



# Certificate of Compliance

Certificate: 1227801

Master Contract: 169663 (LR 40304)

Project: 1227801

Date Issued: December 14, 2001

Issued to: **Fujitsu Component Ltd.**  
**3-5, Higashigotanda, 2-Chome**  
**Shinagawa-Ku, Tokyo, 141-8630**  
**JAPAN**  
Attention: Mr. Shutarou Tajima

*The products listed below are eligible to bear the CSA Mark shown  
with adjacent indicator ▲*



Issued by:

  
G. Lippa, C.E.T.

Authorized by:   
Brian Rossborough,  
Operations Manager

## PRODUCTS

CLASS 3231 52 - SWITCHES - Component - Automatic - Industrial Control

Relay, Type FTR-K1 or K1 with suffixes open type, with dust cover, printed circuit board mounting, single - pole, double -throw NO and NC, single - pole, single -throw NO, coil 5 through 48 V dc, ratings

Type FTR-K1CK( )W (form C contact)

16A, 24Vdc / 277Vac Res.

1HP, 277Vac

1/2HP, 125Vac

1/8HP, 125Vac (30000 cycle)

Pilot duty code B300

Type FTR-K1AK( )T (form A contact)

16A, 24Vdc / 277Vac Res.

1HP, 277Vac

1/2HP, 125Vac

Pilot duty code A300

TV-5, 120Vac

Type FTR-K1AL( )W-LB (form A contact)

10A, 277Vac Res.

1/2HP, 277Vac

1/3HP, 125Vac



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Pilot duty code B300

Note: Open type devices are Certified as components only for use in other Certified equipment where the suitability of the combination is to be determined by the CSA International.

**APPLICABLE REQUIREMENTS**

The product, as described in this report, complies with:

CSA Standard C22.2 No 1 - Audio, Video, and similar Electronic Equipment  
CSA Standard C22.2 No 14 - Industrial Control Equipment  
Component Acceptance Service Notice No. 7



## *Supplement to Certificate of Compliance*

**Certificate:** 1227801

**Master Contract:** 169663 (LR 40304)

*The products listed, including the latest revision described below,  
are eligible to be marked in accordance with the referenced Certificate.*

### **Product Certification History**

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| <b>Project</b> | <b>Date</b>   | <b>Description</b>      |
|----------------|---------------|-------------------------|
| 1227801        | Dec. 14, 2001 | Original Certification. |



# Descriptive and Test Report

MASTER CONTRACT: 169663 (LR 40304)

REPORT: 1227801

PROJECT: 1227801

**Edition 1:** December 14, 2001 ; Project 1227801 - Toronto  
Issued by G. Lippa, C.E.T.

**Contents:** Certificate of Compliance - Pages 1 to 2  
Supplement to Certificate of Compliance - Page 1  
Description and Tests - Pages 1 to 12  
Illustrations - Ills. 1 thru 3  
Figures - Fig 1

## PRODUCTS

CLASS 3231 52 - SWITCHES - Component - Automatic - Industrial Control

Relay, Type FTR-K1 or K1 with suffixes open type, with dust cover printed circuit board mounting single -pole, double -throw NO and NC, single - pole, single -throw NO , coil 5 through 48 V dc, ratings

Type FTR-K1CK( )W (form C contact)

16A, 24Vdc / 277Vac Res.

1HP, 277Vac

1/2HP, 125Vac

1/8HP, 125Vac (30000 cycle)

Pilot duty code B300

Type FTR-K1AK( )T (form A contact)

16A, 24Vdc / 277Vac Res.

1HP, 277Vac

1/2HP, 125Vac

Pilot duty code A300

TV-5, 120Vac

Type FTR-K1AL( )W-LB (form A contact)

10A, 277Vac Res.

1/2HP, 277Vac

1/3HP, 125Vac

Pilot duty code B300

Note: Open type devices are Certified as components only for use in other Certified equipment where the suitability of the combination is to be determined by the CSA International.

