

IACM/OACM IDCM/ODCM

Slim Line Input/Output Modules

File E81606 & E29244

File LR38595M77

Users should thoroughly review the technical data before selecting a product part number. It is recommended that users also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

Features

- Slim line .4" (10.16mm) thick package.
- Foot print same as .6" (15.24mm) thick package.
- 4,000V rms optical isolation.
- Color coded by function.
- High immunity to false operation.
- Series compatible.
- Output modules can be controlled from sinking or sourcing logic.
- Compatible with 2IOM series mounting boards.

Engineering Data (all I/O modules)

Switch Form: 1 Form A (SPST-NO)

Duty: Continuous.

Capacitance: 8 pF Typical (input to output).

Operating Temperature: -30°C to +80°C.

Storage Temperature: -40°C to +85°C.

Potting Compound Flammability: UL94V-0.

Solderability: 260°C for 5 seconds, maximum.

Approximate Weight: .87 oz. (22.1g).

Ordering Information

Typical Part Number ►

OACM -5 H

1. Basic Series:

- IACM = Slim line AC input module — yellow case
- IDCM = Slim line DC input module — white case
- OACM = Slim line AC output module — black case
- ODCM = Slim line DC output module — red case

2. Input or Logic Voltage:

- 5 = 5VDC
- 15 = 15VDC
- 24 = 24VDC
- U = OACM & ODCM Types 3-15VDC input voltage

3. Options:

- Blank = IACM Type — 120VAC/VDC input (90-140VAC/VDC) * * <None>
- IDCM Type — 3.3-32VDC input * *
- OACM Type — 3A, 24-280VAC, zero voltage turn-on output
- ODCM Type — 3A, 3-60VDC output
- A = IACM Type — 240VAC/VDC input (180-280VAC/VDC) * *
- IDCM Type — 10-60VDC input * *
- OACM Type — 3A, 24-280VAC
- ODCM Type — 1A, 5-250VDC output
- E = IACM Type — 18-36VAC/VDC input * *
- F = IDCM Type — 4-32VDC input & fast turn-on & turn-off times * *
- H = OACM Type — 5A, 24-280VAC, zero voltage turn-on output

* * Is not polarity sensitive.

Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.

- IACM-5 OACM-5H
- IACM-5A OACM-U
- IDCM-5 OACM-UH
- OACM-5 ODCM-5

IACM

AC Input Modules

Input Specifications

| Parameter | Conditions | Units | IACM-5 IACM-15 IACM-24 | | | IACM-5A IACM-15A IACM-24A | | | IACM-5E IACM-15E IACM-24E | | |
|------------------------------------|--------------------------|---------|---------------------------|------|------|------------------------------|------|------|------------------------------|------|------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. |
| Control Voltage Range V_{IN} | | VAC/VDC | 90 | 120 | 140 | 180 | 240 | 280 | 18 | 24 | 36 |
| Must Operate Voltage $V_{IN(OP)}$ | | VAC/VDC | 90 | | | 180 | | | 18 | | |
| Must Release Voltage $V_{IN(REL)}$ | | VAC/VDC | 20 | | | 20 | | | 3 | | |
| Max. Input Current | @ $V_{IN} = \text{Max.}$ | mA | 6 | | | 6 | | | 18 | | |
| Input Resistance R_{IN} | | Ohms | 28K | | | 75K | | | 2K | | |

Output Specifications (@ +25°C unless otherwise specified)

| Parameter | Conditions | Units | IACM-5 IACM-5A IACM-5E | | | IACM-15 IACM-15A IACM-15E | | | IACM-24 IACM-24A IACM-24E | | |
|-----------------------------------|--------------------------|-----------------|----------------------------|------|------|------------------------------|------|------|------------------------------|------|------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. |
| Maximum Output Voltage | | VDC | 30 | | | 30 | | | 30 | | |
| Maximum Output Current I_{SINK} | | mADC | 50 | | | 50 | | | 50 | | |
| Maximum Output Leakage Current | $V_{OUT} = \text{Max.}$ | μADC | 10 | | | 10 | | | 10 | | |
| Maximum Output Voltage Drop | $I_{SINK} = 50\text{mA}$ | VDC | .2 | | | .2 | | | .2 | | |
| Logic Supply Voltage V_{CC} | | VDC | 3 | 5 | 6 | 12 | 15 | 18 | 20 | 24 | 30 |
| Maximum Logic Supply Current | $V_{CC} = \text{Max.}$ | mADC | 18 | | | 18 | | | 18 | | |
| Turn-On Time (Nominal) | $I_{SINK} = 25\text{mA}$ | ms | 20 | | | 20 | | | 20 | | |
| Turn-Off Time (Nominal) | $I_{SINK} = 25\text{mA}$ | ms | 30 | | | 30 | | | 30 | | |
| Output Type (Open Collector) | | | Normally Open (Sinking) | | | Normally Open (Sinking) | | | Normally Open (Sinking) | | |

