

HYBRID

MODCAM

MODULAR ZOOM CAMERA



Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.

The design and specifications are due to change without prior notice to improve products quality.

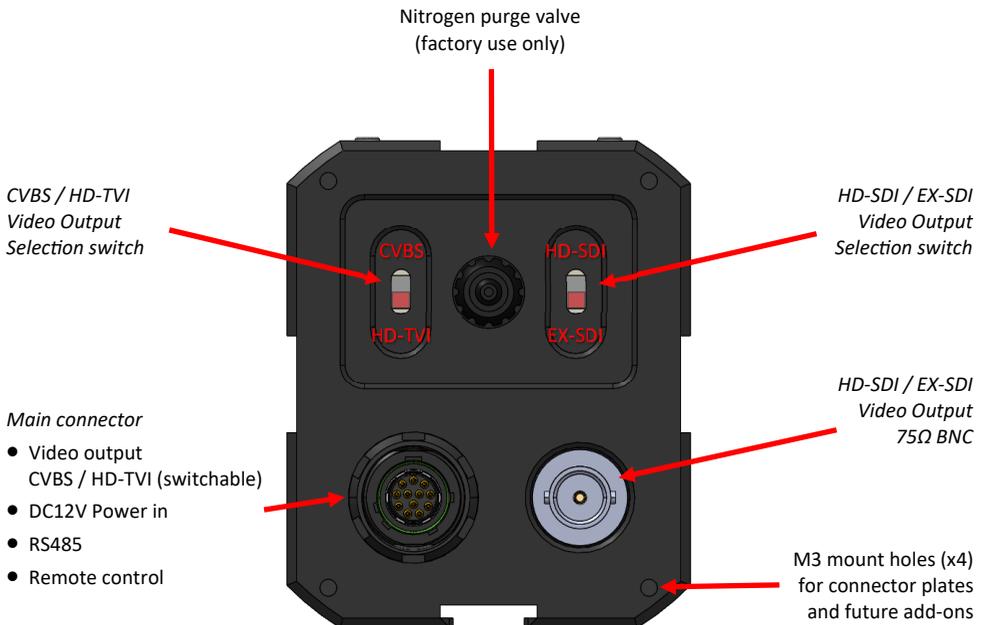
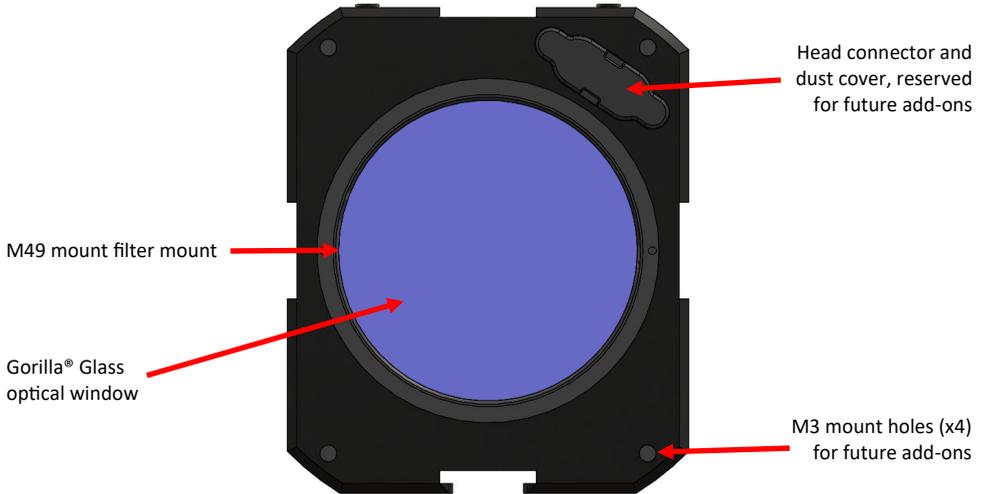
CAMERA SPECIFICATIONS

The design and specifications are due to change without prior notice to improve product quality.