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### APPLICABLE REQUIREMENTS

The product, as described in this report, complies with:

CSA Standard C22.2 No 0-M91 - General Requirements - Canadian Electrical Code, Part II  
CSA Standard C22.2 No 1 - 98 - Audio, Video, and similar Electronic Equipment  
CSA Standard C22.2 No 14 - 95 - Industrial Control Equipment  
Component Acceptance Service Notice No. 7

### MARKINGS

The submittor's name and/or file number "LR40304", or tradename(F&T or F.T) type designation, and the CSA Component Acceptance Mark are ink-stamped on dust cover of each relay. The complete electrical ratings are marked on the smallest packing unit or smallest shipping container.

Refer to III. 1 for details.

### ALTERATIONS

1. Markings are as described in Markings above.

### FACTORY TESTS

Not applicable.

### DESCRIPTION

#### General:

#### PRODUCT COVERED:

Type K1, with or without prefix FTR-, followed by A or C, followed by K or L followed by 005 through 048, followed by W or T, followed by none or -LB, may or may not be followed by -01 through -99.

#### GENERAL CHARACTER and USE:

These devices are single-pole double-throw magnetically operated switches with DC operating coil and with normally open and normally closed contacts. Some of these devices have single-pole single-throw contacts arrangement with normally open contact. These devices are provided with terminals for direct printed circuit mounting.

They are intended for use in industrial control equipment or temperature indicating and regulating equipment.

Relay type FTR-K1 is constructed of Class 130(B) and Class 155(F) Insulation Materials.

Electrical Spacings: Clearance: 6.4 mm, Creepage: 9.5 mm in compliance with Group A Table 6 of Std. C22.2 No. 14 and Group A Table 3 of Std. C22.2 No.24.

No of Poles/Positions: 1 pole, 2 position.

#### Nomenclature:

| Part No. | <u>FTR - K1</u> | <u>A</u> | <u>L</u> | <u>005</u> | <u>W</u> | <u>-LB</u> |
|----------|-----------------|----------|----------|------------|----------|------------|
|          | I               | II       | III      | IV         | V        | VI         |

I. Indicates type number, with or without prefix FTR-.

II. Indicates contact configuration.

C - 1 Form C

A - 1 Form A

- III. Indicates coil sensibility/enclosure.  
K - General / Flux free type.  
L - High Sensitive / Flux free type.
- IV. Indicates coil rated voltage.  
005 through 048 - 5 through 48 VDC
- V. Indicates contact material or TV Type  
W - Silver-tin oxide and Copper base overlaid with silver-tin oxide.  
T - TV rated (TV-5), only 1 form A in addition to general coil sensibility
- VI. Indicates contact rated / terminal pitch / Temperature range  
None - 16A / 5.0mm / -40°C~+85°C  
LB - 10A / 5.0mm / -40°C~+105°C  
or  
Indicates minor constructive variation.  
- 01 through -99 - Additional two digits used for special variation of construction as below.
- A) Variation of oil resistance.  
B) Variation of pick-up voltage, non-pick up voltage, drop-out voltage or hold voltage.  
C) Variation of operate or release time.  
D) Variation of dielectric strength.  
E) Variation of coil voltage rated within 5 through 48 VDC.

#### Construction Details

#### Open Type Devices

#### Fig 1

Base: Polybutylene terephthalate (PBT) material Wintech Polymer Ltd. Type 330EP, 0.38 mm thick, flammability rated V-0.

or Wintech Polymer Ltd. Type CRN7030, 0.32 mm thick.

or Nan Ya Plastics Corp. Type 1403G6, 0.75mm thick.

or E I Dupont De Nemours & Co. Type SK665FR, 0.30mm thick.

Dimensions: 0.38mm minimum thickness, 28.3mm by 11.7mm by 14.6mm Overall,

Mounting: {in final assembly} Secured in place to cover by epoxy.

Dust Cover: {material} Wintech Polymer Ltd. Type 330EP, 0.38 mm thick.

or Wintech Polymer Ltd. Type CRN7030, 0.32mm thick.

or Nan Ya Plastics Corp. Type 1403G6, 0.75mm thick.

or E I Dupont De Nemours & Co. Type SK665FR, 0.30mm thick.

Dimensions: 0.25mm minimum thickness, 29.0mm by 12.7mm by 15.7mm Overall.