OACM

AC Output Modules

Input Specifications

| Parameter | Conditions | Units | OACM-5 OACM-5H OACM-5R | | | OACM-15 OACM-15H OACM-15R | | | OACM-24 OACM-24H OACM-24R | | | OACM-U OACM-UH OACM-UH | | |
|------------------------------------|-----------------------------|-------|---------------------------|------|------|------------------------------|------|------|------------------------------|------|------|---------------------------|------|------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. |
| Control Voltage Range V_{IN} | | VDC | 3 | 5 | 8 | 9 | 15 | 18 | 18 | 24 | 32 | 3 | 5 | 15 |
| Must Operate Voltage $V_{IN(OP)}$ | | VDC | 3 | | | 9 | | | 18 | | | 3 | | |
| Must Release Voltage $V_{IN(REL)}$ | | VDC | 1 | | | 1 | | | 1 | | | 1 | | |
| Input Current | @ $V_{IN} = \text{Nominal}$ | mADC | 20 | | | 16 | | | 13 | | | 44 | | |
| Input Resistance R_{IN} | | Ohms | 220 | | | 1000 | | | 2000 | | | 360 | | |

PIN-3 must be positive with respect to PIN-4 for correct operation.

Output Specifications (47 to 63 Hz., @ +25°C unless otherwise specified)

| Parameter | Conditions | Units | OACM-5 OACM-15 OACM-24 OACM-U | | | OACM-5H IAC-15H OAC-24H OACM-UH | | | OACM-5R OACM-15R OACM-24R OACM-UR | | |
|-----------------------------|-----------------------|----------------------------|----------------------------------|---------|------|------------------------------------|---------|------|--------------------------------------|---------|------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. |
| Load Voltage V_L | | V rms | 24 | 120/240 | 280 | 24 | 120/240 | 280 | 24 | 120/240 | 280 |
| Repetitive Blocking Voltage | | V peak | ± 600 | | | ± 600 | | | ± 600 | | |
| Load Current I_L^* | | A rms | .05 | 3 | | .05 | 5 | | .05 | 5 | |
| Output Current | | $\text{mA}/^\circ\text{C}$ | 58 $\text{mA}/^\circ\text{C}$ | | | 66 $\text{mA}/^\circ\text{C}$ | | | 66 $\text{mA}/^\circ\text{C}$ | | |
| Derating | | | 40°C - 80°C | | | 30°C - 80°C | | | 30°C - 80°C | | |
| Single Cycle Surge Current | | A peak | 100 | | | 250 | | | 250 | | |
| Leakage Current (Off-State) | $V_L = 120\text{VAC}$ | mA rms | 1 | | | 1 | | | 1 | | |
| | $V_L = 240\text{VAC}$ | mA rms | 2 | | | 2 | | | 2 | | |
| On-State Voltage Drop | $I_L = \text{Max.}$ | V peak | 1.6 | | | 1.6 | | | 1.6 | | |
| Static dv.dt (Off-State) | | V/ μs | 200 | | | 200 | | | 200 | | |
| Turn-On Time | @ f=60 Hz. | ms | 8.3 | | | 8.3 | | | .1 | | |
| Turn-Off Time | | ms | 8.3 | | | 8.3 | | | 8.3 | | |
| H/P/ Rating | @ 240VAC | HP | 1/4 | | | 1/2 | | | 1/2 | | |