<i>Image Sensor</i>	1/1.9", Sony Exmor CMOS sensor
<i>Total pixels</i>	1952 (H) x 1241 (V) = 2.42M Pixels
<i>Active pixels</i>	1937 (H) x 1097 (V) = 2.12M Pixels
<i>Scanning system</i>	Progressive scan
<i>Resolution</i>	Digital: 1080p/60(50)fps, 1080p/30(25)fps, 720p/60(50)fps, 720p/30(25)fps Analog: 700TVL
<i>Video Output</i>	HD: HD-SDI, EX-SDI, HD-TVI (Analog HD) Analog: CVBS (without WDR mode)
<i>Minimum illumination</i>	Color (1/30s): 0.15 lux, BW (1/30s): 0.01lux Color DSS (1/7.5s): 0.0375 lux, BW DSS (1/7.5s): 0.002 lux
<i>Lens type</i>	36x motorised zoom lens with mechanical day/night ICR filter
<i>Focal length</i>	f = 6.0 mm - 216.0 mm
<i>Aperture ratio</i>	F1.5 (wide) - F4.8 (tele)
<i>Angle of View</i>	Wide: 63.3° (D), 56.5° (H), 33.6° (V) Tele: 2.4° (D), 2.1° (H), 1.2° (V)
<i>Communication</i>	Baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115200 Protocol: Visca, Pelco-D, Pelco-P
<i>Operating temperature</i>	-10°C to +50°C
<i>Storage temperature</i>	-20°C to +60°C
<i>Power supply</i>	9V to 15V DC
<i>Power consumption</i>	500mA (max)

- This camera has an input voltage range of DC 9 to 15V, connection of a larger voltage will result in permanent damage.
- A regulated DC 12V 500mA or greater power supply is recommended for use with this camera for the best picture and most stable operation.
- Handle with care, dropping can cause serious damage
- Do not remove cover, no user serviceable parts inside and this will void your product warranty

The ModCam is a ruggedised zoom camera ideal for longer range deployments. Utilising Hybrid technology the camera can simultaneously output HD and SD video streams ensuring compatibility with all of your current and future video systems. A modular front and back plate system means that the ModCam can easily be re-configured for each operation.



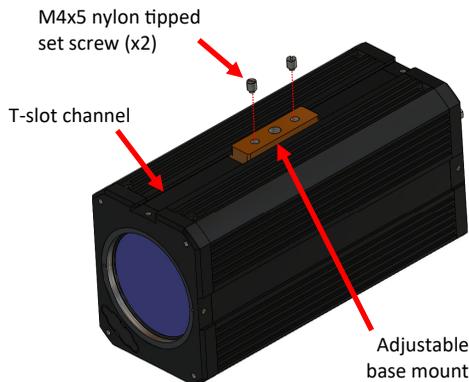
CAMERA MOUNTS

The ModCam is designed with numerous mounting options as standard to make deploying the camera easier for you. 3D space models of the ModCam are also available to aid you in designing your own customised mounts and deployment hides. These can be found on our secure inazone.xyz website.

Adjustable base mount

An adjustable mount block can be attached to the bottom of the camera which provides a standard 1/4"-20 UNC tripod thread. When required the mount block is slid into the t-slot channel on the base of the camera and secured in place using the supplied M4x5 nylon tipped set screws.

Note: Do not overtighten the set screws as you can potentially damage the camera case



Rail mount

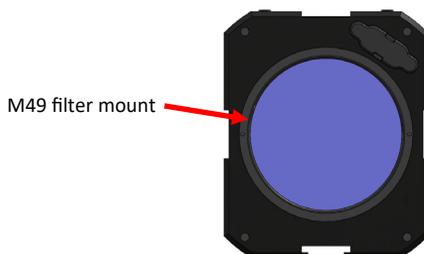
An additional mount rail can be attached to the camera as required. The rail can be fitted to the sides or top of the camera and provides multiple 1/4"-20 UNC tripod threads. The mount rail is fastened in the required location using the supplied M3x4 pan head pozi screws.

Note: Do not overtighten the screws as you can potentially damage the camera case

Lens filter mount

A lens filter mount is also provided on the ModCam to allow the use of additional photographic filters such as CPL and KillFlash. This mount utilises a standard M46 filter thread.

Note: Care should be taken when threading in filters due to the fine pitch of the thread.





The main connector video output can be either CVBS or HD-TVI. The required format is selected using the selection switch.

