

ROTARY CAM SWITCHES Cam Series www.sifamtinsley.com



- **Transducers & Isolators**
- **Temperature Controllers**
- **Converters & Recorders**
- **Digital Panel Meters**
- **Current Transformers**
- **Analogue Panel Meters**
- Shunts
- **Digital Multimeters**
- **Clamp Meters**
- **Insulation Testers**

# ROTARY CAM SWITCHES CAM SERIES

User Manual - Issue 1.1



## Features

- → Compact Size
- → Reliable Design
- → Multi pole

**Cam Series** 

- → Quick & Easy to Installation
- ➔ High Protection Class





**Sifam Tinsleys New Cam I,C,M &INS rotary cam Switches** offer a complete range of cam switches for control, instrumentation and motor starting applications, maximizing the benefits and optimizing your use of asset

### **1. Product Features**

- Compact Size Different contact design, contact material & terminals allows us to make them compact.
- Reliable Design
   These switches are tested in various laboratories as per National and
   International standards for performance and user safety.
- Multipole

Multi pole design with multiple stacks gives freedom to user to use same switch in different/multiple application

• Quick & Easy to Installation

Captive +/- screw save installation time. The integrated screw driver guides (available in 20A size) make the use of motorized screw driver easy & stable . Lug terminals for connecting cable clamps & crimp plugs available forall sizes.

High Protection Class

Finger touch proof tunnel terminal provides IP 20 protection in Cam 20A, eliminate the risk of touching live parts without adding any protective covers.

## 2. Application

- ON-OFF Switches
- Change over Switches
- Multi-step Switches
- Volt-Ammeter Switches
- Selector Switches
- Mains Switching
- Coolant Pumps

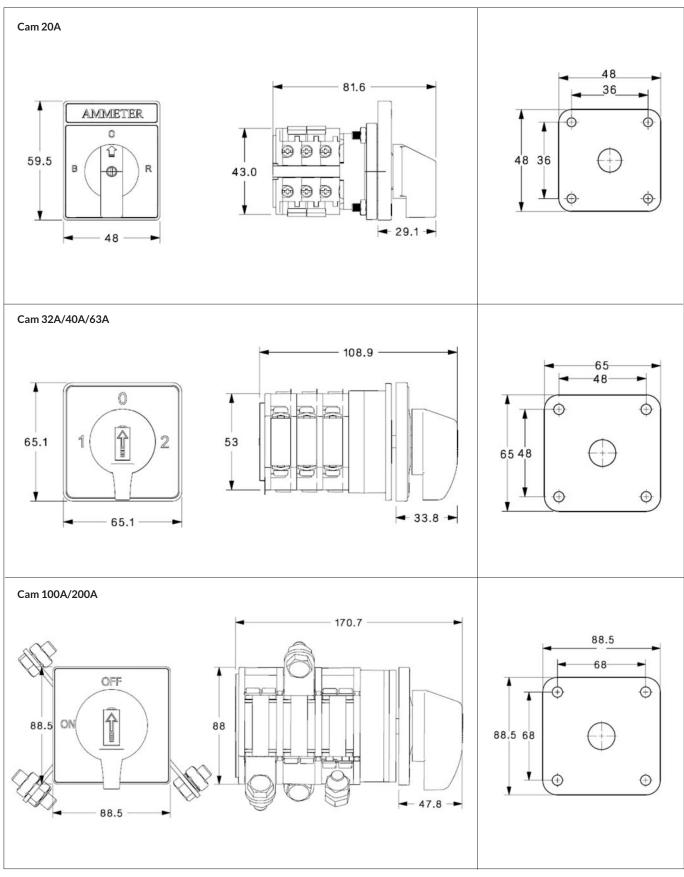
A focused standard range of Cam series Rotary Cam Switches cover most applications with different contact designs, contact material and terminals allow their use as control switches, instrumentation switches and motor control switches, as well as in electronic circuitry and in aggressive environment according to IEC/EN 60947-3 and VDE 0660 part 107.





