

# 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	$V_{OUT} = \text{Max.}$	$\mu\text{ADC}$	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	$\pm 600$			$\pm 600$			$\pm 600$		
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/ $\mu\text{s}$	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			
Maximum Output Voltage		VDC			30			30			30			30			30			
Maximum Output Current		mADC			50			50			50			50			50			
Maximum Output Leakage Current	$V_{OUT}$ =Max.	µADC			10			10			10			10			10			
Maximum Output Voltage Drop	$I_{SINK}$ =50mA	VDC			.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)					

\* 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.

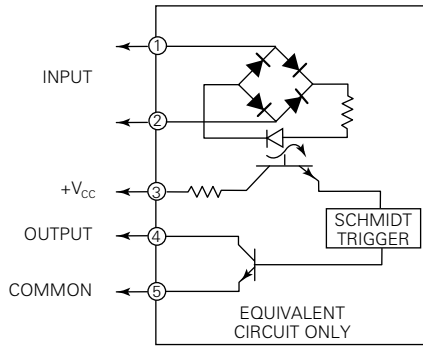
### Output Specifications (@ +25°C unless otherwise specified)

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		60	3		250
Load Current $I_L$ *		ADC	.01		3	.01		1
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

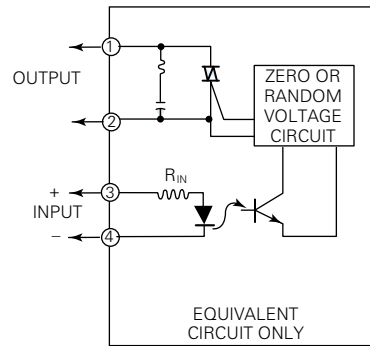
\* Above 40°C, derate by 50mA/°C to 80°C.

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

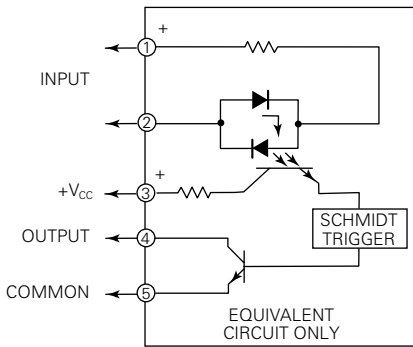
**IACM Operating Diagram**



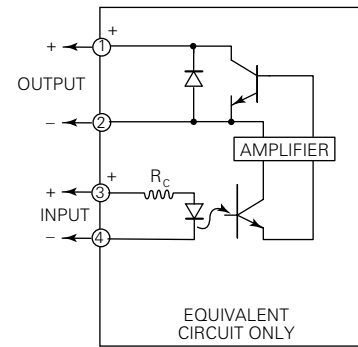
**OACM Operating Diagram**



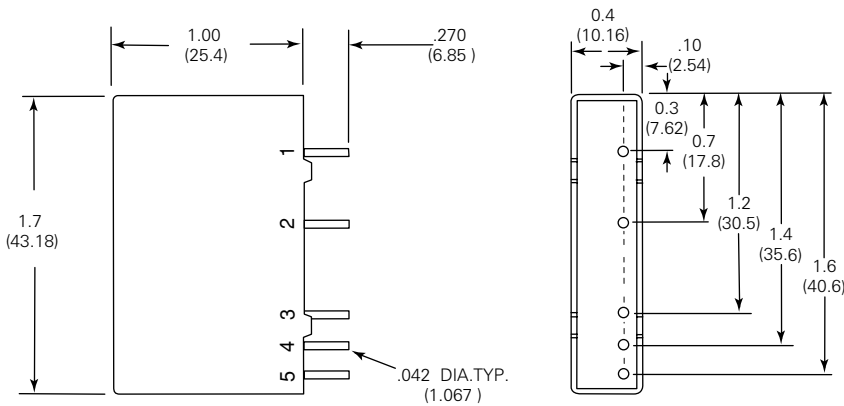
**IDCM Operating Diagram**



**ODCM Operating Diagram**



**Outline Dimensions**



**Note:** Pin 5 is not present on Output Modules.