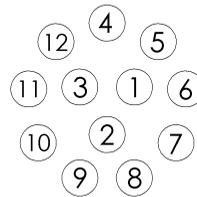
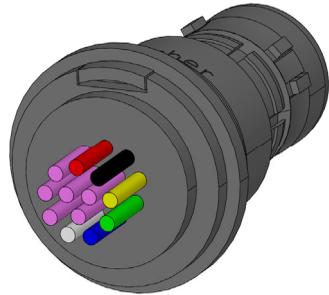
HD-SDI / EX-SDI video is available from the BNC connector. Output format is set using the selection switch.

Main Connector

Fischer, Ultimate 12pin plug

Recommended P/N: *UP01L11 F012S BK1 Z1ZB*

Pin 4	-	V+ (DC12V)
Pin 5	-	Ground
Pin 6	-	CVBS / HD-TVI (switchable)
Pin 7	-	485 -
Pin 8	-	485 +
Pin 9	-	AD REMOTE CONTROL
Pin 1	-	Reserved
Pin 2	-	Reserved
Pin 3	-	Reserved
Pin 10	-	Reserved
Pin 11	-	Reserved



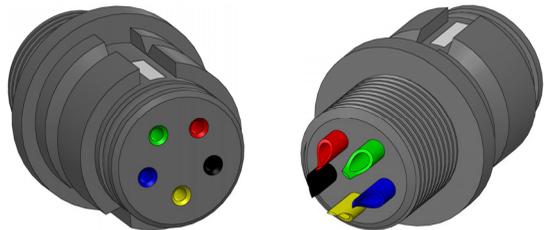
Plug & Play Connector

(if alternative encoder cable used)

Binder, 5 pin IP-67 620 series plug

P/N: *99 9213 00 05*

Pin 1	-	V+ (DC12V)
Pin 2	-	Ground
Pin 3	-	CVBS
Pin 4	-	485 +
Pin 5	-	485 -



Connector Dust Covers

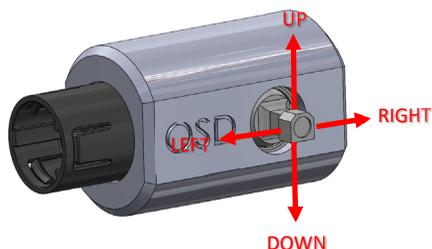
If the BNC connector is not used for camera operation please use the supplied dust covers to protect from damage and dirt ingress.

CAMERA CONTROL

The ModCam can either be controlled using a suitable RS485 signal or using a local AD remote control. Local camera control is possible using the supplied AD thumb control and extended features cable.

The AD thumb remote control can also be used to zoom and focus the camera. When the OSD is not displayed on screen the AD thumb remote control has the following functions.

- Tele (Up): Zoom in
- Wide (Down): Zoom out
- Near (Left): Adjusts the focus in manual mode
- Far (Right): Adjusts the focus in manual mode
- Set (Enter): Brings up the OSD menu



Extended features cable (green heatshrink)