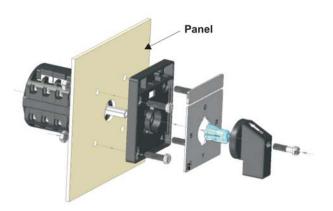
## 3. Rotary Cam Switches Dimensional Drawings

Panel Mounting





## 4. Installation



## 5. Technical Data

PARAMETER	STANDARD	20A	32A	40A	63A	100A	200A	UNIT
				v	ALUE	1	1	
Rated Insulation Voltage (Ui)	IEC 60947-3, EN 60947-3 VDE 0660 part 107 SEV	690 660	690 690	690 690	690 690	690 690	690 -	V V
Rated Impulse Withstand Voltage Uimp		6	6	6	6	6	6	KV
Rated Thermal Current (lu/ lth)	IEC 60947-3, EN 60947-3 VDE 0660 part 107 SEV 380V 660V	20 16 12	32 32 32	40 40 40	63 63 63	100 100 -	200 - -	A A A
Rated operational Current (le)								
AC-21A Switching of resistive loads, including moderate overloads	IEC 60947-3, EN 60947-3 VDE 0660 part 107	20	32	40	63	100	200	A
AC-1 Resistive or low Inductive Loads	SEV 380V 660V	16 12	32 32	40 40	63 63	100	-	A A
AC-22A Switching of Combined resistive or low inductive loads including moderate overloads	IEC 60947-3, EN 60947-3 VDE 0660 part 107 220V-500V 660V-690V	20 20	32 32	40 40	63 63	100 100	150 125	A A
AC-15 Switching of control devices, contactors, valves etc.	IEC 60947-3, EN 60947-3 VDE 0660 part 107 220V-240V 380V-440V	5 4	12 6	14 6	16 7	-		A A
Breaking Capacity	220V-240V 380V-440V 660V-690V	150 150 80	280 250 150	290 290 170	440 440 260	860 860 400	1100 1100 490	A A A
Ambient Temperature of Stages open at 100% (lu/lth) Enclosed at 100% (lthe)	55°C during 24 hours with peaks u 35°C during 24 hours with peaks u	1						



## 6. CAM Series

FEATURES	CAM-I	(ISOLATORS)	<ul> <li>CAM-MOFF (9 W)</li> <li>CAM-MOFF (10 W)</li> </ul>	(Multi step with Off 9 Way) (Multi step with Off 10 Way)
COMPACT & RELIABLE	• CAM-I60	(Isolators 60D Rotation)	<ul> <li>CAM-MOFF (11 W)</li> </ul>	(Multi step with Off 11Way)
MULTIPOLE	• CAM-190	(Isolators 90D Rotation)		(mold stop wat on Trivay)
EASY INSTALLATION	• CAM-190 CR	(Isolators 90D Complete Rotation)	CAM-MWOFF (3 W)	(Multi step without Off 3 Way)
TERMINAL SCREWS WITH FIXED CLAMP	• CAM-I45	(Isolators 45 D)	CAM-MWOFF(4 W)	(Multi step without Off 4 Way)
TERMINAL CORENO WITH TIMED CERMI	CAM-C	(CHANGEOVER)	· CAM-MWOFF(5 W)	(Multi step without Off 5 Way)
	CAM-COFF 60	(Change over with Off 60 D Rotation)	CAM-MWOFF(6 W)	(Multi step without Off 6 Way)
APPLICATIONS	CAM-COFF 90	(Change over with Off 90 D Rotation)	<ul> <li>CAM-MWOFF(7 W)</li> </ul>	(Multi step without Off 7 Way)
MAINS SWITCHING	CAM-CWOFF 90	(Change over with out Off 90 DRotation)	CAM-MWOFF(8 W)	(Multi step without Off 8 Way)
BREAKER CONTROL	• CAM-PC 90	(Phase Change over 90 D Rotation	CAM-MWOFF(9 W)	(Multi step without Off 9 Way)
COOLANT PUMPS	CAM-M	(MULTISTEP)	<ul> <li>CAM-MWOFF(10 W)</li> </ul>	(Multi step without Off 10 Way)
CONTROL CIRCUITS	CAM-MOFF (3W)	( Multi step with Off 3 Way)	CAM-MWOFF(11 W)	(Multi step without Off 11 Way)
INSTRUMENTATION	· CAM-MOFF (4W)	(Multi step with Off 4 Way)	CAM-MWOFF(12 W)	(Multi step without Off 12 Way)
ISOLATORS	· CAM-MOFF (5W)	(Multi step with Off 5 Way)		
CHANGEOVER SWITCH	· CAM-MOFF (6W)	(Multi step with Off 6 Way)	CAM-INS	(INSTRUMENT SWITCHES)
CHANGEOVEN SWITCH	· CAM-MOFF (7W)	(Multi step with Off 7 Way)	CAM-AMP	(Ammeter Selector Switch)
	· CAM-MOFF (8W)	(Multi step with Off 8 Way)	CAM-VOLT	(Voltmeter Selector Switch)