IDCM

DC Input Modules

Input Specifications

| Parameter | Conditions | Units | IDCM-5 IDCM-15 IDCM-24 | | | IDCM-5A IDCM-15A IDCM-24A | | | IDCM-5F IDCM-15F IDCM-24F | | |
|------------------------------------|------------------|-------|---------------------------|------|------|------------------------------|------|------|------------------------------|------|------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. |
| Control Voltage Range V_{IN} | | VDC | ±3.3 | ±24 | ±32 | ±10 | | ±60 | ±4 | | ±32 |
| Must Operate Voltage $V_{IN(OP)}$ | | VDC | | | ±3.3 | | | ±10 | | | ±4 |
| Must Release Voltage $V_{IN(REL)}$ | | VDC | ±2 | | | ±3 | | | ±1 | | |
| Maximum Input Current | @ V_{IN} =Max. | mA | | 34 | | | 34 | | | 68 | |
| Input Resistance R_{IN} | | Ohms | | 1000 | | | 2000 | | | 500 | |

Output Specifications (@ +25°C unless otherwise specified)

| Parameter | Conditions | Units | IDCM-5 IDCM-5A | | | IDCM-15 IDCM-15A | | | IDCM-24 IDCM-24A | | | IDCM-5F | | | IDCM-15F | | | IDCM-24 IDCM-24F | | |
|--------------------------------|------------------|-------|-------------------|-----|----------------------------|---------------------|-----|----------------------------|---------------------|-----|----------------------------|---------|-----|----------------------------|----------|-----|----------------------------|---------------------|-----|----------------------------|
| | | | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max |
| Maximum Output Voltage | | VDC | | | 30 | | | 30 | | | 30 | | | 30 | | | 30 | | | 30 |
| Maximum Output Current | | mADC | | | 50 | | | 50 | | | 50 | | | 50 | | | 50 | | | 50 |
| Maximum Output Leakage Current | V_{OUT} =Max. | µADC | | | 10 | | | 10 | | | 10 | | | 10 | | | 10 | | | 10 |
| Maximum Output Voltage Drop | I_{SINK} =50mA | VDC | | | .2 | | | .2 | | | .2 | | | .2 | | | .2 | | | .2 |
| Logic Supply Voltage V_{CC} | | VDC | 3 | 5 | 6 | 12 | 15 | 18 | 20 | 24 | 30 | 3 | 5 | 6 | 12 | 15 | 18 | 20 | 24 | 30 |
| Logic Supply Current | V_{CC} =Max. | mADC | | | 18 | | | 18 | | | 18 | | | 18 | | | 18 | | | 18 |
| Turn-On Time (Nominal) | I_{SINK} =25mA | ms | | 1* | | | 1* | | | 1* | | | .05 | | .05 | | .05 | | | .05 |
| Turn-Off Time (Nominal) | I_{SINK} =25mA | ms | | 1* | | | 1* | | | 1* | | | .10 | | .10 | | .10 | | | .10 |
| Output Type (Open Collector) | | | | | Normally Open (SINKING) | | | Normally Open (SINKING) | | | Normally Open (SINKING) | | | Normally Open (SINKING) | | | Normally Open (SINKING) | | | Normally Open (SINKING) |

* Nominal Turn-On and Turn-Off times for IDCM5A, IDCM15A & IDCM24A are 5 ms.

ODCM

DC Output Modules

Input Specifications

| Parameter | Conditions | Units | ODCM-5 ODCM-5A | | | ODCM-15 ODCM-15A | | | ODCM-24 ODCM-24A | | | ODCM-U ODCM-UA | | |
|------------------------------------|---------------------|-------|----------------|------|------|------------------|------|------|------------------|------|------|----------------|------|------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. |
| Control Voltage Range V_{IN} | | VDC | 3 | 5 | 8 | 9 | 15 | 18 | 18 | 24 | 32 | 3 | 5 | 15 |
| Must Operate Voltage $V_{IN(OP)}$ | | VDC | | | 3 | | | 9 | | | 18 | | | 3 |
| Must Release Voltage $V_{IN(REL)}$ | | VDC | 1 | | | 1 | | | 1 | | | 1 | | |
| Maximum Input Current | @ V_{IN} =Nominal | mADC | | | 18 | | | 16 | | | 13 | | | 44 |
| Input Resistance R_{IN} | | Ohms | | | 250 | | | 1000 | | | 2000 | | | 360 |

PIN-3 must be positive with respect to PIN-4 for correct operation.