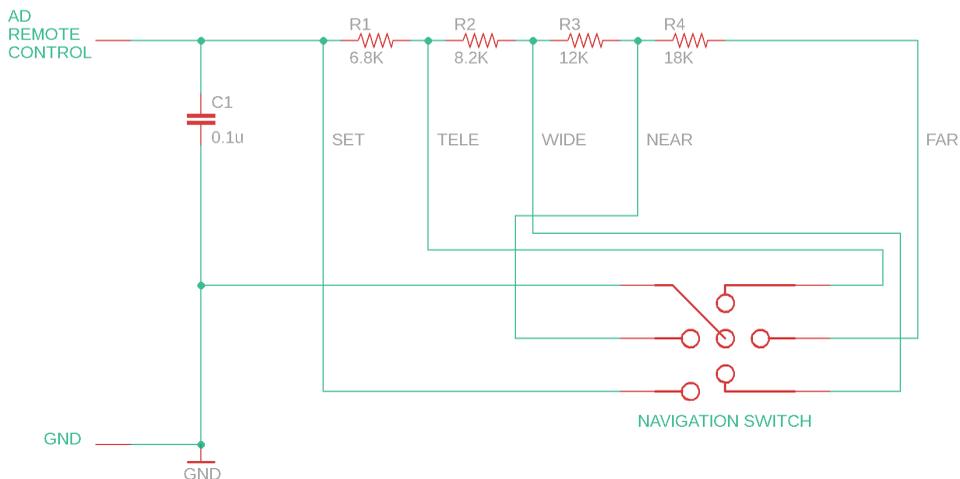
AD remote control Connector

Binder, 3 pin IP-67 620 series plug

P/N: 99 9205 00 03

- Pin 1 - AD REMOTE CONTROL
- Pin 2 - N/C
- Pin 3 - GND

AD remote control - circuit diagram





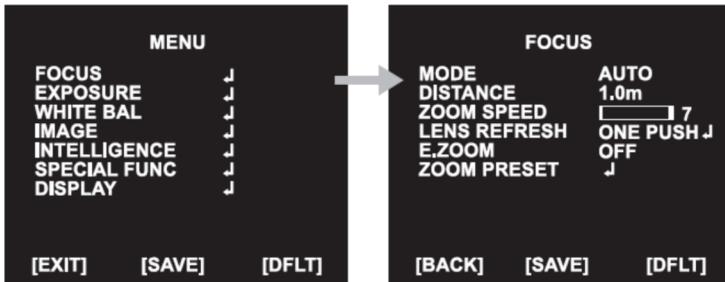
The menu consists of the “Main Menu” and “Sub Menu”. The main menu is displayed where 7 camera functions can be selected. When you select each main menu selection, the sub-menu is displayed.

If you want to save any changes you have made, select [SAVE].

If you do not want to save your settings, select [EXIT]. After you have selected [SAVE] or [EXIT], power off and on the camera.

If you would like to reset the camera to factory default settings, select [DFLT].

OSD - Focus



- **MODE:** Select the auto focus mode
 - AUTO, ONE PUSH, MANUAL
- **DISTANCE:** Select the minimum focus distance between the camera and object
 - 0.1 / 1.0 / 3.0 / 5.0 / 10.0m
- **ZOOM SPEED:** Select the zoom speed
 - 0 (Slow) - 7 (Fast)
- **LENS REFRESH:** Lens origin calibrated automatically
 - ONE PUSH ← / ON (1 day - 10 days)
- **E.ZOOM:** Select the maximum digital zoom magnification
 - OFF / ON (max x2 ~ x19, x21, x23, x25, x28, x32)
- **ZOOM PRESET:** Select zoom preset
 - PRESET #: Select the zoom preset number (1 ~ 5)
 - MODE: OFF / ON ←
 - ⇒ ON ←: Adjust the zoom position



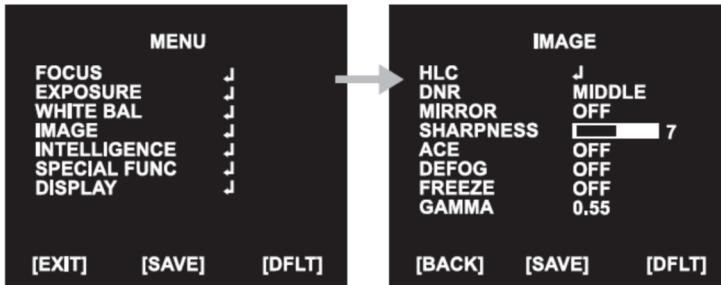
- MODE: Select the exposure mode
 - AUTO / IRIS.P / SHUT.P / MANUAL
- AGC: Select the auto gain control
 - OFF / ON (AUTO, SHUT.P or IRIS.P mode)
 - 0 ~ 10 (MANUAL mode)
- SHUT SPEED: This can be set in SHUT.P or MANUAL mode
 - 60 / 50 fps mode*
 - X8, x4, x2, 1/60(50), 1/120(100), 1/250, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000, 1/30000 sec
 - 30 / 25 fps mode*
 - x4, x2, 1/30(25), 1/60(50), 1/120(100), 1/250, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000, 1/30000 sec
- IRIS: The iris level can be set in IRIS.P or MANUAL mode
 - 0 ~ 20
- DSS: Select the maximum DSS (Digital Slow Shutter, AKA Sens-Up)
 - 60 / 50 fps mode*
 - OFF / x2, x4, x8
 - 30 / 25 fps mode*
 - OFF / x2, x4
- FLICKERLESS: Select the flickerless mode
 - OFF / ON (remove screen flicker)
- BRIGHTNESS: Adjust the brightness level
 - 0(dark) ~ 20(bright) steps
- WDR/BLC: Select WDR (Wide Dynamic Range) or BLC (Back Light Compensation)
 - WDR ←
 - ⇒ LEVEL: Adjust the WDR level
 - LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH
 - * WDR doesn't work in *Manual Exposure Mode* and *Shutter Priority Mode*
 - * **When WDR is on, CVBS output is disabled**
 - BLC ←
 - ⇒ POSITION: Adjust the window position
 - ⇒ SIZE: Adjust the window size
 - * You can't use WDR and BLC at the sametime (When WDR is on, BLC is off. When BLC is on, WDR is off)
 - * BLC doesn't work in *Manual Exposure Mode*