CAM-C

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DESCRIPTION	-		CL	JRR	ENT	RAT	ING	i	
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P ON-OFF	*	*	*	*	*	*	*	*	*
2P ON-OFF	*	*	*	*	*	*	*	*	*
3P ON-OFF	*	*	*	*	*	*	*	*	*

CURRENT RATING

6A 10A 16A 25A 32A 40A 63A 100A 200A

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CURRENT RATING

6A 10A 16A 25A 32A 40A 63A 100A 200A

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## CAM-COFF 60

DESCRIPTION	CURRENT RATING										
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A		
1P 2W - OFF	*	*	*	*	*	*	*	*	*		
2P 2W - 0FF	*	*	*	*	*	*	*	*	*		
3P 2W - 0FF	*	*	*	*	*	*	*	*	*		

## CAM-COFF90

DESCRIPTION		CURRENT RATING										
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A			
1P 2W - OFF	*	*	*	*	*	*	*	*	*			
2P 2W - OFF	*	*	*	*	*	*	*	*	*			
3P 2W - 0FF	*	*	*	*	*	*	*	*	*			

Offered Up To 6 Poles

### CAM-CWOFF90

DESCRIPTION		CURRENT RATING									
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A		
1P 2W - WOFF	*	*	*	*	*	*	*	*	*		
2P 2W - WOFF	*	*	*	*	*	*	*	*	*		
3P 2W - WOFF	*	*	*	*	*	*	*	*	*		

Offered Up To 6 Poles

## CAM-PCF90

DESCRIPTION		CURRENT RATING								
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A	
1P 3W - OFF	*	*	*	*	*	*	*	*	*	
2P 3W - 0FF	*	*	*	*	*	*	*	*	*	
3P 3W - OFF	*	*	*	*	*	*	*	*	*	



### 2P ON-OFF 3P ON-OFF Offered Up To 12 Poles

CAM-I90CR

DESCRIPTION

1P ON-OFF

2P ON-OFF

3P ON-OFF

CAM-190

1P ON-OFF

DESCRIPTION

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#### CAM-I45 CURRENT RATING DESCRIPTION 6A 10A 16A 25A 32A 40A 63A 100A 200A 1P ON-OFF \* \* \* \* \* \* \* -2P ON-OFF \* \* \* \* \* \* \* . -3P ON-OFF \* \* \* \* \* \*

Offered Up To 12 Poles

Offered Up To 12 Poles

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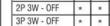
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### CAM-M

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CAM-MOFF (3 WAY)

DESCRIPTION			CUF	RREI	NT R	ATI	NG		
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 3W - OFF	*	*	*	*	*	*	*	*	*
2P 3W - OFF	*	*	*	*	*	*	*	*	*
3P 3W - 0FF	*	*	*	*	*	*	*	*	*
4P 3W - OFF	*	*	*	*	*	*	*	*	*

CURRENT RATING

CAM-MOFF (4 WAY) CURRENT RATING DESCRIPTION 6A 10A 16A 25A 32A 40A 63A 100A 200A 1P 4W - OFF \* \* \* \* \* \* \* \* \* 2P 4W - OFF \* \* \* \* \* . \* 3P 4W - OFF \* \* \* \* \* .

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## CAM-MOFF (7 WAY)

CAM-MOFF (8 WAY)

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DESCRIPTION						RAT			
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 7W - OFF	*	*	*	*	*	*	*	(A) (	× (

CURRENT RATING

6A 10A 16A 25A 32A 40A 63A 100A 200A

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CAM-MOFF	(5 V	VAY	)						
DESCRIPTION			CL	JRR	ENT	RAT	ING		
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 5W - OFF	*	*	*	*	*	*	*	*	*
2P 5W - OFF	*	*	*	*	*	*	*	*	*

## CAM MORE (6 WAY)

DESCRIPTION			CL	JRR	ENT	RAT	ING	i	
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 6W - 0FF	*	*	*	*	*	*	*		•
2P 6W - 0FF	*	*	*	*	*	*	*		

#### DESCRIPTION Ð 1P 8W - OFF 4 7 5 6 0 1 2

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## CAM-MOFF (9 WAY)

DECODIDITION			/	JRR	ENT	RAT	ING	1	
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 9W - OFF	*	*	*	:	-	10			

