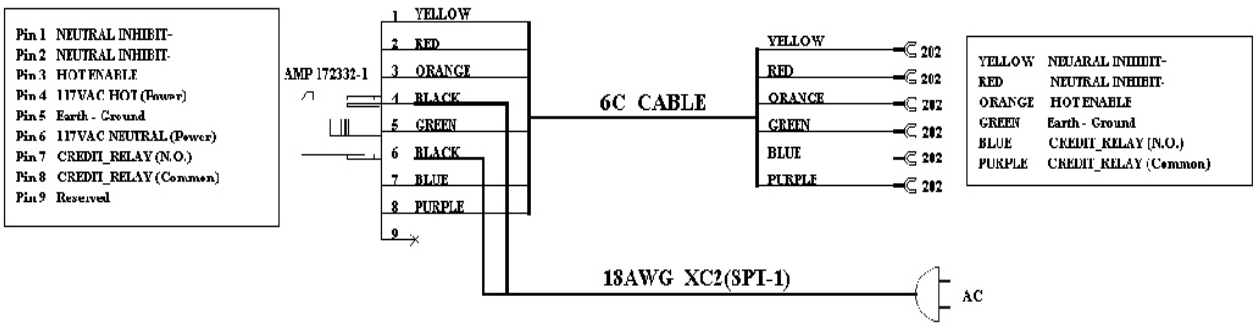
(S.T.D pulse FOR 117 VAC)



(Option)

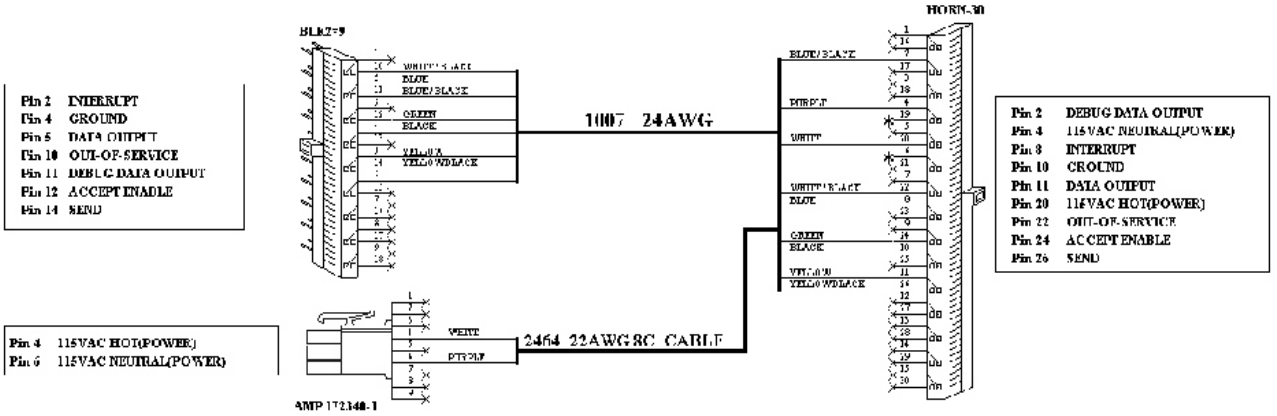
WEL-M012

(S.T.D pulse FOR 117 VAC)



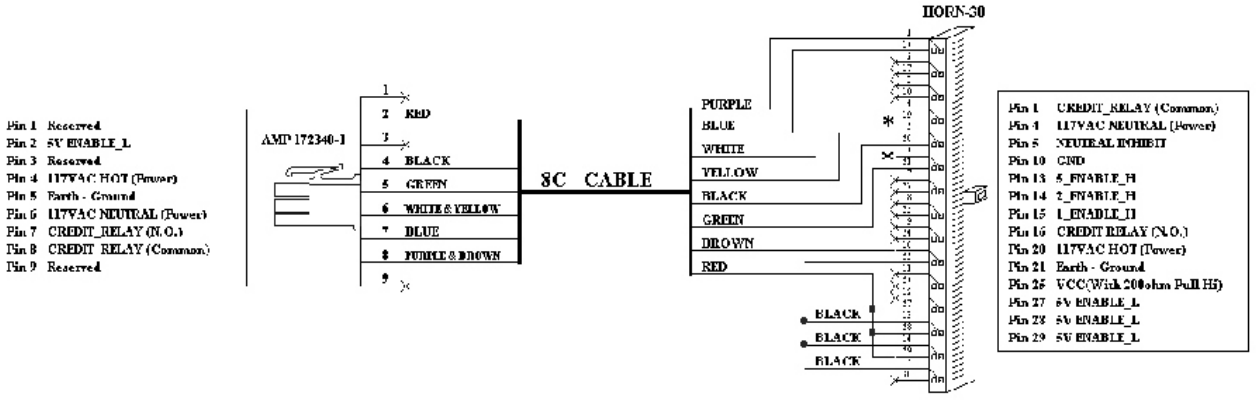
WEL-M013

(NISR FOR 110VAC)



WEL-M017

(S.T.D pulse + 5V ENABLE For 117VAC)

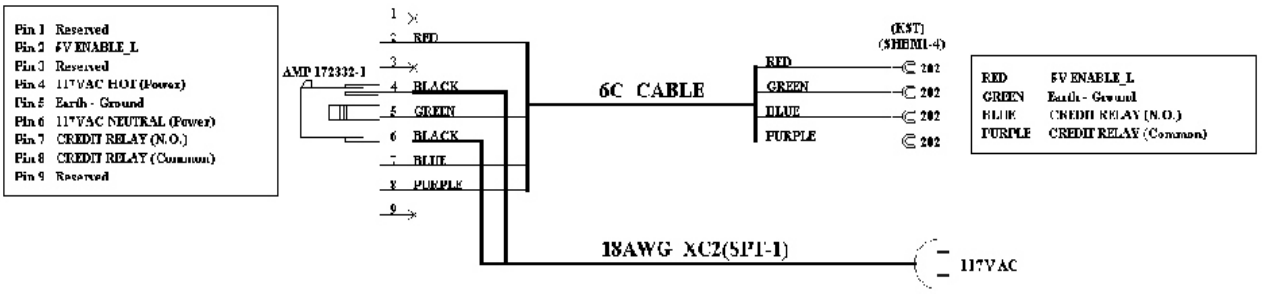


(Must use WEL-M018)

(Option)

WEL-M018

(S.T.D pulse + 5V ENABLE For 117VAC)



(Option)

WEL-V706

(I.C.T. Protocol)