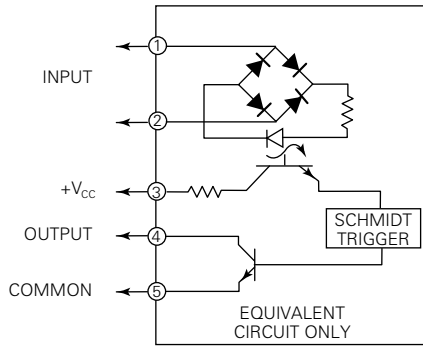
Output Specifications (@ +25°C unless otherwise specified)

| Parameter | Conditions | Units | ODCM-5 ODCM-15 ODCM-24 ODCM-U | | | ODCM-5A ODCM-15A ODCM-24A ODCM-UA | | | | | |
|-------------------------------------|------------|-------|----------------------------------|------|------|--------------------------------------|------|------|--|--|------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | | | |
| Load Voltage V_L | | VDC | | | 3 | | | 3 | | | 250 |
| Load Current I_L * | | ADC | | | .01 | | | 3 | | | .01 |
| Maximum Surge Current for 1 Second | | ADC | | | | | | 5 | | | 5 |
| Maximum Leakage Current (Off-State) | V_L =MAX | µADC | | | | | | 500 | | | 2000 |
| Maximum On-State Voltage Drop | I_L =MAX | VDC | | | | | | 1.5 | | | 1.5 |
| Maximum Turn-On Time | | ms | | | | | | .1 | | | .1 |
| Maximum Turn-Off Time | | ms | | | | | | .75 | | | .75 |

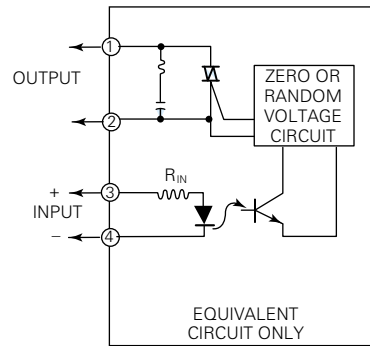
* Above 40°C, derate by 50mA/°C to 80°C.

PIN-1 must be positive with respect to PIN-2 for correct operation.

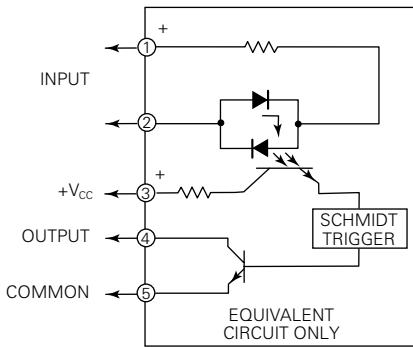
IACM Operating Diagram



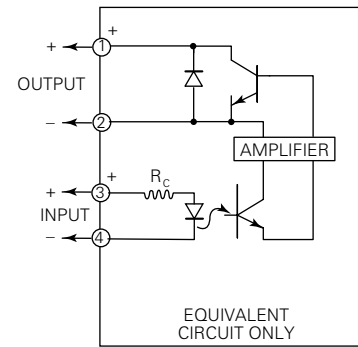
OACM Operating Diagram



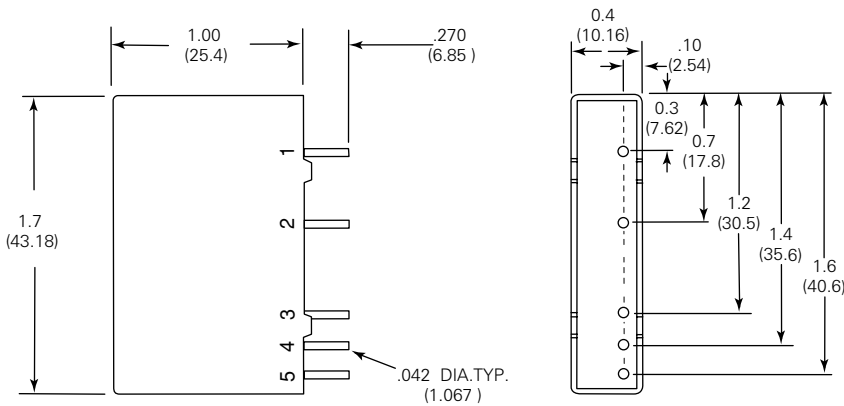
IDCM Operating Diagram



ODCM Operating Diagram



Outline Dimensions



Note: Pin 5 is not present on Output Modules.