## CAM-MOFF (10 WAY)

	Ì		01	IRRI	ENT	RAT	ING		-
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 10W - OFF	*	*	*	(5)			•		-

CURRENT RATING

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100A 200A

10A 16A 25A 32A 40A 63A

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#### CAM-MOFF (11 WAY) CURRENT RATING DESCRIPTION 10A 16A 25A 32A 40A 63A 100A 200A 6A 1P 11W - OFF \* \* \*



## CAM-MWOFF (3 WAY)

DESCRIPTION		CURRENT RATING									
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A		
1P 3W - WOFF	*	*	*	*	*	*	*	*	*		
2P 3W - WOFF	*	*	*	*	*	*	*	*	*		
3P 3W - WOFF	*	*	*	*	*	*	*	*	*		
4P 3W - WOFF	*	*	*	*	*	*	*	*	*		

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## CAM MWOFF (4 WAY)

DESCRIPTION		CURRENT RATING									
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A		
1P 4W - WOFF	*	*	*	*	*	*	*	*	*		
2P 4W - WOFF	*	*	*	*	*	*	*	*	*		
3P 4W - WOFF	*	*	*	*	*	*	*	*	*		

## CAM-MWOFF (5 WAY)

DESCRIPTION			CL	JRR	ENT	RAT	ING		
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 5W - WOFF	*	*	*	*	*	*	*	*	*
2P 5W - WOFF	*	*	*	*	*	*	*	*	*

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#### 2P 6W - WOFF \* \*

CAM-MWOFF (6 WAY)

6A

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DESCRIPTION

1P 6W - WOFF

CAM-MWOFF	(7 WAY)

DESCRIPTION	CURRENT RATING           6A         10A         16A         25A         32A         40A         63A         100A         200A											
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A			
1P 7W - WOFF	*	*	*	*	*	*	*		-			

## CAM-MWOFF (8 WAY)

DESCRIPTION	CURRENT RATING           6A         10A         16A         25A         32A         40A         63A         100A         200A										
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A		
1P 8W - WOFF	*	*	*	*	*	*	*	-			

## CAM-MWOFF (9 WAY)

DESCRIPTION	CURRENT RATING           6A         10A         16A         25A         32A         40A         63A         100A         200A										
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A		
1P 9W - WOFF	*	*	*		•	-	-		-		

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CAM SERIES

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DESCRIPTION	CURRENT RATING											
	6A	10A	16A	25A	32A	40A	63A	100A	200A			
1P 10W - WOFF	*	*	*	-		-	-	-	-			

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AMMETER SEL	ECT	OR	sw	ITC	н								
DESCRIPTION		CURRENT RATING											
	6A	10A	16A	25A	32A	40A	63A	100A	200A				
ine Currents with OFF	*	*	*	-	-	-	-		-				



DESCRIPTION	6A         10A         16A         25A         32A         40A         63A         100A         200A								
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 11W - WOFF	*	*	*	- 1	4	-	Ψ.	-	-

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## VOLTMETER SELECTOR SWITCH

DECODIDITION		CURRENT RATING										
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A			
Voltage Between Phases with OFF	*	*	*	-	. ¥	<u>_</u>	-	-	-			



## CAM-MWOFE (12 WAY)

DESCRIPTION				JRRENT RATING					
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A
1P 12W - WOFF	*	*	*	-	-	-	-	-	-

RN	VOLTMETER SEL	EC	сто	RS	WI	гсн				
	DECODIDITION		С	URI	REN	TR	ATI	NG		
- YN	DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	ĺ
BN	Voltage Between Phases & Individual Phases to neutral with OFF	*	*	*	-	-	-	-	-	ľ

## CAM-INS

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## AMMETER SELECTOR SWITCH DESC

DESCRIPTION		CURRENT RATING									
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200A		
Line Currents with Off	*	*	*	-	-	-		-	-		

	CURRENT RATING										
DESCRIPTION	6A	10A	16A	25A	32A	40A	63A	100A	200		
Voltage Between Phase to neutral with OFF	*	*	*		-	-		-	-		

## 7. Ordering Information

Example

- 1) Customer Requirement : 16A, multi step, without off, 1Pole 12 Way Ordering code : CAM - MWOFF (12WAY) 1P 12W - WOFF, 16A
- 2) Customer Requirement : 100A, Change over, without off, 90D rotation, 3 Pole 2 Way Ordering code: CAM - CWOFF90 3P 2W - WOFF, 100A