- DAY&NIGHT: Select Day&Night settings
 - MODE: AUTO ↵ / EXT-IN ↵ / DAY/NIGHT ↵
 - ⇒ AUTO
 - DELAY: 0 ~ 255 sec
 - THRS: 0 ~ 28
 - Day ↔ Night switching level in Auto mode
 - Switching in lower lux with threshold level
 - ⇒ GAP: LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH
 - Margin between Day→Night switching level and Night→Day switching level
 - ⇒ IR DETECTION: Setting IR detection mode (ON / OFF)
 - ⇒ IR DET LEVEL: Setting IR detection level (LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH)
 - ⇒ BURST: OFF / ON
 - EXT-IN: (This function is not enabled in the ModCam hardware)
 - NIGHT:
 - ⇒ BURST: OFF / ON

OSD - WHITE BALANCE

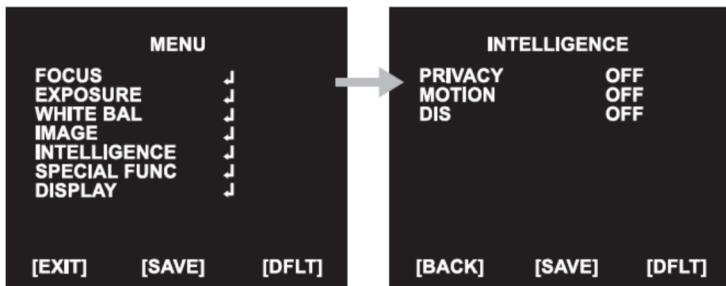


- AWB: Select WHITE BALANCE mode
 - AUTO, ONE PUSH ↵ / MANUAL / INDOOR / OUTDOOR
 - ⇒ AUTO: Automatically adjusts the colour to the available lighting
 - ⇒ ONE PUSH: A fixed white balance mode that may be readjusted only by pressing ONE PUSH
 - ⇒ MANUAL ↵: Colour can be corrected when the user increase or decreases RED GAIN or BLUE GAIN
 - ⇒ INDOOR: Sets the colour temperature to be indoor light (3700°K)
 - ⇒ OUTDOOR: Sets the colour temperature to be outdoor light (5100°K)
 - RED GAIN: Adjust R gain value ► 0 ~ 20 steps
 - BLUE GAIN: Adjust B gain value ► 0 ~ 20 steps
 - CHROMA: Adjust CHROMA gain value ► 0 ~ 20 steps



- **HLC:** Select High Level Compensation
When extremely bright light is projected at the camera masking is used on that section of the view to prevent partial saturation of the image
 - MODE: OFF / ON / NIGHT
 - LEVEL: 0 ~ 20 steps
 - COLOR: 0 ~ 13 steps
- **DNR:** Select Digital Noise Reduction
 - OFF / LOW / MIDDLE / HIGH / AUTO
- **MIRROR:** Select a flip mode (use this feature when using periscope block)
 - OFF / H / V / H&V
 - ⇒ H: Flips the picture horizontally on the screen
 - ⇒ V: Flips the picture vertically on the screen
 - ⇒ H&V: Flips the picture horizontally and vertically
- **SHARPNESS:** Adjust the sharpness level
 - 0 ~ 10 steps
- **ACE:** Select Digital WDR (Wide Dynamic Range)
 - OFF / LOW / MIDDLE / HIGH
- **DEFOG:** Sets the defog function
 - OFF / ON ↵
 - ⇒ MODE: AUTO / MANUAL
 - ⇒ LEVEL: LOW / MIDDLE / HIGH

* Can't use DEFOG and ACE at the same time (when DEFOG is on, ACE is off)
- **FREEZE:** Select realtime of still mode
 - OFF / ON
- **GAMMA:** Select GAMMA
 - 0.45 / 0.55 / 0.65 / 0.75



- PRIVACY: Use this to mask and area you want to hide on screen
 - OFF / ON
 - ⇒ MASK#: Select a mask area number (1 ~ 24)
 - ⇒ MODE: Mask enable or disable (OFF / ON)
 - ⇒ POSITION: Adjust the mask position
 - ⇒ SIZE: Adjust the mask size
 - ⇒ COLOR: Select the mask colour (0 ~ 13)
 - ⇒ TRANS: Select the mask transparency level (0 ~ 4)
- MOTION: When there is movement of the subject in the screen, there will be a motion detection event (**Motion detect output is not enabled in the ModCam hardware**)
 - OFF / ON ←
 - ⇒ AREA#: Setting 3 areas (1 ~ 3) of motion detection
 - ⇒ MODE: OFF / ON (Limit and define areas of motion detection)
 - ⇒ SENSITIVITY: Adjust sensitivity of MD (0 ~ 20 steps)
 - ⇒ POSITION: Adjust the area position
 - ⇒ SIZE: Adjust the area size
 - ⇒ INTERVAL: Select the alarm interval time (0 ~ 255 sec)
 - ⇒ DWELL TIME: Select the duration time of the MD (0 ~ 255 sec)
 - ⇒ ZOOM PRESET: Select motion zoom preset mode and position (OFF / ON ↔)
- DIS: Select digital Image Stabilizer mode
 - OFF / ON ←
 - ⇒ RANGE: Setting the image compensation range (10%, 20%, 30%)
 - ⇒ FILTER: Setting the sensitivity to hold DIS on in worst case (LOW, MIDDLE, HIGH)
 - ⇒ AUTO C: Setting auto centering mode (OFF, HALF, FULL)



- DEFECT: Compensates for bad pixels that may occur. Using this function checks for bad pixilation and then changes the THRS values until the image is fixed.
 - * When you use this function you need to block light going into the lens.
- IMAGE RANGE: Select image bit range (Full: 100%, Compressed: 75%)
 - FULL, COMP, USER ←
 - ⇒ LEVEL: Select user mode level (0 ~ 32)
- SYSTEM: Select NTSC (30/60fps) of PAL (25/50fps)
- HD FORMAT: Select digital output (1080p/30/(25)fps, 1080p/60(50)fps, 720p/30(25)fps, 720p/60(50)fps)
 - * 1080p60(50) format is available when TVI is switched off (use an external add-on plate if required)
- HD PRI: Be sure to set to HD-SDI only
- COMM: Set up the camera ID, baud rate and communications protocol
 - ID: Select the camera ID
 - ⇒ 1 ~ 255
 - BAUD RATE: Select the serial communication speed
 - ⇒ 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200bps
 - PROTOCOL: Select the communications protocol
 - ⇒ VISCA / PELCO-D / PELCO-P / UPDATE



- DISP SEL: Select the display item
 - OFF / ON ↵
 - ⇒ ID: OFF / ON
 - ⇒ TITLE: OFF / ON
 - ⇒ ZOOM RATIO: OFF / ON
 - ⇒ SYSTEM MSG: OFF / ON (MD alarm)
- SET TITLE: Select the camera title menu (Text edit - max 40 characters)
- INIT SEL: Select the initial display message during power on sequence
 - ID: OFF / ON
 - BAUDRATE: OFF / ON
 - VERSION: OFF / ON
 - INIT MSG: OFF / ON
- SET INIT MSG: Modify the initial message (Text edit - max 40 characters)
- LANGUAGE: Select the language
 - ENGLISH / SIMPLIFIED CHINESE / TRADITIONAL CHINESE / JAPANESE

* Character table of text edit mode

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A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i j k l m n
o p q r s t u v w x y z , . ( ) { } [ ]
0 1 2 3 4 5 6 7 8 9 * + - / = ~ ! ? " '

```